

Criterion A – Inquiring and Analysing

Strand 1: Explain and justify the need for a solution to a problem for a specified client/ target audience.

The problem being addressed is the **cultural shock** that comes from not having an established social identity, and from not fitting into one's surroundings. Social identity is **a person's sense of who they are** based on how they interact within and with groups of other people. The social psychologist Henri Tajfel proposed in 1979 that the groups in which people belong are a source of pride, self-esteem, and a sense of belonging to them¹. Social identity can lead to social categorization, which can lead to people feeling marginalized.

The client who is affected by this problem is Seth Michael Rosario, an American citizen who migrated to India over 20 years ago. Seth is a combat sport athlete, living with his Indian wife in my community, a neighbourhood in Gurgaon, India. When Seth first came to India, he was hit with a sense of cultural shock². This was primarily due to the factors which affected Indian lifestyle, such as familial arrangements, religion, greetings and customs, food, and language. Seth faced challenges at various stages in his life. **Lack of awareness and social amalgamation was the primary issue and driving factor behind the continued sense of cultural shock**, as it made him **feel left out**. New to the country, he didn't know what was regular acceptable behaviour, what was popular to talk about, or what the social practices were³. This caused difficulty in **interacting with people** and making new friends. Not knowing the **social cues and sub- communicative practices** put Seth at a disadvantage, where his personal and social identities were compromised in a new setting. He requires a solution to this problem to be created so that others in similar situations have better access to resources and help than he did.

There are three stages to the Social Identity Theory theorized by Henri Tajfel⁴. The first stage, known as **social categorisation**, is one where individuals subconsciously and consciously identify the similarities and differences between themselves and other people around them. Based on this, they categorize themselves, as well as others, into groups and sectors of society. In Seth's situation, he was an American citizen in India for the first time. He felt different from others around him due to nationality, ethnicity, language barriers, lack of knowledge of Indian pop culture, and lack of knowledge of customary Indian traditions. These are what set Seth apart and socially categorized him. The second stage of the Social Identity Theory is **social identification**, in which members adopt the norms and behaviours of the groups that they identify with. As a foreigner, Seth's role became actively trying to educate himself on his surroundings, and **familiarizing himself with Indian culture around him**. The third and final stage of social identity theory is **social comparison**, where one starts making comparisons between their groups and outsider groups. This often involves feelings of superiority and a complete basis of self-esteem in the inferiority of others, and this is the stage that we must work towards avoiding.

So that individuals travelling to India for the first time can **holistically embrace culture** without compromising on their own personal identity and beliefs, a product educating these migrants and foreign visitors on the customs and cultural practices across Indian society must be created. The solution that I propose is a **mobile application** which will serve as a **reservoir of information** collected as a culmination of primary and secondary research pertaining to the personal and cultural social practices and nuances present in different parts of India. A mobile application has been chosen as the format of the solution because it is easily accessible. A mobile phone is a compact, portable device that can be carried by individuals during their travels. Moreover, over 3.2 billion people are smartphone users⁵, making this a widely used and adopted platform across cultures and geographical locations. A virtuous cycle (Fig. 1) demonstrating the efficacy of the intended solution can be seen below.

The global context for this unit is "Personal and Cultural Expression", where we explore the ways in which we discuss and express ideas, feelings, nature, culture, beliefs, and values. The line of exploration that I have connected to this design situation to develop is "social constructions of reality; philosophies and ways of life; belief systems; ritual and play". This exploration connects with the intended product as the proposed solution aims to highlight the ways of life, belief systems, and social constructions and practices of Indian society in a way that promotes **international mindedness** and inculcates a sense of **cultural understanding** and appreciation in foreign visitors and migrants travelling to the country.

The key concept for this unit is "communication". This key concept deals in the exchange of facts, signals, ideas, and practices. It is centered around the activity of **conveying information**, and the proposed solution will serve as a medium that relays the knowledge and understanding of Indian social norms and subculture.

The related concept for this unit is "perspective". This related concept aims to analyze and explore the positions from which different stakeholders have different requirements and opinions on a situation and how they are each involved in solving a specific design problem. This unit looks at how **cultural perspective** influences interactions between communities, and the proposed solution fits into this ideal by introducing a product that eases these interactions by imparting relevant personal and cultural knowledge as required by the client and similar audiences. A user persona (Fig. 2) for the audience can be seen below

¹ Refer Appendix B-6

² Refer Appendix A-2.iii

³ Refer Appendix A-3.ii

⁴ Refer Appendix B-6

⁵ Refer Appendix B-7

to understand the role and perspective they play, and how their psychographic and demographic profiles will affect the creation and outcome of the intended product.

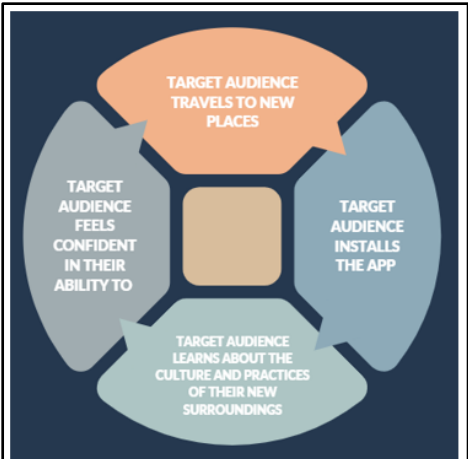


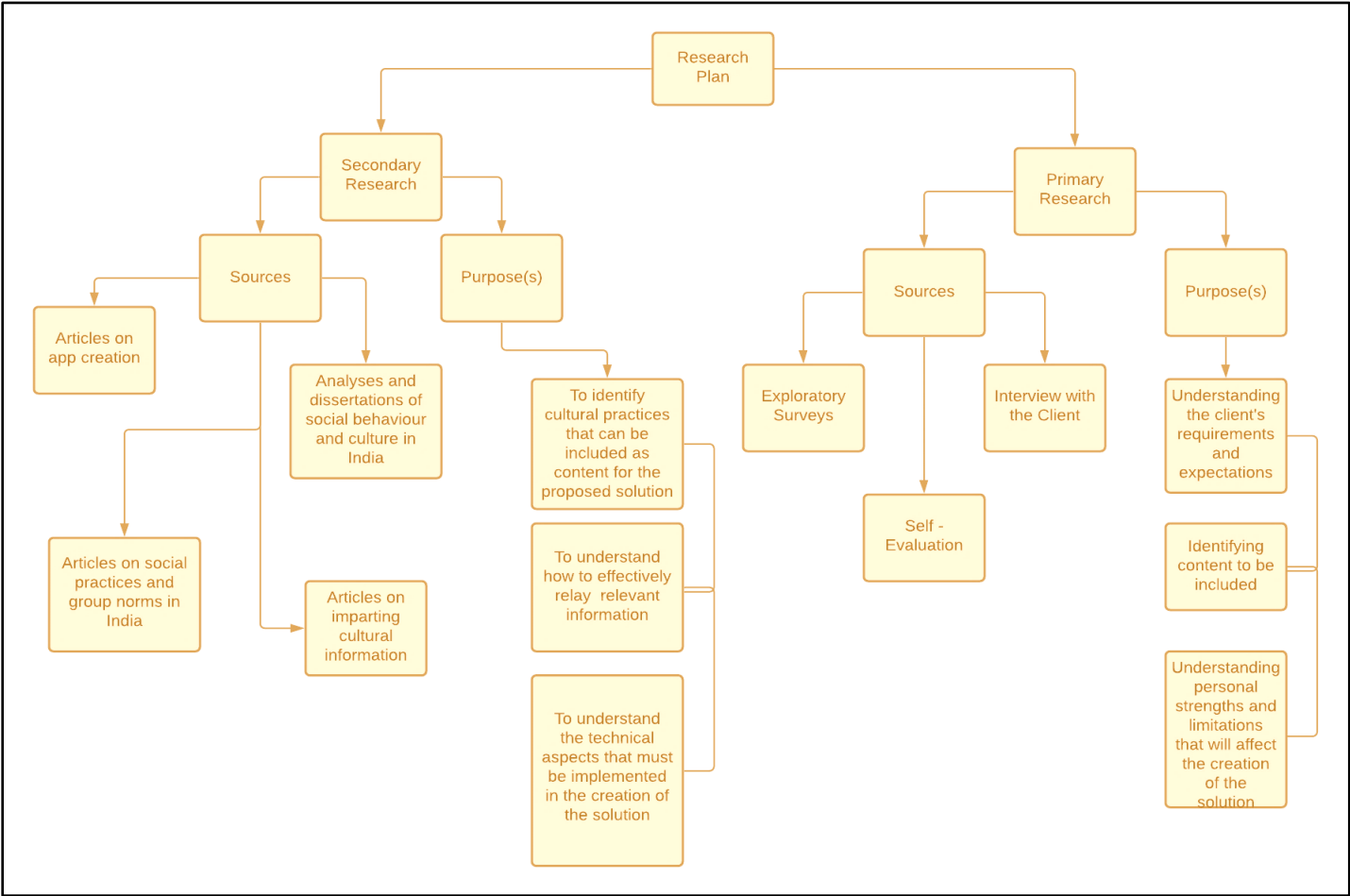
Fig. 1- Virtuous Cycle



Fig 2 (User Persona)

The Sustainable Development Goal that is connected to this problem and solution is SDG 10- Reduced Inequalities. This is due to the intended nature of the product, which **aims to reduce feelings of inequality** that come from social inadequacy and lack of knowledge on cultural contexts and appropriate behaviour, which could lead to the formation of in-groups and out-groups, and inferior vs. superior social dynamics.

Strand 2: Identify and prioritize primary and secondary research needed to develop a solution to the problem.



Note: This research plan has been carried out in its entirety. Specific questions asked and sources used can be found detailed in the following tables:

Primary Research (13th- 17th November):

Research Area	Research Questions	Source(s)	Justification	Priority and Relevance
Client Requirements	What are the client's expectations from this product?	Client Survey (<i>Refer Appendix A- 4.i for results</i>)	A client survey was used as it represented the direct, primary, authentic expectations that the client had. It ensured the credibility and relevance of the information in the context of this design problem.	High – This question aids the developer in gauging the client's expectations explicitly, and therefore getting a clear idea of what must be done in order to create a successful solution.
	What is the client's desired colour scheme? (Inclusive of 3-5 colours)	Client Survey (<i>Refer Appendix A- 4.ii for results</i>)	A client survey was used because it allowed me to directly collect the client's preferences in terms of colour for the creation of the user interface of the client.	Medium – This question allows the developer to understand the client's requirements in terms of the aesthetic of the final product. Colour is a factor that must be implemented in every element of the product, and thus, understanding the client's preferences is vital.
	What are 2-4 apps or websites where the client liked the fonts?	Client Survey (<i>Refer Appendix A- 4.iii for results</i>)	A client survey was used because it allowed me to directly collect the client's preferences in terms of font for the creation of the user interface of the client.	Medium – This question allows the developer to understand the client's requirements in terms of the aesthetic of the final product. As an app that will impart knowledge, font is key in the written aspects, and will improve a user's experience with the interface.
	How defined does the client want corners of shapes in the product to be?	Client Survey (<i>Refer Appendix A- 4.iv for results</i>)	A client survey was used because it allowed me to directly collect the client's preferences in terms of shapes for the creation of the user interface of the client.	Medium – This question allows the developer to understand the client's requirements in terms of the aesthetic of the final product. The structures of shapes in the design of a product introduce visual cohesiveness, and so, it is important to understand the client's preferences.
Content	According to residents in India, what are some things that foreigners travelling to India for the first time should know about the country?	Focus Group Survey (<i>Refer Appendix A-4</i>)	Using a Focus Group Survey as a method of data collection allowed me to gather data from personal experiences and observations from laypeople that are in the locality of the client, giving the research bona fide and anecdotal responses, which strengthen claims through first-hand accounts.	High – This question provides insight into what the local residents of India feel are the key points that foreigners must be aware of when they come to the country. The responses to this question will form crucial aspects of the final solution's content.
	According to residents in India, what are common social norms in India?	Focus Group Survey (<i>Refer Appendix A-4</i>)	A Focus Group Survey was used to gather data and answers pertaining to this research question, as it allowed direct insights on Indian social norms and practices from residents of India, who are the individuals who make up some of the fundamental in-groups and out-groups of the country.	High – This question aims to solicit information that will form the content of the solution, in terms of social norms and cultural practices.

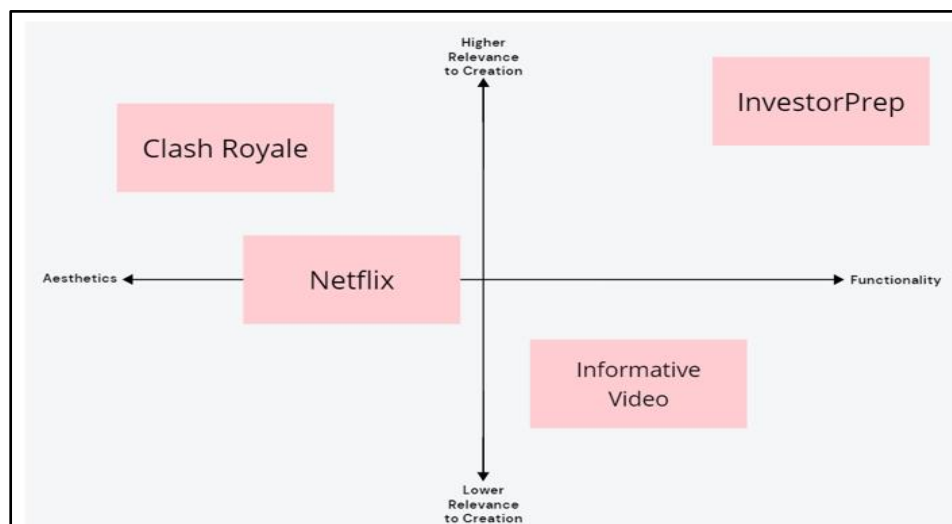
	According to residents in India, what are considered “bad manners” or socially rude or unacceptable in Indian society?	Focus Group Survey (<i>Refer Appendix A-4</i>)	The aim of this question was to gather data from personal experiences and observations, and so, gathering inputs from laypeople that are in the locality of the client gives the research bona fide and anecdotal responses, which strengthen claims through first-hand accounts.	High – This question aims to solicit information that will form the content of the solution, in terms of the frowned upon social norms and cultural practices of India.
Personal Strengths and Limitations	What prior experience does the developer have in the field of app development?	Developer Evaluation Questionnaire	This question aimed to analyse and gauge the developer’s personal experience. For this, the developer’s direct response was required. Thus, a self-survey was filled out.	Medium – This question aims to explore the gaps that must be filled in order for the developer to have a skill set that can create a successful solution.
	What does the developer already know about the content they would want to include in the solution?	Developer Evaluation Questionnaire	This question aimed to assess and understand the developer’s prior knowledge, directly in correlation to the content of the app. For this, the developer was required to directly identify their “known knowns”, or their open self, in terms of socio-cultural knowledge of India.	Medium - This question aims to supplement the content-oriented research conducted via other sources such that an understanding of the product’s content is established.
	What are the factors about the developer’s lifestyle and personality that may reflect as personal bias in the content of the product?	Developer Evaluation Questionnaire	A self-survey was conducted because it was necessary for the developer to identify their own cultural biases and experiences, so that a newfound self-awareness will help prevent an influence of bias in the product.	Medium – This question intends to analyse how the developer’s social identity and personal culture may affect the content produced for the final solution.

Secondary Research (16th – 19th November):

Research Area	Research Questions	Source(s)	Justification for the Source	Priority and Relevance of the Question
Content	What are patterns in social behaviour in India?	Online Article (<i>Refer Appendix B-9</i>)	This article was used as it consolidated various sources of primary and secondary information in order to offer a holistic approach to the faces and aspects of Indian society. The article explored themes and behaviour in various sectors, including extra-familial settings, families, religious groups, gender divisions, social classes, and castes.	High – This question aims to extract relevant information from researched secondary sources for the content of the product while also supplementing aforementioned primary research.
	What are the different social groups and their behaviours in India?	Online Article (<i>Refer Appendix B-10</i>)	This article was relevant to my research question, as it identified social classes in India and applied Marxist principals and social theories to them in order to offer a balanced view of social classes in India.	High – This question examines possibilities for the content of the product under a critical lens that is unbiased in a way primary research might be.
Communication	How can one rationalize a practice in subculture?	Research Paper (<i>Refer Appendix B-11</i>)	The selected research paper identifies different aspects of socialization, including social norms and how they shape human behaviour. This is directly relevant to the research question. Moreover, the source is published by a highly reputed research college, increasing its credibility and efficacy.	High – This question aims to understand how cultural norms can be understood without subverting either the audience’s personal identity or the cultural tradition.

	What rhetoric must be kept in mind when explaining a sensitive topic?	Online Article (Refer Appendix B-12)	The source highlights necessary communication skills and methods, and the techniques one should use while communicating with people who may not be receptive of information on sensitive topic. This source is also published by a reputed college, increasing its credibility.	High – This question aims to understand how to empathize with audiences in order to successfully impart information that increases cultural sensitivity and awareness.
	What factors make people feel inferior to cultures?	Online Article (Refer Appendix B-13)	This source is an article that was published on a website with the sole purpose of imparting knowledge. This ensures that the text is structured such that it is understandable and easy to grasp. It also explains the concepts of ethnocentrism and xenocentrism with elaborate examples. The source also delves into cultural shock, which was a problem faced by the client.	Medium – This question aims to understand what factors may prove to be barriers to socio-cultural understanding and amalgamation, so that the product can tactfully address them.
	What balance should be maintained in the types of media added to the content of the product? (Audio/Visual/Text ratio)	Video (Refer Appendix B-14)	This video amalgamates textual information with auditory explanations, graphics, and visuals in a way that demonstrates the information and applications I was looking for, and lays it out in a practical explanation.	Medium – This question aims to delve into methodologies of communication and representation of information, and the extent to which they achieve impacts on audiences.
Technical Aspects/ Product Creation	What are the different low-code app development platforms available to me?	Online Article (Refer Appendix B-15)	This article has an easy-to-understand interface with structured content and clarified parameters on which different tools and app development software are analysed. This allows me to easily look at the pros and cons of each available tool.	High – This question aims to give the developer an understanding of the different tools available for the creation of the solution.
	What fonts are associated with understanding and conceptual knowledge?	Online Article (Refer Appendix B-16)	This source introduces readers to the different aspects of fonts and typeface, with examples, in order to explain the effect and opportunities of each font family.	Low – This question serves to supplement and rationalize the font preferences of the client.
	What colours are associated with understanding and conceptual knowledge?	Online Article (Refer Appendix B-17)	The source offers a list of colours and their effect on human mood. There is also a paragraph introducing readers to the idea of colours affecting human psyche. This rationalizes the concept and makes it more understandable.	Low - This question serves to supplement and rationalize the colour preferences of the client.

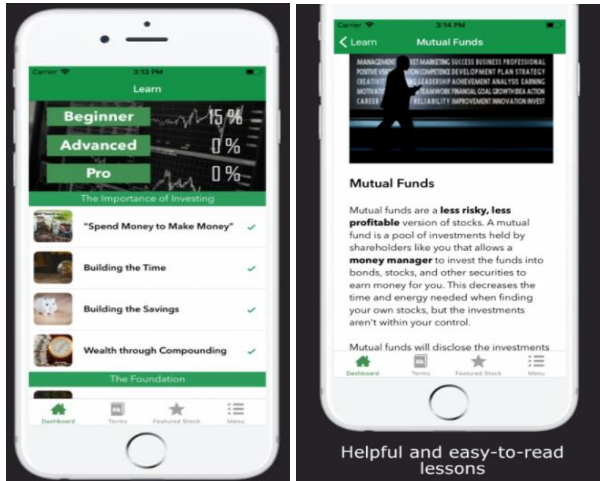
Strand 3: Analyse a range of existing products that inspire a solution to the problem.



The alongside figure is a Competitive Analysis Value Map. This diagram is a visual representation of the type and degree of relevance that the analysed existing products have in terms of inspiring a solution to the problem

Product 1: InvestorPrep

Refer Appendix B-18 for Product Image Source



Reason Behind the selection of this Product:

The fundamental purpose and functionality of the app are the same as those of the intended solution. This mobile application identifies a specific topic to impart knowledge, and then does so by utilizing multiple functional features. I aimed to analyse the overall functionality of the application particularly, so that it could inspire similar aspects of the final created solution.

Aesthetics:

InvestorPrep features a green, white, and black colour scheme. This is seen throughout the application, with little deviation.

Cost:

It is completely free to use InvestorPrep, making it accessible to anyone with an iOS (Apple) device.

Customer:

The application is directed at individuals looking to learn about how to handle and invest their finances in order to save money and grow their wealth.

Size:

The app InvestorPrep is 53.6 megabytes large.

Safety:

The application does not require any signing up for usage or the creation of accounts. This means that users do not need to submit any personal information to the application, making it a safe app to use, with no risk of data being compromised.

Functionality:

InvestorPrep aims to impart knowledge on the topic of investing money in various classes of digital assets and finance. It does so by:

- Featuring articles and snippets of information on the different aspects of investing and trading.
- Divide these articles into sections relevant to the topic
- Categorize the sections based on relevance and how advanced the knowledge is.
- Features complimentary images

Ergonomics:

- The categorization of articles allows users to easily identify snippets of information and individual, relevant articles for them to access.
- The lack of a main menu, or some sort of directory or sorting system makes navigation more tedious

Strengths:

- There are several articles explaining every aspect of trading and investing. This breaks the procedures down into elaborated upon snippets of information.
- The categorization of information is done based on how advanced it is, ensuring that beginners aren't overwhelmed with information, and that more advanced learners don't have to waste time re-learning information that they already know.
- The division of the articles into categories that represent different aspects of investing can help individuals with specific and particular queries easily access relevant information without having to waste time going through the other provided information.

Limitations:

- The articles are presented as one single, continuous, and scrollable list. This means that if a user were to try and access more advanced articles, they would have to scroll a lot in order to reach it. There is no drop-down menu, and the lists' headers aren't collapsible either.
- The images that have been added as supplements to the text in the articles are not correlated with the text, and do not aid in the visualisation of the information provided. The images take up space without providing much value to

the product. Users may also be left feeling perplexed if they are unable to find connections between the text and a projected image.

Takeaways:

- The created solution will present information in the form of articles. There should be organized sections which are easily navigable, by way of a designed menu.
- Projected images in the solution must have explicit connections to the presented text, such that readers can intuitively infer their relevance.

Product 2: Informative Video



Refer Appendix B-19 for Video Reference (Full product, as well as the Image Source)

Reason Behind the Selection of this Product:

This video covers the different aspects of Indian culture and lifestyle, including general population facts, government overview, a general history of the country, climate and terrain, clothing and attire, festivals and celebrations, food, religion, historical monuments and places of heritage, and music and dance. This product was analysed in order to understand the different aspects of Indian culture that I would be covering in the final created solution, and how I would be addressing them.

Aesthetics:

The video has distinct sections divided by rectangular headers that mark the beginning of a new topic of Indian culture. There is a colourful variety of images accompanying every topic, and the text fonts used are same throughout the video.

Cost:

It is completely free for audiences to view this video, as it is published on the free video sharing platform “YouTube”. In some cases, viewers may need to watch a short, sponsored advertisement before or in the middle of the video. The proceeds from this advertisement will go towards the creator of the video in such a case.

Customer:

The target audience of this video product is ostensibly comprised of people interested in learning about Indian culture, since the video talks about it extensively.

Size:

The video is 5 minutes and 57 seconds long.

Safety:

The website YouTube does not require any sign-up or account creation in order to watch the video, however, if a viewer agrees to the usage of cookies on the site, some personal data may be collected for advertisement and marketing purposes.

Functionality:

The video aims to give an overview of all the aspects of Indian culture and heritage. It does so by:

- Dividing the video into sections that cover the different aspects, including general population facts, government overview, a general history of the country, climate and terrain, clothing and attire, festivals and celebrations, food, religion, historical monuments and places of heritage, and music and dance.
- Including images as well as auditory explanations, accompanied by bullet point text of the key points.

Ergonomics:

- Because the video is divided into navigable sections, it allows users to skip through to relevant clips, saving the audience time, and making the product more efficient.

Strengths:

- The video covers ten different aspects of Indian culture and heritage, which gives the audience a broad understanding of the country.
- There are images which directly correlate to what is being said and what is written in the video. These images are vibrant and help the audience visualise the concept.

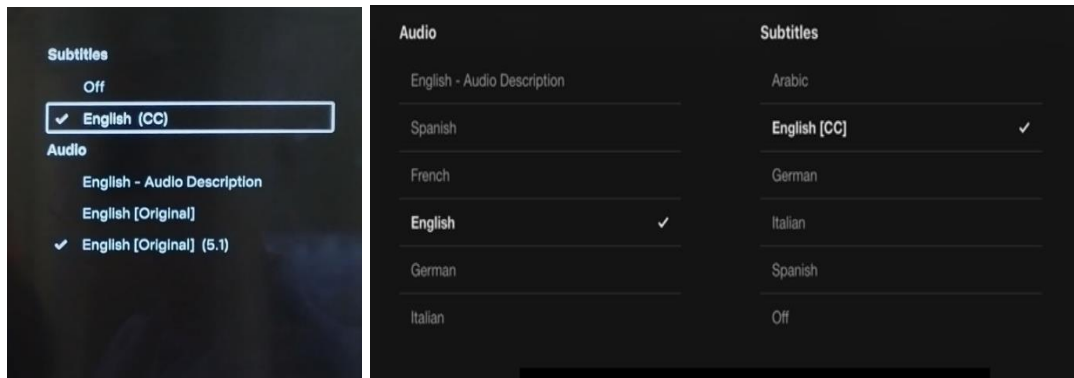
Limitations:

- The voiceover has an accent, which may be difficult to understand for users who are unfamiliar with the tonality of it.
- The text overlaps the pictures in a way that makes it hard to read and compromises visibility in some places.

Takeaways:

There is a large range of cultural aspects to consider for India, and different parts of India may have different cultures and practices, which need to be addressed separately.

Product 3: Netflix



Reason Behind the Selection of this Product:

Netflix is a widely used multimedia streaming platform. The client also uses Netflix, and has stated that he feels that it is an application with a visually appealing font. (Refer Appendix A-4.iii)

Aesthetics:

The application and website of Netflix follow a red and black colour scheme which is sustained throughout the product. The font used in the descriptions of the movies and shows on the site, and for the subtitles is called “Netflix Sans”.

Cost:

Netflix has a variety of plans that offer varying degrees of amenities, such as the number of screens you can simultaneously stream media on, and the visual quality. These plans range from mobile (INR 149 per month) to premium (INR 649 per month).

Customer:

The target audience for Netflix is comprised of various age groups 7-45 years old, in various demographics. However, the streaming service consistently provides a variety of content available in multiple languages that are easily understandable to all viewers due to the presence of subtitles and voiceovers.

Functionality:

Netflix aims to deliver a wide variety of accessible and understandable visual entertainment content (shows and movies) to people of different demographics. This inevitably brings up the issue of language barriers. To combat this, Netflix provides users with subtitles and voiceovers in other languages.

Ergonomics:

The cohesive and consistent usage of the same font throughout the product allows users to identify a brand an ecosystem in the product, which allows for seamless comprehension, navigation, and usage.

Strengths:

The font used in Netflix is “Netflix Sans”. It is a sans-serif font, and this font family has been studied to prove that it

increases legibility and makes the letters more distinct and understandable when reading off of a screen (*Refer Appendix B-16*).

Limitations:

Netflix doesn't provide a standard translation service for all shows and movies. The languages in which shows and movies are available to view and listen to vary from media to media, which can lead some shows and movies to be inaccessible for all.

Takeaways:

A sans serif font should be used in the final product in order to enhance legibility.

Product 4: Clash Royale



Reason Behind the Selection of this Product:

Clash Royale is a multiplayer real-time strategy game. It has a blue, white, and gold colour scheme which is distinctly visible. This is the preferred colour scheme of the client, as he has explicitly stated (*Refer Appendix A-4.ii*), which is why analysing this product can help inspire a layout for the solution.

Aesthetics:

- The central colour scheme of the application is blue, white, and gold.
- There is an emphasis on the blue colour, with gold being secondary and white being used only for embellishments.
- Where required, such as in character pictures, there are more rounded shapes, but they are balanced by more geometrical buttons and accessories.

Cost:

The app is free to use, but has in-app purchases which can be made to unlock extra benefits within the game.

Customer:

The app is directed towards young adults and teenagers who desire visually cohesive strategy gaming. The application may serve as a more portable, mobile version of strategy and battle games played by 'gamers' on laptops.

Size:

The application is 216.9 megabytes on the app store for iOS devices, and 139 megabytes on the play store for android devices.

Functionality:

The app aims to provide gameplay with easy-to-understand visuals and aesthetically appealing features, as the usage of the app relies on the visuals that users see. To enhance this, the application ties in the colour scheme into every character and visual feature of the game. There is some element of either blue, white, or gold in every aspect of the game, which increases cohesiveness and visual homogeneity and aesthetic in the application. Colours like green and red are used in places to improve the visuals and provide accents.

Ergonomics:

Colours are consistently associated with specific components. For example, the yellow button on the home screen indicates a new game's initiation. This allows users to subconsciously associate different colours with different aspects of the product, adding to a sense of continuity and cohesiveness in the product.

Strengths:

- Visually cohesive
- Continuity in the colour scheme

Limitations:

- Too many other colours included in player cards in certain areas, which takes away from the main colour scheme.

Takeaways:

- When blue is used as the central colour, gold and white blend well.
- Shading can be used to balance the sharpness/ roundness of shapes.

Strand 4: Develop a detailed design brief which summarizes the analysis of relevant research.

Brief of the Problem and the Client (Criterion A-i Brief):

The problem being addressed is the **insecurity** felt by foreigners residing in a different country, due to the lack of an established social identity. Social identity is the sense of self and identity that an individual establishes for themselves based on what social groups they are in and how they interact with others.⁶ The client for this problem is Seth Michael Rosario, an American Citizen who has been residing in India for over 20 years.⁷

Primary Research Brief (Criterion A-ii Brief):

According to the Focus Group Survey conducted, traffic conditions, food and drink, language, and social norms in India are **key to learn about**⁸. The created solution should address these aspects, and in terms of the client's expectations, the created solution should have **answers for common practices and problems in India**, easy to understand explanations, and visualisations of presented information⁹. The client's preferred colour scheme for the product is blue, white, and gold¹⁰, and the shapes in the solution should be sharply defined¹¹.

Secondary Research Brief (Criterion A-ii Brief):

Indian society is **dominated by a hierarchy** consisting of different social classes. Society and social norms are based on the **interactions** among these classes. Each social class also has its own rules and **social patterns**, but the entirety of India has strong family values that seep into the lifestyle¹². While addressing these aspects in the product, the phenomenon of **ethnocentrism**¹³ must be kept in mind in order to relate to foreign audiences. There should be a **balance of text and images** in the product. The font family that should be used in the product is 'Sans Serif', as it enhances **readability and understanding**¹⁴. The software "Thunkable" is a low-code platform, and is beginner-friendly, so can be used to create the application¹⁵.

Existing Product Research Brief (Criterion A-iii Brief):

As a takeaway from the first analysed product, the created solution should have **different sections** with different articles on the various aspects of Indian society. There should be a designed **menu that helps users navigate** the different sections and articles to enhance the **ergonomic functionality**. The images and visuals used in the product should have explicit connections to the text.

As a takeaway from the second analysed product, Indian culture is vast and encompasses **many aspects** which foreigners using the solution must be sensitized towards.

As a takeaway from the third analysed product, a Sans Serif font should be used consistently through the product in order to enhance **legibility and cohesiveness**.

As a takeaway from the fourth analysed product, in order to effectively create an aesthetically appealing layout keeping in mind the client's preferred colour scheme (blue, white, gold), blue should be the **central colour**, with white and gold **providing accents and added contrast**.

Product Brief:

The proposed solution will be a **virtual guidebook**-like application. It will contain articles on specified aspects of Indian culture, sub-culture, and social practices, based on the primary and secondary research conducted in Criterion A, Strand 2.

⁶ Refer Appendix B-6

⁷ Refer Appendix A-2.i

⁸ Refer Appendix A-5

⁹ Refer Appendix A-4.i

¹⁰ Refer Appendix A-4.ii

¹¹ Refer Appendix A-4.iv

¹² Refer Appendix B-10

¹³ Refer Appendix B-13

¹⁴ Refer Appendix B-16

¹⁵ Refer Appendix B-15

The articles will be categorized according to the sub-topic they address within Indian culture, and in order to ease navigability, a menu feature will be implemented in the product.

Connection to the KC, RC, and GC:

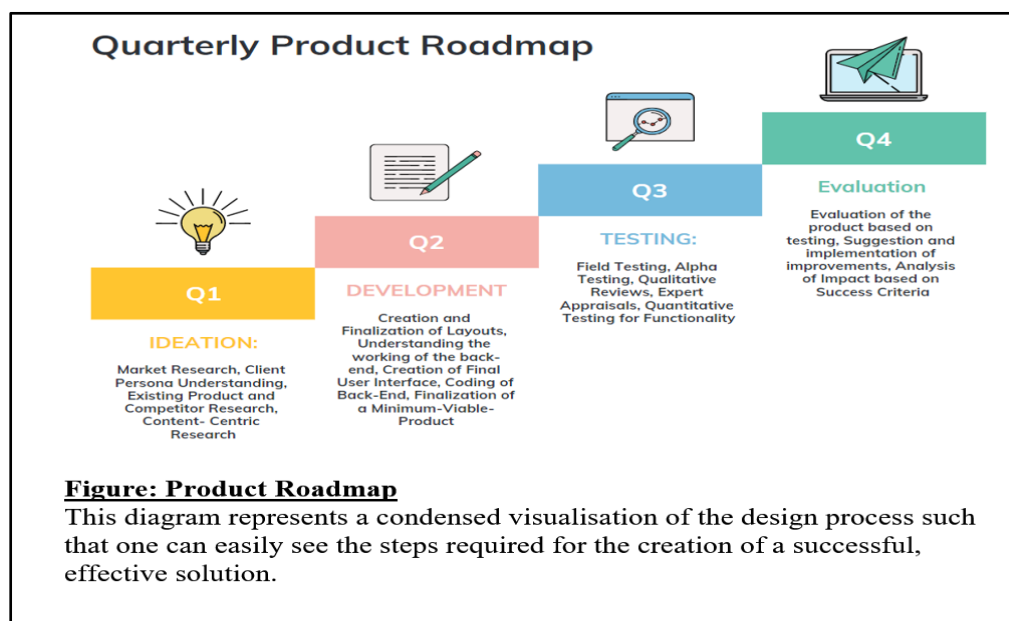
The proposed solution, an informative mobile application, addresses the key concept ‘Communication’ by serving the fundamental purpose of relaying **information and ideologies**.

The related concept ‘Perspective’ is addressed by keeping in mind the ethnocentrism, or the feeling that one’s surroundings are the ‘normal’ and ‘default state’ that is intrinsic to all human beings. Indian culture will be explained from this perspective in the final solution so that audiences can find it easier to relate to.

The global context “Personal and Cultural Expression” is addressed by how the application aims to **express cultural values** in order to familiarize foreign visitors with a new personal and social identity.

ATL Brief:

Through the creation of the product, the ATL (Approaches to Learning) Skills that I will be developing and demonstrating are Information Literacy Skills, Transfer Skills, Organization Skills, and Communication Skills. My Information Literacy skills will be honed through the research I do, both primary and secondary, in order to create the content for the application. My Transfer skills will be applied as I will be connecting my understanding of the cultural nuances around me to information in the application. My Organizational skills will improve as I will be organizing and collating information in a **systemically navigable application**. Finally, my communication skills will be used while writing the relevant articles for the application.

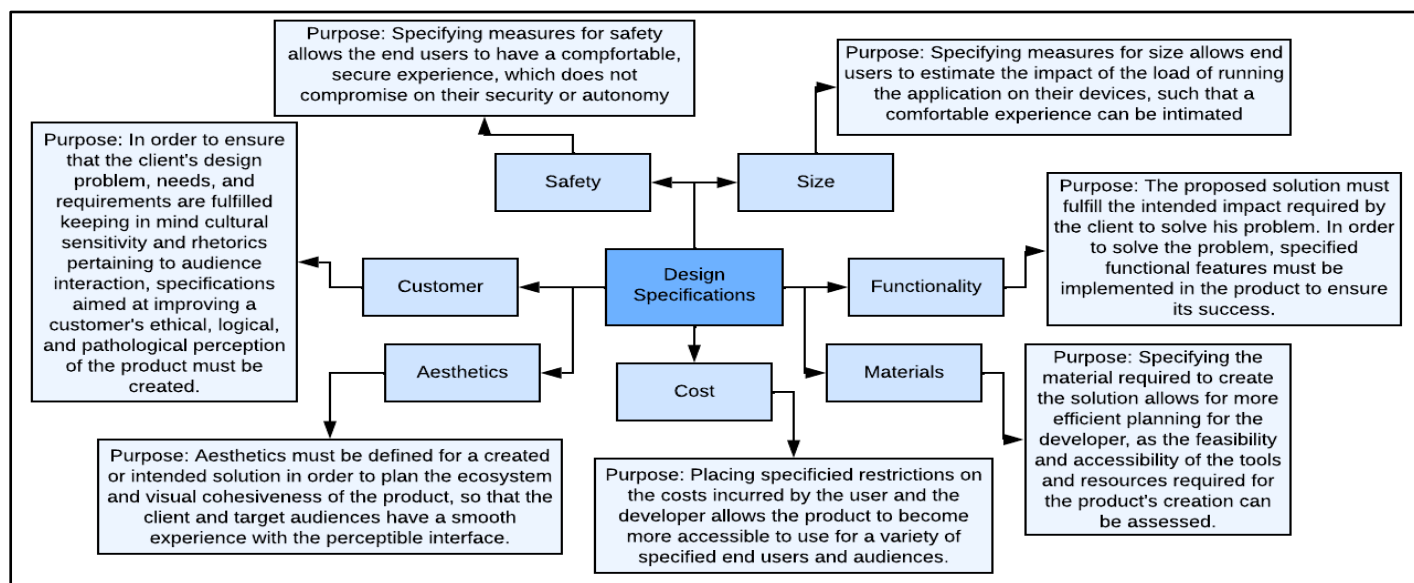


Success Criteria Brief:

The created solution should be **objectively aesthetically pleasing and easily navigable**, such that users can comfortably locate and utilize information regarding Indian culture and social structures, and how it affects lifestyle and heritage. This should be encompassed within articles alongside relevant images. If the solution meets the requirements of a wider audience while directly addressing the needs of my client, then it is a success.

Criterion B

Strand 1: Develop design specifications which clearly state the success criteria for the design of a solution.



Design Element	Design Specifications	Justification	Testing Method
Aesthetics	<ul style="list-style-type: none"> Colour Scheme- Blue (HEX- 006992), White (HEX- F4F4F8), Gold (HEX- FFCB47) Sans Serif font family- Helvetica font to be used. Free to use images to be placed along with text Sharper, defined shapes Flat designs 	<p>The colour scheme decided is the indicated preference of the client (<i>Refer Appendix A-4.ii</i>). The client has also indicated the requirement of visuals in the solution (<i>Refer Appendix A-4.i</i>), and has stated that shapes in the solution should be sharply defined (<i>Refer Appendix A-4.iv</i>). The font to be used is a Sans font, as secondary research has proved that it increases legibility (<i>Refer Appendix B-16</i>). This typeface is also preferred by the client, who likes similar fonts in another application, Netflix, which uses Netflix Sans (<i>Refer Appendix A-4.iii</i>). Helvetica is the most commonly used sans font, which is why it has been selected.</p>	<p>The aesthetics of the application will be tested through Guerrilla Testing, which will generate qualitative data that can be taken into account to improve the user interface and experience of the solution.</p>
Cost	<ul style="list-style-type: none"> No cost to be incurred for the developer No cost to be incurred for users of the solution 	<p>“Thunkable” is a free to use software (<i>Refer Appendix B-15</i>), and thus no cost will be incurred by the client.</p> <p>A similar analysed application in Strand A-3 (InvestorPrep) is also free to use, and therefore more accessible to a wider range of audiences.</p>	<p>There is no testing method required for this specification, as research has already shown that the chosen software is free to use. The client’s incurred costs can be verified through user feedback.</p>
Customer	<ul style="list-style-type: none"> Solution will be designed directly as per the client’s preferences and requirements foremost. The rhetoric kept in mind while portraying the content of the product will be considerate of ethnocentrism. 	<p>The client is a direct representative of the target sample population, which consists of foreigners visiting/ living in India (<i>Refer Appendices A-2, A-3, A-4</i>). His experiences and opinions are directly relevant to the purpose of the solution. Ethnocentrism makes feelings of cultural shock more prominent in an individual (<i>Refer Appendix B-13</i>), which is why ethnocentric feelings must be kept in mind when designing the content of the solution.</p>	<p>This will be tested through Contextual Inquiry and Explorative Assessments that will gauge how well the client’s requirements have been met, and how understandable the content is.</p>
Size	<ul style="list-style-type: none"> The solution will not exceed a size of 55 megabytes. 	<p>The size of a similar analysed existing product (InvestorPrep) is 53.6 MB. This has been rounded to the upper bound in order to create a sample size for the product.</p>	<p>This aspect will be tested after the creation of the solution and will be verified through Performance Testing.</p>
Safety	<ul style="list-style-type: none"> The solution will not require the collection of any data from the audience 	<p>As demonstrated by an analysed product, InvestorPrep, no collection of personal data is required when imparting knowledge through articles.</p>	<p>Contextual Inquiry can be used to verify this aspect of the solution.</p>
Functionality	<ul style="list-style-type: none"> There will be articles on Indian culture in the application for users to read. The articles will be categorized on the basis of which aspect of Indian culture they address. The aspects being addressed in the sample articles will be Social Hierarchy and Classes, Family Values, and Respectful Behaviour. There will be a menu designed to navigate the different sections and articles in the app. There will be a ‘home’ screen containing buttons that lead 	<p>In an analysed application, InvestorPrep, articles are used to impart knowledge to a target audience, and so will be used in the created solution. Also in InvestorPrep, the articles are organized according to how advanced the knowledge is. Similarly, the articles in the solution will be organized by what aspect of Indian culture they addressed. While analysing InvestorPrep, it was observed that the lack of a designated menu or home screen was hindering the user experience, so these features must be present in the created solution. For ease of navigation, the articles will be vertically scrollable.</p> <p>The subjects on which the sample articles will be written are based on client requirements</p>	<p>Unmoderated Remote Usability Testing and Black Box Testing can be used to verify this aspect of the solution and analyse the efficacy of the solution.</p>

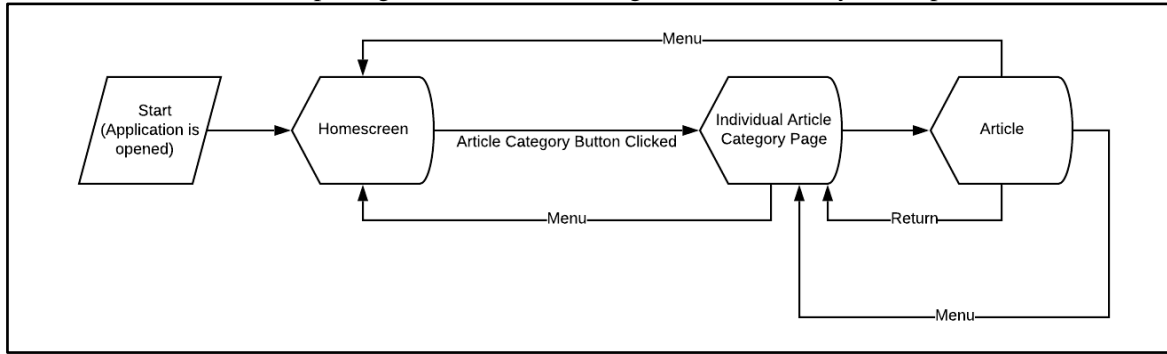
	<p>directly to the different article sections.</p> <ul style="list-style-type: none"> The articles will be vertically scrollable. The response time of each button should be less than a second 	(Refer Appendix A-2.iii) and Focus Group Survey results (Refer Appendix A-5	
Materials	<ul style="list-style-type: none"> The software “Thunkable” will be used to create the application. 	Thunkable is a low-code platform that allows beginners to develop extensive applications. As one with low coding experience, this is helpful and relevant to my design problem.	This specification can be verified via White Box Testing .

Success Criteria, in Accordance with Design Specifications:

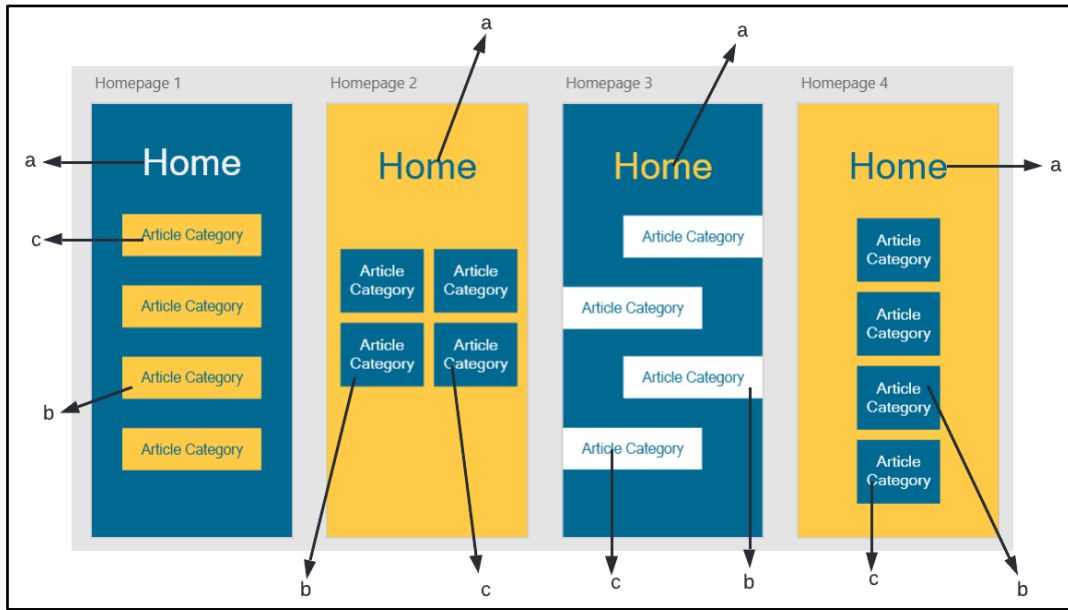
Design Element	Success Criteria	Scoring
Aesthetics	i. A colour scheme consisting of only Blue, White, and Gold is present throughout the product.	4-5
	ii. The font Helvetica is used throughout the product.	
	iii. There are images demonstrating every article.	
	i. Blue, White, and Gold are present with additional colours in the product.	2-3
	ii. A sans serif font is used in the product, but not only/specifically Gill Sans MT	
	iii. There are images demonstrating 50% - 75% of the articles.	
	i. Either of or all three of the colours Blue, White, and Gold are not present in the product.	0-1
	ii. No sans serif typeface is used in the product.	
	iii. 0- 25% of the articles have images.	
Functionality	i. There are four or more sample articles on Indian social culture in the product.	4-5
	ii. The words/phrases “Social Hierarchy and Classes”, “Family Values”, and “Respectful Behaviour” are explicitly mentioned and addressed.	
	iii. The article pages are all vertically scrollable.	
	iv. There is a homepage which contains buttons leading to other sections of the application.	
	v. There is a menu present on every page which allows users to switch to either a specific section of the app or to the homepage.	
	vi. Each button has a response time less than 1 second.	
	i. There are 2-3 sample articles on Indian social culture in the product.	2-3
	ii. The words/phrases “Social Hierarchy and Classes”, “Family Values”, and “Respectful Behaviour” are addressed but not explicitly mentioned.	
	iii. 50- 75% of the app’s pages are vertically scrollable	
	iv. There is a homepage that leads to 50-75% of the other pages.	
	v. There is a menu present on every page which allows users to switch to either a specific section of the app or to the homepage. The options available consist of 50- 75 % of the other pages, not all.	
	vi. Some buttons have a response time less than 1 second, whereas others do not.	
	i. There are 0-1 sample articles on Indian social culture in the product.	0-1
	ii. The words/phrases “Social Hierarchy and Classes”, “Family Values”, and “Respectful Behaviour” are neither addressed nor explicitly mentioned.	
	iii. Less than 25% of the app’s pages are vertically scrollable.	
	iv. There is no homepage.	
	v. There is no menu.	
	vi. No buttons have a response time less than one second.	
Size	The application is 55 megabytes or less in size.	4-5
	The application is between 55-75 megabytes in size.	2-3
	The application is over 75 megabytes in size.	0-1

Strand 2: Develop a range of feasible design ideas which can be correctly interpreted by others.

Flow Chart depicting the back-end workings and functionality of the product:



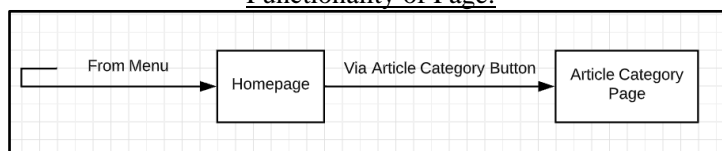
Homepage:



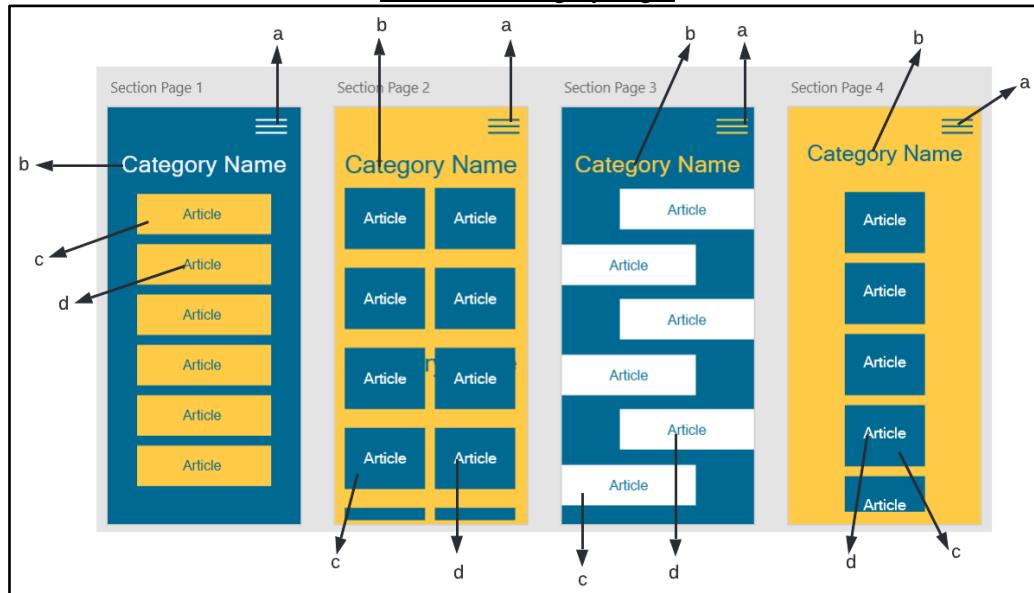
Annotations:

Corresponding Letter	Annotation
a	Home title, indicating to the users that this page is the homepage.
B	Article Category button, which users can click in order to go to the page for that specific category. This allows navigation between pages in the app.
C	Article Category text, which indicates to the user the purpose of the button, and which page it will lead to. This makes the application more cohesive and comprehensive.

Functionality of Page:



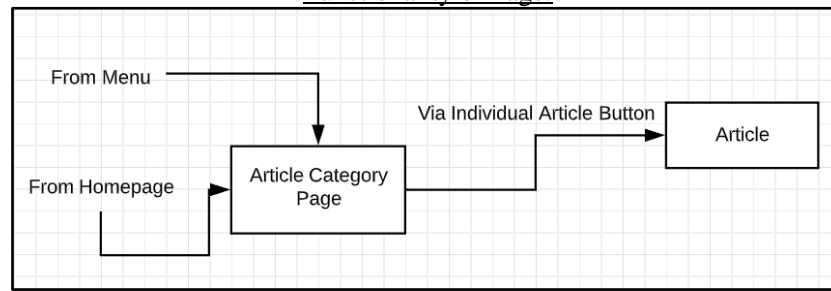
Individual Category Page:



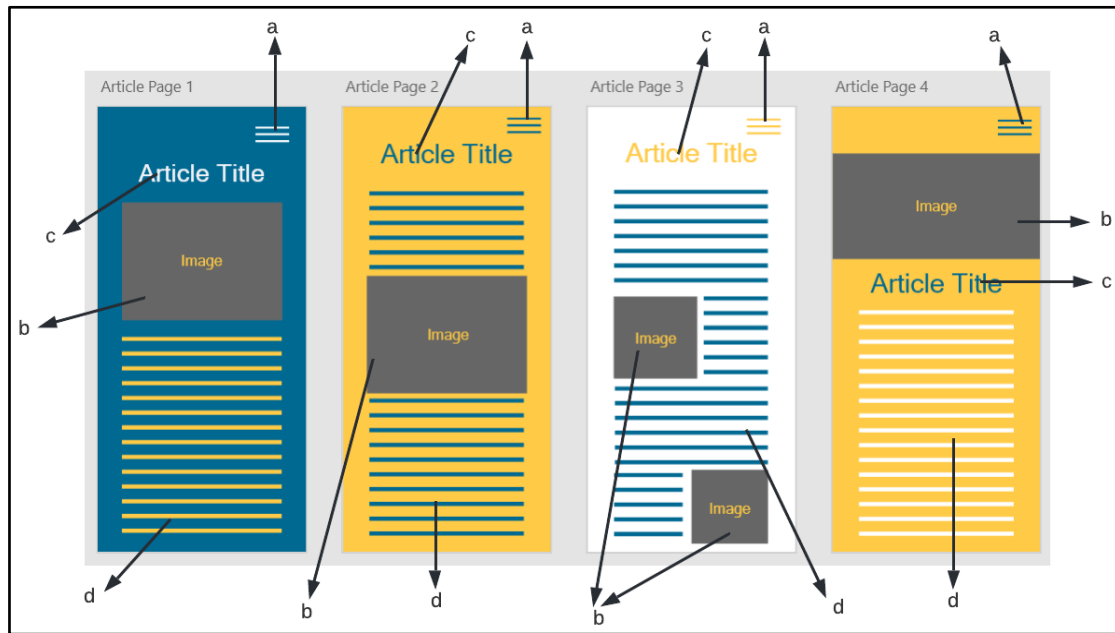
Annotations:

Corresponding Letter	Annotation
a	Menu button, which users can press in order to access the list of other pages they can visit within the app.
B	Title of the article section, indicating which category the available content falls into.
C	Article button, which users can click in order to access the full article and content to read.
D	Article Title on the button, to highlight to users which article they are accessing.

Functionality of Page:



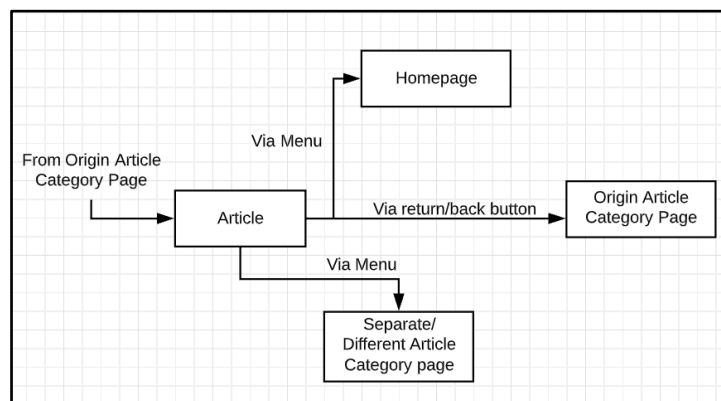
Individual Article Page:



Annotations:

Corresponding Letter	Annotation
a	Menu button, which users can press in order to access the list of other pages they can visit within the app.
b	Image displaying a visualisation and supporting graphic for the textual content provided.
c	Article Title, which gives an overarching theme and heading to the textual content.
d	The textual content of the article, which contains the relevant information on cultural practices and social norms required by the target audience.

Functionality of Page:

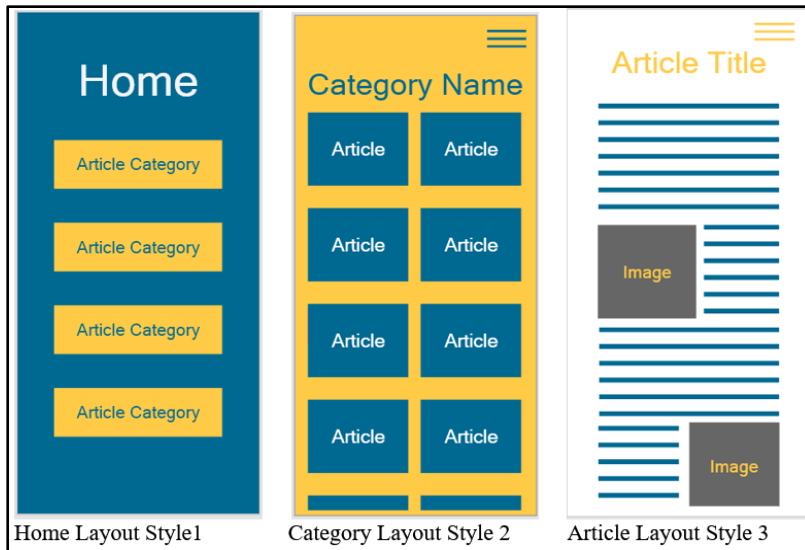


The created layouts were deemed to be cohesive, clear, and suitable enough to be correctly interpreted by others, since peers surveyed (*Refer Appendix A-13 for survey results*) to assess the clarity of the layouts affirmed that:

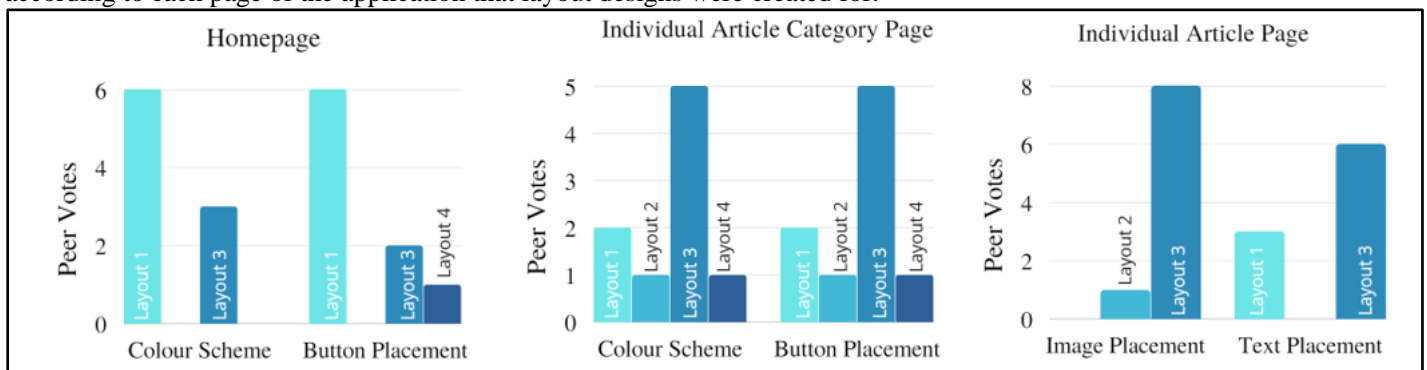
- The layouts presented were explicitly for an application aimed at imparting knowledge
- Buttons and label text were discernible from one another
- The placeholder components provide greater functional clarity and insight into the scope of the product

Strand 3: Present the final chosen design and justify its selection.

The final chosen designs are:



A **Focus Group Survey** was conducted in order to collect data from a wider audience, pertaining to the aesthetics of the created designs. The raw data can be found in *Appendix A-6*. The responses have been summarized into the below graphs according to each page of the application that layout designs were created for.



The client was also interviewed via Google Forms, and asked the same questions as the peers. His responses **explicitly indicated** a preference for Homepage layout 1's colour scheme and button placement, Article Category Page layout 2's Colour scheme and button placement, and Article layout 3's image placement and text placement. The raw data and results of this interview can be found in *Appendix A-7*.

Out of the four created layouts for that page, Homepage layout 1 was selected primarily because the client as well as 66.7% of surveyed peers find it the most **aesthetically appealing**. This layout also meets the previously established aesthetic specifications, and has a colour scheme of only Blue, White, and Gold.

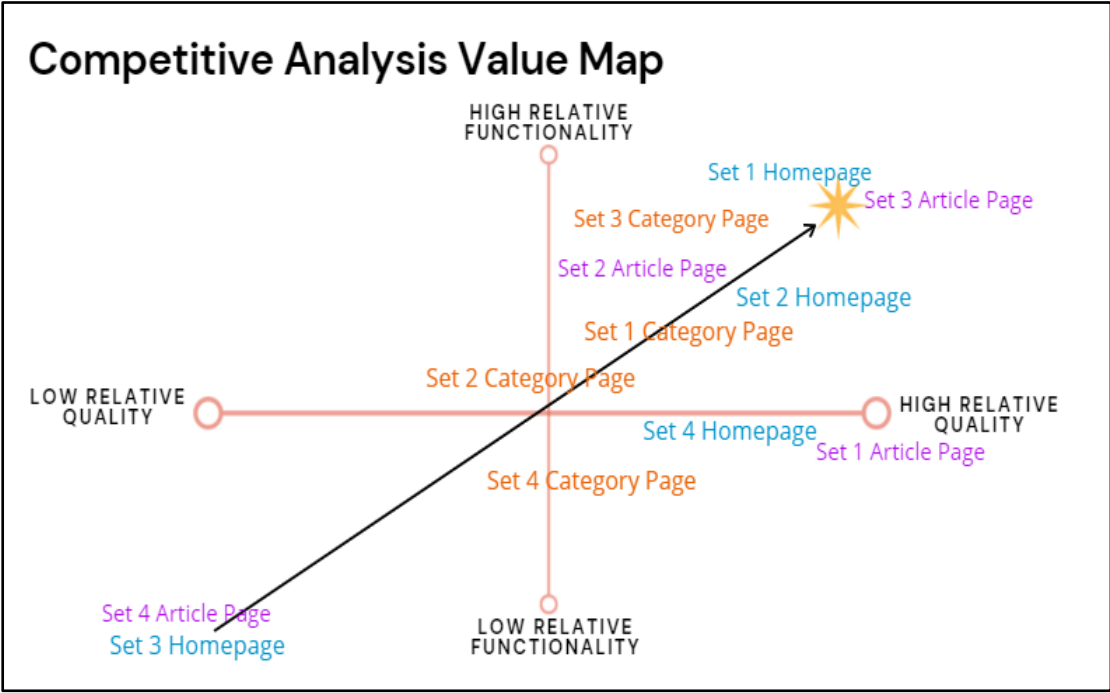
For the Individual Article Category Page, Layout 3 was the one most favoured by peers in terms of colour scheme and button placement. However, the client preferred layout 2. As specified earlier, the **client's preferences** and requirements for the solution must be the foremost ones met, which is why Layout 2 has been selected.

For the Article Page, Layout 3 was selected of the four created variations. This was selected as the client and 88.9% of peers surveyed felt that it had the best and most **effective image placement**, which acted as a balance to the text, and the client, along with 66.7% of the surveyed peers felt that Layout 3 had the **best text placement**.

The selected layouts are **appropriate for the creation of the product**. This claim is strengthened by the below comparison with the success criteria that can be tested at this stage of product development:

Design Element	Specifications Met	Score
Aesthetics	i. The created layouts all have colour schemes consisting of only blue, white, and gold. ii. The font "Microsoft Sans" has been used. It is a sans font, but it is not Helvetica.	4/5 (2.5 of 3 specifications met)

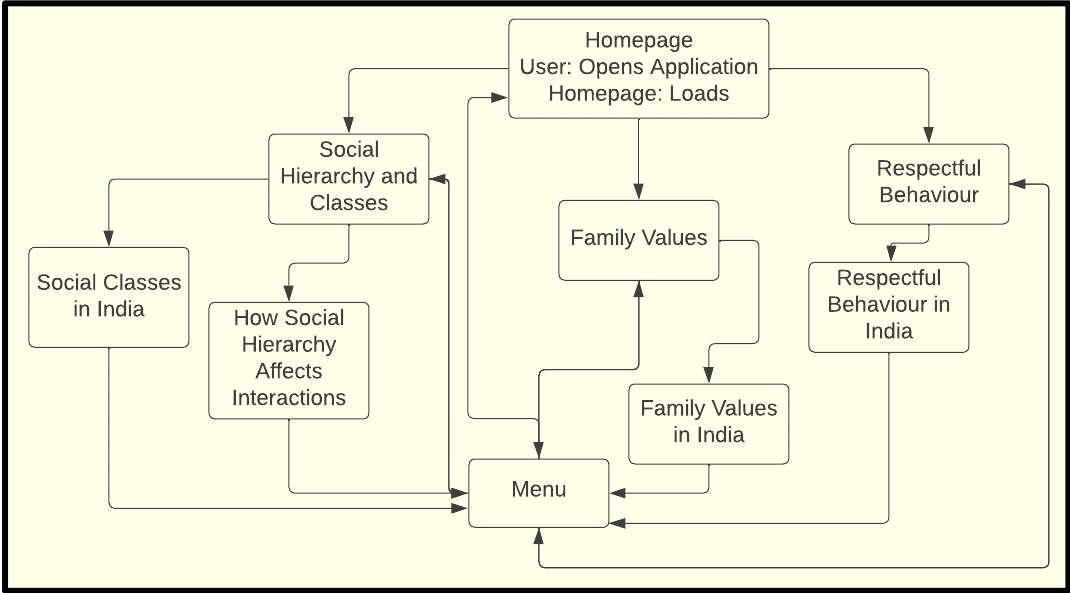
	iii. There are images placed to demonstrate the articles.	
Functionality	i. Over four articles have been provisioned for in the layouts. ii. There is a homepage which contains buttons leading to other sections of the application. iii. There is a menu present on every page which allows users to switch to either a specific section of the app or to the homepage.	5/5 (3 of 3 specifications are met)



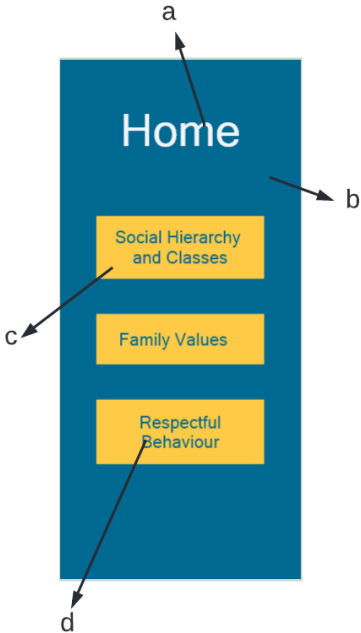
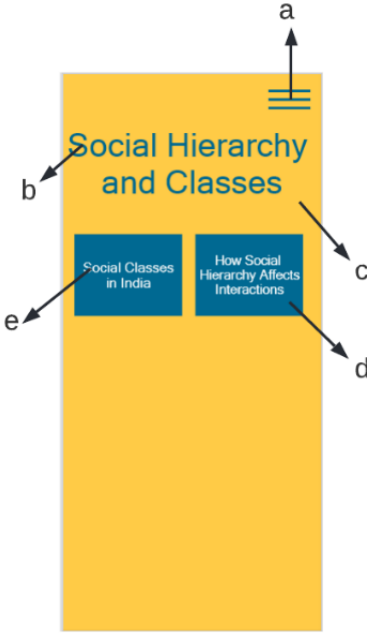
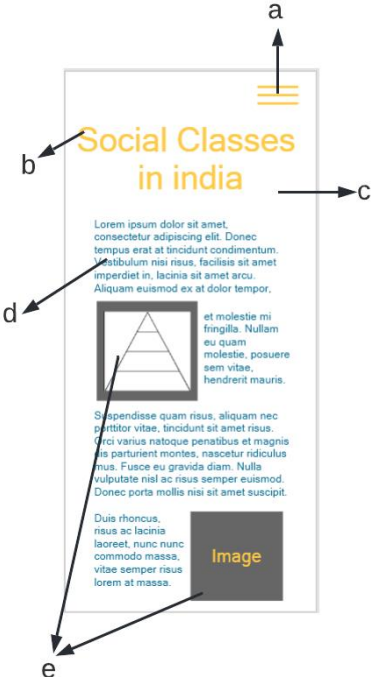
The alongside diagram, a Competitive Analysis Value Map, demonstrates the relative value of the functionality and aesthetics of the designed layouts based on peer feedback, such that relevant comparisons can be drawn and appropriate layouts can be selected.

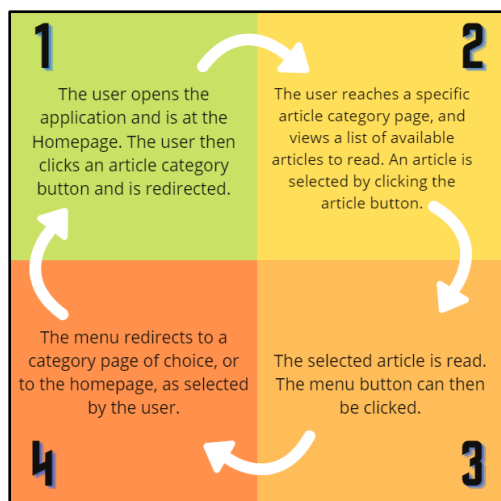
Strand 4: Develop accurate and detailed planning drawings/diagrams and outline the requirements for the creation of the solution.

Below is a diagram visualising the flow of the back-end processes in the application:



	Homepage	Individual Category Page	Article Page
Label			

			
a	<p>Feature: Home Title</p> <p>Function: Conveys to the user that this page is the homepage, or starting point of the application.</p> <p>Colour: White (HEX- F4F4F8)</p> <p>Font: Microsoft Sans</p>	<p>Feature: Menu Button</p> <p>Function: The menu button allows users to access a list of the category pages in the app, as well as the homepage, so that they can directly navigate the app.</p> <p>Colour: Blue (HEX- 006992)</p>	<p>Feature: Menu Button</p> <p>Function: The menu button allows users to access a list of the category pages in the app, as well as the homepage, so that they can directly navigate the app.</p> <p>Colour: Gold (HEX- FFCB47)</p>
b	<p>Feature: Background</p> <p>Function: The background serves as a backdrop for the other elements to stand out against and distinguish themselves using.</p> <p>Colour: Blue (HEX- 006992)</p>	<p>Feature: Category Title</p> <p>Function: Conveys to the user the nature of the content of a particular specified category of articles.</p> <p>Colour: Blue (HEX- 006992)</p> <p>Font: Microsoft Sans</p>	<p>Feature: Article Title</p> <p>Function: Conveys to the user the nature of the content of an article.</p> <p>Colour: Gold (HEX- FFCB47)</p> <p>Font: Microsoft Sans</p>
c	<p>Feature: Category Button</p> <p>Function: Allows the user to access a list of categories under which there are further a list of articles when clicked.</p> <p>Colour: Gold (HEX- FFCB47)</p>	<p>Feature: Background</p> <p>Function: The background serves as a backdrop for the other elements to stand out against and distinguish themselves using.</p> <p>Colour: Gold (HEX- FFCB47)</p>	<p>Feature: Background</p> <p>Function: The background serves as a backdrop for the other elements to stand out against and distinguish themselves using.</p> <p>Colour: White (HEX- F4F4F8)</p>
d	<p>Feature: Category Button Text</p> <p>Function: Indicates to the user the name of the category that the button leads to.</p> <p>Colour: Blue (HEX- 006992)</p> <p>Font: Microsoft Sans</p>	<p>Feature: Article Button</p> <p>Function: Allows the user to access a particular article and the core content of the application when clicked.</p> <p>Colour: Blue (HEX- 006992)</p>	<p>Feature: Article Text</p> <p>Function: This is the core content of the application and provides users with relevant information regarding Indian society and cultural behaviour.</p> <p>Colour: Blue (HEX- 006992)</p> <p>Font: Microsoft Sans</p>
e	N/A	<p>Feature: Article Button Text</p> <p>Function: Indicates to the user what the title of the article that they are accessing is.</p> <p>Colour: White (HEX- F4F4F8)</p> <p>Font: Microsoft Sans</p>	<p>Feature: Article Images</p> <p>Function: Adds supporting demonstrations and visualisations to the textual content.</p> <p>Colour: Multicolour/ Varying</p>



The alongside diagram is a representation of the intended ‘Tree Flow’ of the final created solution. A ‘Tree Flow’ is the ideal intended flow of usage for the end- user between components. It is the optimal way in which a user can navigate the pages of the app and progress through it in order to gain the maximum benefit from the intended functionality and purpose of the app.

System Requirements for the Creation of the Solution	Justification
Browser capable of running Thunkable	In order to run the software required to create the solution, a compatible browser is required.
Thunkable Software	Thunkable is required to build an application, and it has been selected as the platform to be used based on previously conducted secondary research.
Stable Internet Connection	A stable internet connection is required to run Thunkable on the selected compatible browser.
Thunkable Account	A Thunkable account is required to use the Thunkable software and save the application for improvements, development, and use.
Free Use/ Open-Source Images	Free and open-source images are required for the visuals in the content of the solution (articles)
Research Sources	Research sources are required in order to formulate content for the application in the form of articles.

For the client to run the created solution, they must have access to either the Thunkable website, or the Thunkable prototyping mobile application, so that they can launch the solution.

Criterion C

Strand 1: Construct a logical plan, which describes the efficient use of time and resources, sufficient for peers to be able to follow to create the solution.

The common tools required for all steps of the product creation plan are:

- Laptop
- Internet Connection
- Thunkable Software
- Criterion B Layouts
- Criterion A Research
- Writing/ Note making Platform

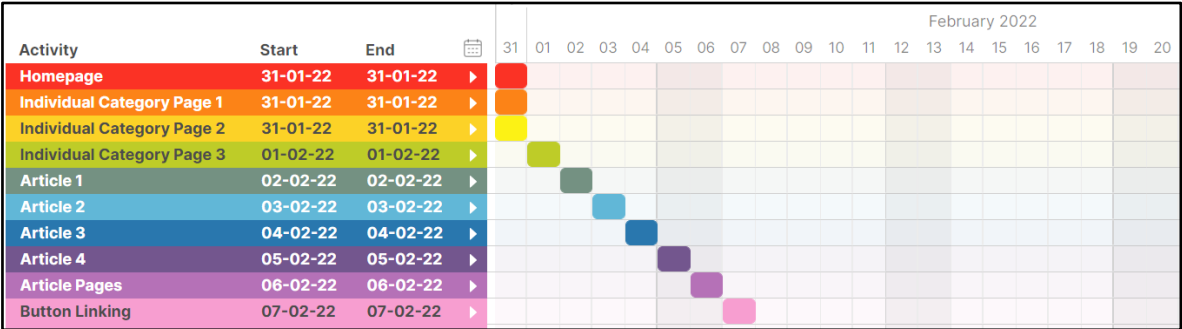
The following plan is logical as it outlines feasible required materials and resources, and describes processes that must be carried out directly in relation to the tools available, made efficient using given time constraints and a timeline to follow.

Step No.	Aspect of Product to be Created	Actions Needed to be Accomplished	Resources	Date Scheduled and Time Required
1	Homepage (Non-Functional), inclusive of titles, buttons, and text.	1. Use the label element to add a heading to the page. Modify the text font, saying, and colour as per the layout. 2. Referring to the created layouts in Criterion B, add three buttons to the page using the button feature. Modify their labels adhering to the created layouts. Arrange them in a vertically aligned line as per the layouts.	An informative tutorial video on operating the Thunkable drag and drop features and tools. (Refer Appendix B-20)	31 st January, 2022 20 Minutes

2	Individual Category Page – Social Hierarchy and Classes (Non-Functional), inclusive of titles, buttons, and text.	1. Use the label element to add a heading to the page. Modify the text font, saying, and colour as per the layout. 2. Referring to the created layouts in Criterion B, add two buttons to the page using the button feature. Modify their labels adhering to the created layouts. Arrange them in a horizontally aligned line as per the layouts. 3. Add a “Menu” button to the top-right corner of the page.	An informative tutorial video on operating the Thinkable drag and drop features and tools. (Refer Appendix B-20)	31 st January, 2022 20 Minutes
3	Individual Category Page – Family Values (Non-Functional), inclusive of titles, buttons, and text.	1. Use the text element to add a heading to the page. Modify the text font, saying, and colour as per the layout. 2. Referring to the created layouts in Criterion B, add a button to the page using the button feature. Modify its labels adhering to the created layouts. Arrange it in a horizontally aligned line as per the layouts. 3. Add a “Menu” button to the top-right corner of the page.	An informative tutorial video on operating the Thinkable drag and drop features and tools. (Refer Appendix B-20)	31 st January, 2022 20 Minutes
4	Individual Category Page – Respectful Behaviour (Non-Functional), inclusive of titles, buttons, and text.	1. Use the text element to add a heading to the page. Modify the text font, saying, and colour as per the layout. 2. Referring to the created layouts in Criterion B, add a button to the page using the button feature. Modify its labels adhering to the created layouts. Arrange it in a horizontally aligned line as per the layouts. 3. Add a “Menu” button to the top-right corner of the page.	An informative tutorial video on operating the Thinkable drag and drop features and tools. (Refer Appendix B-20)	1 st February, 2022 20 Minutes
5	Article on Social Classes in India	1. Refer to the research conducted in Criterion A, and create the outline of an article consisting of the salient points to include. 2. Conduct extra research in order to fill in any gaps 3. Write the article in its entirety.	Research from Criterion A, Strand 2	2 nd February, 2022 150 Minutes
6	Article on How Social Hierarchy Affects Interactions in India	1. Refer to the research conducted in Criterion A, and create the outline of an article consisting of the salient points to include. 2. Conduct extra research in order to fill in any gaps 3. Write the article in its entirety.	Research from Criterion A, Strand 2	3 rd February, 2022 150 Minutes
7	Article on Family Significance in India	1. Refer to the research conducted in Criterion A, and create the outline of an article consisting of the salient points to include. 2. Conduct extra research in order to fill in any gaps 3. Write the article in its entirety.	Research from Criterion A, Strand 2	4 th February, 2022 150 Minutes
8	Article on Rules of Respect in India	1. Refer to the research conducted in Criterion A, and create the outline of an article consisting of the salient points to include. 2. Conduct extra research in order to fill in any gaps 3. Write the article in its entirety. 4. Research to find relevant supporting images.	Research from Criterion A, Strand 2	5 th February, 2022 150 Minutes
9	Creation of Individual Article Pages	1. Use the text element to add a heading to the page. Modify the text font, label, and colour as per the layout. 2. Copy the article text from the original document, and paste it on the article page. Make sure that the page is scrollable, and format the text to fit the page and in accordance with the colour and font aesthetic specifications. 3. Repeat these steps for every article written.	An informative tutorial video on operating the Thinkable drag and drop features and tools. (Refer Appendix B-20)	6 th February, 2022 60 Minutes
10	Creation of Menu Page	1. Create a new page. 2. Modify the colours, fonts, and buttons to resemble the home page for continuity.	An informative tutorial video on operating the Thinkable drag and drop features and tools. (Refer Appendix B-20)	7 th February, 2022 20 Minutes
11	Linking of Buttons	1. Use the blocks section to create a back-end working procedure.	An article on buttons and their functionality and creation in	7 th February, 2022 30 Minutes

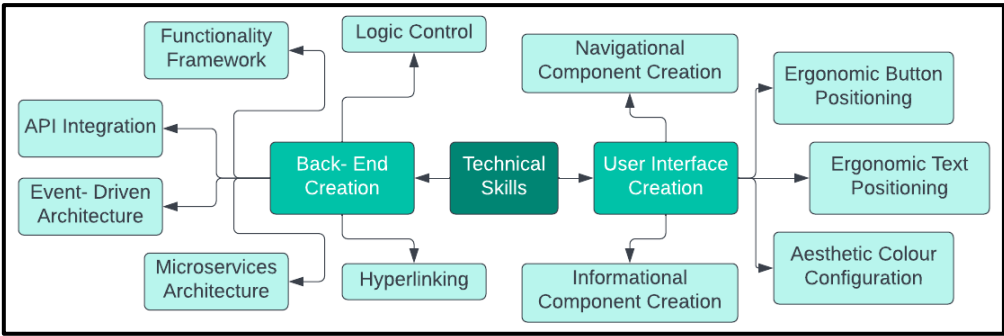
		2. Modify the properties of each button and menu across all pages to link to the relevant page, as designed in Criterion B.	Thunkable (<i>Refer Appendix B-21</i>)	
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The above table was deemed sufficient for peers to follow using a peer survey. 100% of respondents agreed that the plan sufficiently outlined the required resources and tools, and that the processes described in the plan were detailed, easy to understand, justified, and relevant. (*Refer Appendix A-9 for survey results*)

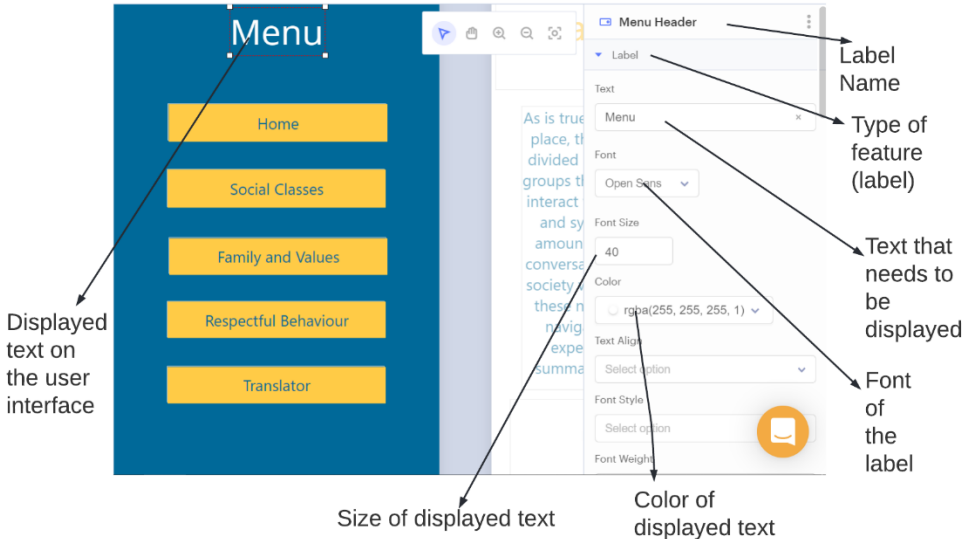
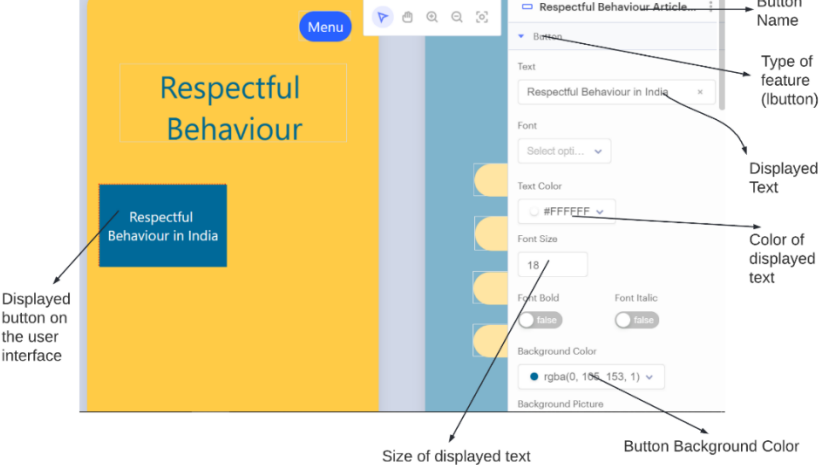


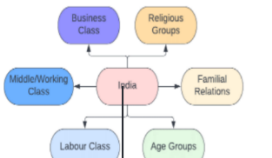
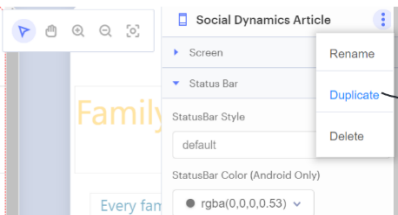
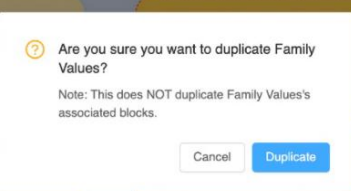

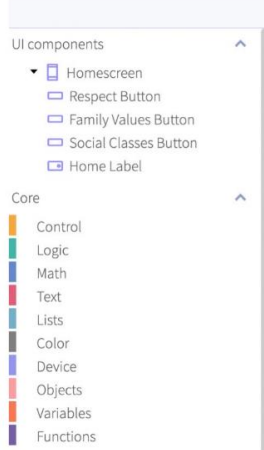

The above Gantt Chart demonstrates a visualisation of the intended timeline and progression of the creation of the solution, so that the plan is timely and efficient.

Strand 2: Demonstrate excellent technical skills while making the solution.



Evidence/ Work in Progress (WIP)	Technical Skill(s) Demonstrated
	<p><u>UI Creation: Creating and Styling Pages</u></p> <p>I demonstrated adept knowledge of Thunkable UI creation features, including page creation and formatting, through their application while creating the product. I used the “+” button to create new pages, and configured their settings on the side menu in order to change the background colour of the page, and decide whether the page was scrollable or not. This was reflected in the User Experience Interface.</p> <p>The exact specifications I addressed through this stage of the development process were customer, aesthetics, and functionality.</p> <p>The resources I used while creating this aspect of the solution were an informative tutorial video on operating the Thunkable drag and drop features and tools. (<i>Refer</i></p>

 <p>Displayed text on the user interface</p> <p>Size of displayed text</p> <p>Color of displayed text</p> <p>Label Name</p> <p>Type of feature (label)</p> <p>Text that needs to be displayed</p> <p>Font of the label</p>	<p>Appendix B-20), and the layouts created in Criterion B, strand 4.</p> <p><u>UI Creation: Labels and Text</u></p> <p>Using the “drag and drop” element adding option, I created multiple labels for various components of the app, including headings, as well as the core content articles themselves. I displayed knowledge of how to configure these elements by modifying the text colour, font size, font type, border of the text, and the textual sayings themselves in order to achieve the desired product interface.</p> <p>The exact specifications I addressed through this stage of the development process were customer, aesthetics, and functionality.</p> <p>The resources I used while creating this aspect of the solution were an informative tutorial video on operating the Thunkable drag and drop features and tools. (Refer Appendix B-20), and the layouts created in Criterion B, strand 4.</p>
 <p>Displayed button on the user interface</p> <p>Size of displayed text</p> <p>Button Background Color</p> <p>Button Name</p> <p>Type of feature (button)</p> <p>Displayed Text</p> <p>Color of displayed text</p>	<p><u>UI Creation: Buttons</u></p> <p>I added buttons to the interface of the product using the element “drag and drop” feature. Using the feature configuration menu, I made modifications to the text displayed, the text colour, the font type, font size, and background colour of the button. As specified by the client, I changed the buttons’ border radii so that they would have completely sharp and defined corners.</p> <p>The exact specifications I addressed through this stage of the development process were customer, aesthetics, and functionality.</p> <p>The resources I used while creating this aspect of the solution were an informative tutorial video on operating the Thunkable drag and drop features and tools. (Refer Appendix B-20), and the layouts created in Criterion B, strand 4.</p>
	<p><u>UI Creation: Images</u></p> <p>I positioned an image element where required on the article pages using the “drag and drop” feature. I added images relevant to the content of the product by changing the source file of the image. I also resized the image and positioned it for maximum visibility.</p>

<p>As is true for any populous and diverse place, the various people of India are divided into a number of factions and groups that influence the way that they interact with each other. Social classes and systems make up a significant amount of social dynamics, political conversations, and the way that Indian society works as a hierarchy. However, these nuances may seem difficult to navigate as a foreigner with little experience, so the guide below summarizes the salient information.</p>  <p>Image displayed on user interface</p>	<p>The exact specifications I addressed through this stage of the development process were customer, aesthetics, and functionality.</p> <p>The resources I used while creating this aspect of the solution were an informative tutorial video on operating the Thunkable drag and drop features and tools. (Refer Appendix B-20), and the layouts created in Criterion B, strand 4.</p>
 <p>Page duplication button</p>  	<p><u>UI Creation and Efficiency: Duplicating Pages and Elements</u></p> <p>In order to use time efficiently, I displayed my time management skills, and saved time by duplicating similar pages, instead of recreating them each from scratch. For example, the individual category pages all had the same colour scheme, button layout, and text positioning and formatting. So that I wouldn't waste time recreating these elements, I duplicated the pages using the duplicate button, and then modified the interface text in accordance with the created planning diagrams and functionality of each page.</p> <p>The exact specifications I addressed through this stage of the development process were customer, aesthetics, and functionality.</p> <p>The resources I used while creating this aspect of the solution were an informative tutorial video on operating the Thunkable drag and drop features and tools. (Refer Appendix B-20), and the layouts created in Criterion B, strand 4.</p>
  <p>Screen which has the components being coded for</p> <p>Component and user action, together forming an event</p> <p>Action and end component, coming together to form a logical process</p>	<p><u>Back-End Creation: Using events and logic to link pages</u></p> <p>The back-end design of the product consisted completely of the navigation among pages. For each page, I used events, which signified an action done by the user to a component of the app (for example, clicking a button), as triggers that led to the completion of a logical process or action, such as navigating to a different page. I did this for every button on every page of the product, integrating a menu page, so that users could</p>

	<p>seamlessly navigate from any page of the app to another.</p> <p>The resource I used during this aspect of development was an article on buttons and their functionality and creation in Thunkable (<i>Refer Appendix B-21</i>).</p>
	<p>Back- End Creation: API Integration</p> <p>The addition of a translator was an <i>exciting feature</i> requested by the client. In order to enhance the functionality of the application, I implemented this feature by integrating the Microsoft Translator API (Application Programming Interface) into the solution. I first added a Web API connection to the block code of the application. I then connected the input field text from the user’s end to the processing functions of the API by defining and generating a new object which would become the input body of the API JavaScript, and then could also be displayed usefully. I then also utilised text-to-speech functionality and integrated it into the translator in order to allow users to hear the translations.</p> <p>The resource I used during this part of the product’s creation was a video tutorial on integrating APIs into thunkable apps (<i>Refer Appendix B-23</i>)</p>

ATL:




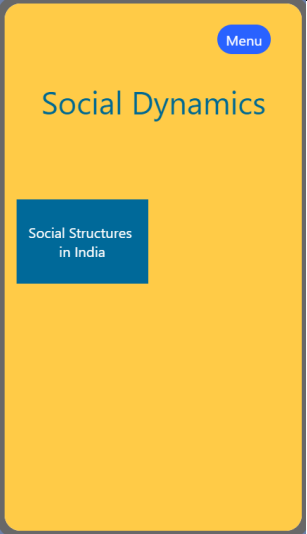
Skills Developed	Justification
Organization Skills	I developed my organizational skills through the creation of the product, since multiple aspects of the product were organized and categorized, such as components for each page, in order to create a cohesive, functioning application.
Time Management Skills	I honed and demonstrated my time management skills through the processes involved in the creation of the product. I managed my time by following a constructed plan with given time limitations and constraints. I demonstrated efficiency by using the “duplicate” option and saving time in the creation of the product.
Creative Thinking Skills	I displayed my creative thinking skills as I developed a novel solution to an authentic problem, and applied my existing and researched knowledge of Indian sub-culture and social practices in order to create new articles and informative pieces that were incorporated into the final solution.
Transfer Skills	My transfer skills were honed and developed as I made connections between the subject groups of Language and Literature, Individuals and Societies, and Digital Design in order to produce impactful articles demonstrating cultural understanding, that can be presented to an audience in the form of an application akin to a virtual guidebook.


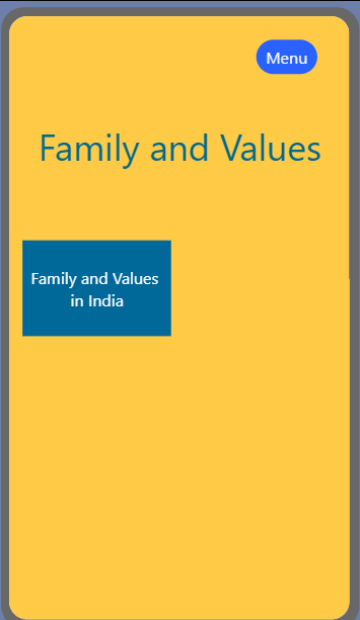


Summary:


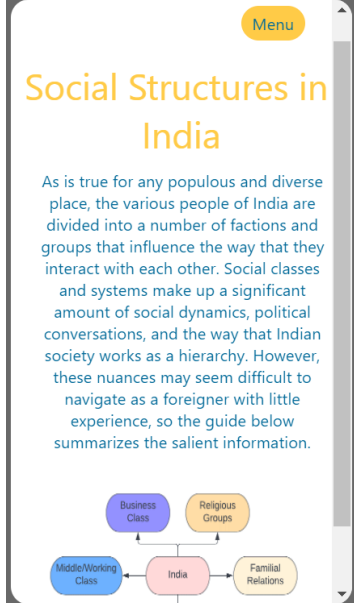
The product was created using the software ‘Thunkable’. On Thunkable, I heavily emphasized on the creation of a product that matches intended/planned layouts and functionality completely. Due to the drag and drop component beta feature on Thunkable, I was able to efficiently create a solution that was aesthetically completely as intended. While creating the product’s UI (User Interface), I utilized the **resizing, colour changing, element configuration, component sorting, renaming, image source replacement, font changing, component alignment, and text changing features** of the UI builder. I demonstrated my technical skills through the usage of these features. For the creation of the **back-end** of the product, which tied it together for seamless navigation, I used the **block coding** features of Thunkable. I combined **control blocks** with **logic insert blocks** in order to create **event code** that triggered the functionality of the buttons in the application. I also


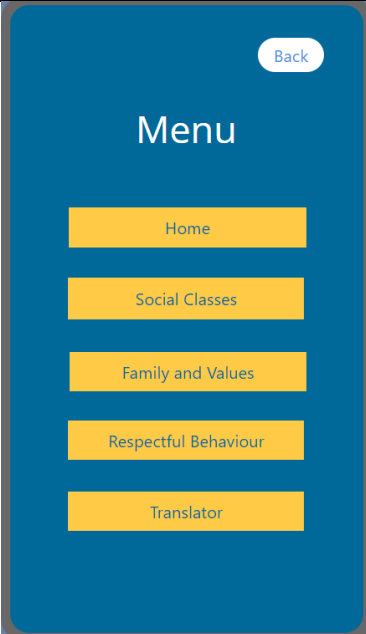
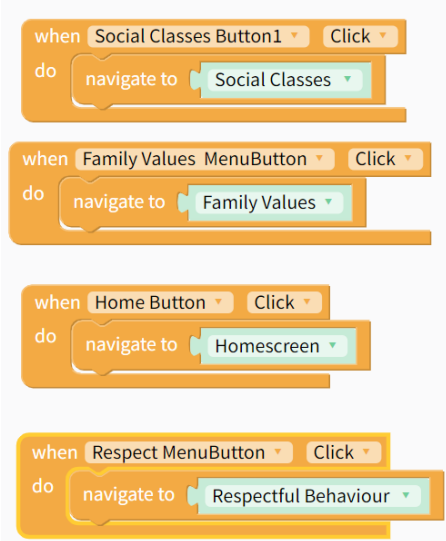

added and integrated a translator feature into the application using a **Web API connection**, and connecting **JavaScript Code modifications** to the Thunkable block code. In this way, I utilised a large range of Thunkable features in order to create a successful product, as intended.

Strand 3: Follow the plan to create the solution, which functions as intended.

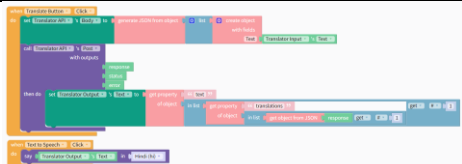
Step	Resources	Process	Intended Product	Outcome/ Evidence
1	<p><u>Intended:</u></p> <ul style="list-style-type: none"> - Thunkable software - Laptop - Internet Connection - Criterion B Layouts <p><u>Used:</u></p> <ul style="list-style-type: none"> - Thunkable software - Laptop - Internet Connection - Criterion B Layouts 	<p><u>Intended:</u></p> <ol style="list-style-type: none"> 1. Use the label element to add a heading to the page. Modify the text font, saying, and colour as per the layout. 2. Referring to the created layouts in Criterion B, add three buttons to the page using the button feature. Modify their labels adhering to the created layouts. Arrange them in a vertically aligned line as per the layouts. <p><u>Completed:</u></p> <p>All processes planned</p>		
2	<p><u>Intended:</u></p> <ul style="list-style-type: none"> - Thunkable software - Laptop - Internet Connection - Criterion B Layouts <p><u>Used:</u></p> <ul style="list-style-type: none"> - Thunkable software - Laptop - Internet Connection - Criterion B Layouts 	<p><u>Intended:</u></p> <ol style="list-style-type: none"> 1. Use the label element to add a heading to the page. Modify the text font, saying, and colour as per the layout. 2. Referring to the created layouts in Criterion B, add two buttons to the page using the button feature. Modify their labels adhering to the created layouts. Arrange them in a horizontally aligned line as per the layouts. 3. Add a “Menu” button to the top-right corner of the page. <p><u>Completed:</u></p> <p>Step 1 entirely 1 Button in step 2 Step 3 entirely</p>		

3	<p>Intended:</p> <ul style="list-style-type: none"> - Thunkable software - Laptop - Internet Connection - Criterion B Layouts <p>Used:</p> <ul style="list-style-type: none"> - Thunkable software - Laptop - Internet Connection - Criterion B Layouts 	<p>Intended:</p> <ol style="list-style-type: none"> 1. Use the text element to add a heading to the page. Modify the text font, saying, and colour as per the layout. 2. Referring to the created layouts in Criterion B, add a button to the page using the button feature. Modify its labels adhering to the created layouts. Arrange it in a horizontally aligned line as per the layouts. 3. Add a “Menu” button to the top-right corner of the page. <p>Completed:</p> <p>Steps 1 and 3 not done, duplication was used instead. Step 2 completed</p>			
4	<p>Intended:</p> <ul style="list-style-type: none"> - Thunkable software - Laptop - Internet Connection - Criterion B Layouts <p>Used:</p> <ul style="list-style-type: none"> - Thunkable software - Laptop - Internet Connection - Criterion B Layouts 	<p>Intended:</p> <ol style="list-style-type: none"> 1. Use the text element to add a heading to the page. Modify the text font, saying, and colour as per the layout. 2. Referring to the created layouts in Criterion B, add a button to the page using the button feature. Modify its labels adhering to the created layouts. Arrange it in a horizontally aligned line as per the layouts. 3. Add a “Menu” button to the top-right corner of the page. <p>Completed:</p> <p>Steps 1 and 3 not done, duplication was used instead. Step 2 completed</p>			
5	<p>Intended:</p> <ul style="list-style-type: none"> - Microsoft Word/ Google Docs/ Virtual Notetaking Platform - Laptop - Internet Connection - Criterion A Research <p>Used:</p> <ul style="list-style-type: none"> - Google Docs - Laptop - Internet Connection - Criterion A Research 	<p>Intended:</p> <ol style="list-style-type: none"> 1. Refer to the research conducted in Criterion A, and create the outline of an article consisting of the salient points to include. 2. Conduct extra research in order to fill in any gaps 3. Write the article in its entirety. <p>Completed:</p> <p>All processes planned</p>	N/A	<p>Introduction to Social Classes in India:</p> <p><u>Outline:</u></p> <ul style="list-style-type: none"> - Different ways people are divided in India - Origins and Explanation of the Caste System - Basic Caste Divisions - Socio-Economic Divisions <p><u>Main Content:</u></p> <p>As is true for any populous and diverse place, the various people of India are divided into a number of factions and groups that influence the way that they interact with each other. Social classes and caste make up a significant amount of social dynamics, political conversations, and the way that Indian society works as a hierarchy. However, these nuances may seem difficult to navigate as a foreigner with little experience, so the guide below summarizes the salient information.</p>	

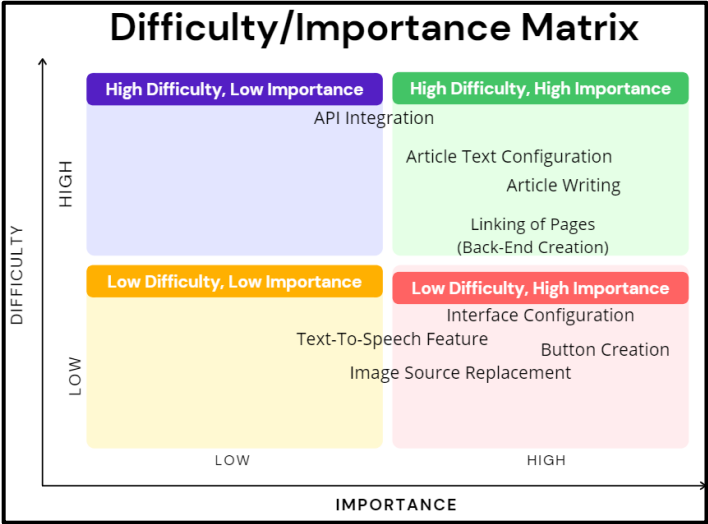
6	<p>Intended:</p> <ul style="list-style-type: none"> - Google Docs - Laptop - Internet Connection - Criterion A Research <p>Used:</p> <ul style="list-style-type: none"> - Google Docs/ - Laptop - Internet Connection - Criterion A Research 	<p>Intended:</p> <ol style="list-style-type: none"> 1. Refer to the research conducted in Criterion A, and create the outline of an article consisting of the salient points to include. 2. Conduct extra research in order to fill in any gaps 3. Write the article in its entirety. <p>Completed:</p> <p>All processes planned</p>	N/A	<p>Family Values in India:</p> <p>Outline:</p> <ul style="list-style-type: none"> - Roles and Respect in Family and Society - Charity, Friendliness, Helpful Attitude - Unity, Hospitality - Joint Family Systems <p>Content:</p> <p>1. Every family and social system in India follows a hierarchy. Everywhere you go, you will find that the elders in society are the most respected, and that they are given the first preference in most regards. For example, it is more respectful to take advice from an elder person, than it is to turn towards a younger one. Similarly, in public places, one should always stand back to give way to elders and women to get to the front.</p>
7	<p>Intended:</p> <ul style="list-style-type: none"> - Google Docs - Laptop - Internet Connection - Criterion A Research <p>Used:</p> <ul style="list-style-type: none"> - Google Docs - Laptop - Internet Connection - Criterion A Research 	<p>Intended:</p> <ol style="list-style-type: none"> 1. Refer to the research conducted in Criterion A, and create the outline of an article consisting of the salient points to include. 2. Conduct extra research in order to fill in any gaps 3. Write the article in its entirety. <p>Completed:</p> <p>All processes planned</p>	N/A	<p>Respectful Behavior</p> <p>Outline:</p> <ul style="list-style-type: none"> - Greetings and behavior as a guest - Eating - Social gatherings - Religion - Religious influence on interactions <p>Content:</p> <p>1. When entering some Indian households, you must remove your shoes at the door or at a designated place. Please remember to check with your host.</p>
8	<p>Intended:</p> <ul style="list-style-type: none"> - Thunkable software - Laptop - Internet Connection - Criterion B Layouts <p>Used:</p> <ul style="list-style-type: none"> - Thunkable software - Laptop - Internet Connection - Criterion B Layouts 	<p>Intended:</p> <ol style="list-style-type: none"> 1. Use the text element to add a heading to the page. Modify the text font, label, and colour as per the layout. 2. Copy the article text from the original document, and paste it on the article page. Make sure that the page is scrollable, and format the text to fit the page and in accordance with the colour and font aesthetic specifications. 3. Repeat these steps for every article written. <p>Completed:</p> <p>All processes planned</p>		

9	<p><u>Intended:</u></p> <ul style="list-style-type: none"> - Thunkable software - Laptop - Internet Connection - Criterion B Layouts <p><u>Used:</u></p> <ul style="list-style-type: none"> - Thunkable software - Laptop - Internet Connection - Criterion B Layouts 	<p><u>Intended:</u></p> <ol style="list-style-type: none"> 1. Create a new page. 2. Modify the colours, fonts, and buttons to resemble the home page for continuity. <p><u>Completed:</u></p> <p>All processes planned</p>		
10	<p><u>Intended:</u></p> <ul style="list-style-type: none"> - Thunkable software - Laptop - Internet Connection - Criterion B Layouts <p><u>Used:</u></p> <ul style="list-style-type: none"> - Thunkable software - Laptop - Internet Connection - Criterion B Layouts 	<p><u>Intended:</u></p> <ol style="list-style-type: none"> 1. Use the blocks section to create a back-end working procedure. 2. Modify the properties of each button and menu across all pages to link to the relevant page, as designed in Criterion B. <p><u>Completed:</u></p> <p>All processes planned</p>	N/A	
11	<p><u>Intended:</u></p> <p>The creation of this page was not intended; therefore, the resources were unplanned.</p> <p><u>Used:</u></p> <ul style="list-style-type: none"> - Thunkable software - Laptop - Internet Connection 	<p><u>Intended:</u></p> <p>The creation of this page was not intended; therefore, the procedure was unplanned.</p> <p><u>Completed:</u></p> <ol style="list-style-type: none"> 1. The UI of the application was created first, with a label heading, a text input field, a label for translated text, a button to trigger translation of text, and a button to listen to the translated text. 2. On the site RapidAPI, I modified a translator API's functionality in order to procure the required English to Hindi translations, and the relevant API Key. Using these details, I added a Web API connection on Thunkable. 3. I coded the blocks on Thunkable in accordance with the requirements of the API in order to make the translator functional and working 4. I then coded a text-to-speech block 	Not Planned	

that can read out the translation for users of the solution.

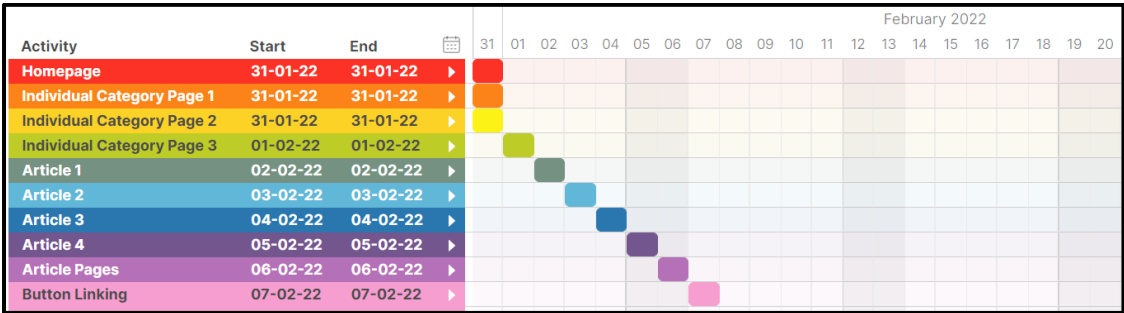


(full-size image of code available above in Strand C2)

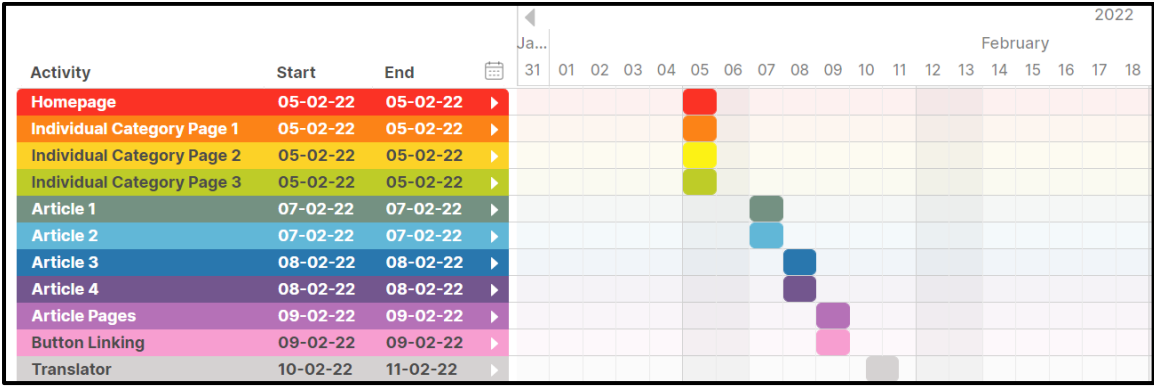


The alongside Difficulty/ Importance Matrix illustrates the complexity of the tasks required to create the product, compared to the value of the results they produced. This comparison shows that all of the processes carried out by the developer (me) were important and highly relevant to the outcome. The processes were a balanced split between low and high difficulty, so that the plan to create the product was both challenging as well as efficient, displaying a number of technical skills through the creation of the product.

Planned Timeline:




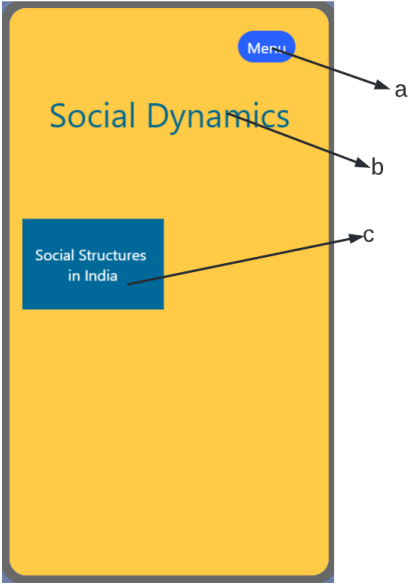

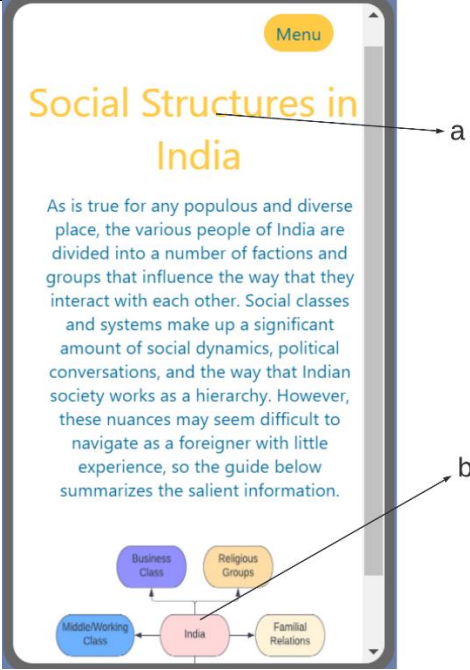
Followed Timeline:


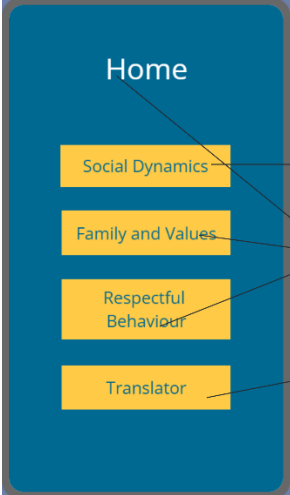
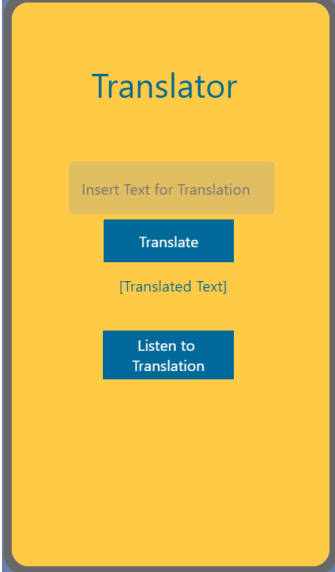


Strand 4: Fully justify changes made to the chosen design and plan when making the solution.

Changes Made to the Design/ Product:

Intended Design/ Product Part	Change(s) Made	Justification
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	 <p>a) Elliptical menu button, unlike the original 3 lines (hamburger style) menu design.</p> <p>b) Change in the title of the page from “Social Classes” to “Social Dynamics”</p> <p>c) Creation of only one article button instead of two, unlike the original plan.</p>	<p>a) The button shapes offered by the software Thunkable were quite limited. Buttons could either be elliptical or squarish. Since there was no option similar to the planned diagram, I used the default shape, and aligned it with the colour scheme of the product.</p> <p>b) Research led to the conclusion that talking about more metropolitan social structures and dynamics is more relevant to the target audience than historical social classes. The page title was updated to reflect this.</p> <p>c) Only one article button was created instead of the originally planned two, since the second planned article (How Social Hierarchy Affects Interactions) was not created. This is because while conducting extra research and summarizing information, the information meant for the second article was synthesised with the first one, allowing all of the information to be presented in one component, leaving the second article redundant.</p>
	 <p>a) Change in title of the article from “Social Classes in India” to “Social Structures in India”</p> <p>b) Change in positioning of the supplementary content image, such that it takes up space between paragraphs of space vertically, rather than being arranged horizontally in alignment with the text.</p>	<p>a)The title of the article was changed because the focus of the article shifted while remaining in the same domain of social structures. Research informed me that it would be more relevant to visitors to learn about current socio-economic trends in India, rather than about historic social divisions.</p> <p>b)Due to spacing and sizing constrictions, the image was illegible when placed horizontally next to the text. In order to combat this issue and allow users to easily view and understand the supporting images, the image was enlarged and made more visible. However, due to the limited formatting space available, the image had to be aligned vertically in order to make it fit.</p>

	 <p>a) The label “Social Classes” was changed to “Social Dynamics”</p> <p>b) The font that was to be used was “Microsoft Sans”, in accordance with the layouts created in Criterion B. However, the font “Open Sans” was used instead.</p> <p>c) A button was added for the “Translator Page”, which was unplanned originally.</p>	<p>a) The label was changed because the respective page name and content were changed.</p> <p>b) The software used (Thunkable) had limited font options, out of which the only Sans font was “Open Sans”. In order to align with the planned specifications and success criteria as much as possible, the Open Sans font was used.</p> <p>c) A translator button was added because a translator page was created, and thus needed to be linked to the navigation of the solution.</p>
<p>Translator Page - Not Planned</p>		<p>In an interview with the client, (Refer Appendix A-2.ii), he stated that language barriers have been a major problem throughout his stay in India, and that not knowing Hindi continues to put him at a disadvantage at times. However, due to the technical skills required, the integration of a translator API was categorized as an exciting feature that would only be added if time permitted. While creating the app, I extended the timeline slightly so that I could fulfil this need and create a solution with enhanced functionality and usefulness to the client and target audience.</p>

Changes Made to the Plan:

Product Component(s)	Intended Process/ Timeline	Change(s) Made	Justification
Homepage, Individual Category Pages (All Three)	The Homepage, Social Classes Category Page, and the Family and Values Category Page were to be made on the 31 st of January, 2022. The Respectful Behaviour Category Page was to be made on the 1 st of February, 2022.	The Homepage, Social Classes Category Page, Family and Values Category Page, and Respectful Behaviour Pages were all created on the 5 th of February, 2022.	Due to other IB documentation works with impending deadlines, inclusive of Personal Project and subject assignment commitments, the work was pushed by a few days. Afterwards, I spent a few days exploring the software and conducting extra research to improve the quality of the product before creation. Hence, the creation of these pages was delayed by 6 days.
Individual Category Pages (Family and Values Page, Respect Page)	The intended plan outlined that these pages were to be constructed from scratch, adding and modifying each	Instead of creating each page from scratch, the first category page created was duplicated using the pre-existing	Creating each page from scratch and configuring each element on each page, for three almost completely identical pages would have been a

	element repeatedly and individually.	Thunkable duplicate feature. The labels on the page and buttons were then modified in accordance with the layouts and purpose for each page.	tedious and time-taking process. I saved time and made my work more efficient by duplicating the pages and modifying only what was needed.
Article 1 (Social Dynamics in India)	This part of the application's content was planned to be created on the 2 nd of February, 2022. It was also meant to only list and define social classes in India.	The article was written on the 7 th of February, 2022. Along with the list and definitions of social structures in India, the breakdown of the effects of these classes were also explained.	Since the previous tasks were delayed, and there was a predefined chronology to follow, this task too was delayed. Additionally, while conducting extra research to enhance the quality of the product, the relevant information was synthesised such that the effects of social classism were necessitated in this article alongside the definitions of the classes. This also provided more information for users effectively in one article.
Article 2 (How Social Classes Affect Social Hierarchy)	This part of the application's content was planned to be created on the 3 rd of February, 2022. I was meant to analyse and explain the effects and nuances of social classes in India.	This content component of the application was not created.	Since the content planned for this article was synthesised with the content for the previous planned article, the need for this article was rendered redundant, and therefore this article wasn't written.
Articles 3 (Family and Values) and 4 (Respectful Behaviour)	These articles were scheduled to be worked upon and created on the 4 th and 5 th of February, 2022, respectively.	Both of these articles were created and written on the 8 th of February, 2022.	Since the previous tasks were delayed, and there was a predefined chronology to follow, these tasks too were delayed. Additionally, while conducting extra research to enhance the quality of the product, extra time was taken.
Creation of article pages and linking of buttons	These processes were scheduled to be carried out on the 6 th and 7 th of February, 2022, respectively.	These processes were both carried out on the 9 th of February, 2022.	Since the previous tasks were delayed, and there was a predefined chronology to follow, these tasks too were delayed.
Creation and Coding of Translator Page	These processes were not planned.	These processes were carried out on the 10 th of February, 2022	The addition of a translator component was an <i>exciting feature</i> that could enhance the user experience of the product, as explained by the client.

Criterion D

Strand 1: Design detailed and relevant testing methods, which generate data to measure the success of the solution.

<u>Testing Method</u>	<u>Process</u>	<u>Purpose</u>	<u>Specifications Tested</u>
Client Review (Qualitative , With purpose of Validation)	A questionnaire will be sent to the client. The questionnaire will contain a mixed set of questions, allowing the client to give his qualitative inputs on the aesthetics, cost, safety, and functionality of the application after using it.	The client review is conducted in order to evaluate the product, and determine whether or not it has met the needs, expectations, and requirements of the client.	Aesthetics Cost Safety Functionality
Focus Group Review (Qualitative , With purpose of Verification)	A survey will be sent out to a focus group. The survey will contain a mixed set of questions, allowing respondents to give their qualitative inputs on the cost, safety, and functionality of the application after using it.	The focus group review is conducted in order to determine whether or not the created product is suitable for other apart from the client, and if it meets the needs of a wider audience or clientele.	Cost Safety Functionality
Expert Appraisal (Qualitative , With purpose of	A user experience designer will be asked to review the product on the basis of the shapes, colours, and ratios applied to create the	Expert appraisals are conducted in order to gain the opinion of an experienced professional , who can provide feedback	Aesthetics Functionality Customer

Verification and Validation)	aesthetic of the interface; the ease of navigability and ergonomic strengths and limitations of the application; and on the possible impacts of this product on the target audience.	that opens avenues for the refinement of the product such that it matches the quality required in more competitive fields and markets.	
Performance Testing- Response Time (Quantitative , With purpose of Verification)	Each button in the application will be clicked. The time taken to go to the next page will be timed using a stopwatch, and will be recorded.	Response time is essential in determining the efficiency of the application, so that users have a smooth experience with the product. Recording and evaluating response time aids in the development of a seamless user interface.	Functionality
Focus Group Aesthetics Appraisal (Quantitative , With purpose of Verification)	A survey will be sent out to a focus group. This survey will contain multiple choice questions, from which respondents can select the answers matching their view of the product.	A quantitative aesthetics review will allow the evaluation of the product against previously created design specifications using specific, quantifiable metrics .	Aesthetics
Beta Testing for Navigability (Quantitative , With purpose of Validation)	Users will be given a task to perform within the application, and must record the time it took to complete the task. The task assigned to the volunteer group for this application is to: 1. Navigate from the homepage to the Social Hierarchy and Classes Article 2. Use the menu in order to switch from the article to the Respectful Behaviour category page.	Beta testing allows for the product to be used by end-users and a wider audience without guidance. Conducting such a test aids the developer in understanding the strengths and limitations of the functionality of the product , since the raw interactions that users have with the product are measured, and can further be analysed in order to draw relevant conclusions from the given data.	Functionality

Client Review:

Refer Appendix A-7 for the complete questionnaire transcript.

In his responses in the given questionnaire, the client affirmed that the colour scheme, comprising of blue, white, and gold, matched the one desired by him. He further confirmed that the shapes in the app were to his desires and liking, since he had requested sharp, defined edges and flat shapes in the product. The font, a sans serif font similar to Netflix Sans, the client's preferred font, was to his liking. He did not notice any costs incurred for the user, confirming that the product was free to use. He stated that he found the articles in the application very relevant and helpful, and that the graphics helped too. He affirmed that the pages in the application are ergonomically vertically scrollable, and that the app was quite straightforward, making it easily navigable. He felt that the menu option **aided in the navigability** of the product. This confirmed that the app was **functioning as intended**. He said that the solution absolutely would help other foreigners in situations similar to what his was when he had first moved to India, especially since the translator feature had been successfully implemented. In this way, he confirmed that the created functional product did indeed **offer a solution** to the original design problem. In terms of feedback and suggestions, he remarked that the app could have more categories and articles, since Indian culture is very diverse, and there are many things left for foreigners to know, which could help them further when they come to the country. These categories include dress codes and attire, and celebrations and festivals.

Focus Group Review:

Refer Appendix A-8 for the complete survey transcript and results.

In terms of cost, the focus group stated and confirmed that there were no costs incurred for the users of the solution. In terms of functionality, specifically the content of the app, the focus group respondents affirmed in their reviews that the articles in the product were highly relevant to the topics that needed to be covered (Indian social hierarchy and classes, family values, and respectful behaviour). The responses stated that the **articles covered all of the required information**, and one response stated that "They [the articles] induce very socially accepted and moral thoughts about the society". This response in particular attested to the fact that the specifications designed to cater to customers, keeping in mind ethnocentrism, in order to create an empathetic and effective rhetoric in the articles, had been met.

Coming to the **ergonomic functionality** and **user interface experience** of the application, respondents testified that the pages in the product were perfectly and easily scrollable, with ergonomic **comprehensibility**. Respondents vouched for the navigability of the app by calling it "very easy" to navigate. The responses to the survey also attested for the value of the menu feature in the **navigability and functional ergonomics** of the product. One respondent stated that the menu "provides an organized and simplified interface which is helpful for navigation through the app". Another respondent stated that without

the menu option, “it would be extremely tedious and go back to the home page and view different topics”. Other respondents reaffirmed the menu feature by saying that it made the app more fun to use and navigate, and that using the menu allowed users to directly see which topics and sub-headings they would be accessing, allowing them to reach **relevant information** faster.

Expert Appraisal:

Refer Appendix A- 11 for Verbatim Appraisal

Vishant Anand is a UX (User Experience) developer, and a professional in the field of digital product design. He is currently working at the Product and Design division at Amazon. I reached out to Mr. Anand in order to collect constructive, detailed, and relevant feedback on the functionality, impact, security, and scope of the created solution, in a context that only a professional can provide, given the years of experience, and understanding of the competitive market that he has.

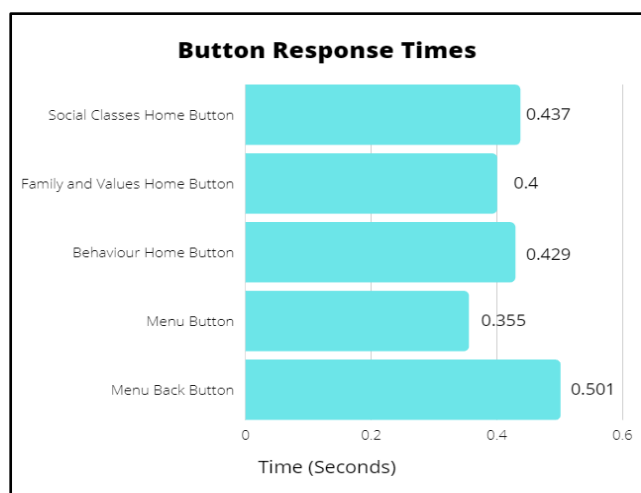
In terms of the strengths of the created product, Mr. Anand highlighted that the user’s problem had been **identified accurately** and successfully through **relevant research**. The research methodology allowed a holistic understanding of user behaviour, which can be seen reflected in the product, as the solution solves the product in a focused, direct way, making it a ‘**Minimum Viable Product**’, or MVP.

In terms of the limitations of the product, Mr. Anand identified that for the aesthetic and design of the user interface, rather than taking into account nuances of design and the building of an **ethos, branding**, and subtle message for the product and its purpose through design, the **client’s preferences** in these regards were the focal factor. This is a drawback because the client has **no design experience** and technical knowledge which add to the value of the intended seamless user experience in the product. Aspects like corner radius and font must be researched using **expert resources**, rather than taking face-value preferences.

Another limitation of the product was the **functional portrayal** of the menu feature. The menu button in the created solution, when clicked, leads to a page with a list of the same items as the homepage, but with the addition of a button leading back to the homepage as well. This causes **redundancy and overcomplication** in the product, since it adds to the creation of **multiple paths** for the same destination in the product, and the opportunity for the user to be stuck in a navigation loop.

A recommendation from Mr. Anand’s side, which can add to a more holistic approach towards the product, was conducting further research that looked at how **offline and physical solutions** to the design problem can be explored such that online, **virtual alternatives are created**. Additionally, Mr. Anand outlined further scope for improvements and future development of the product by suggesting that as a developer, I expand my **user cohorts** and identify a diverse range of audiences that have problems that can be addressed by the features and functionality of the product. Identifying and acting on multiple user personas will allow me to create multiple avenues for usage of the product. Mr. Anand also suggested that instead of completely removing **user data and its opportunities** from the app in order to prioritize privacy and safety, I should explore the avenues of **leveraging** collected user data in a secure, anonymized manner, in order to gather more information that contributes to a better understanding of the audience, and therefore an **enhanced user experience**.

Performance Testing Results:



The design specifications for functionality included a limitation on the response time for each button, stating that each button must have a response time of less than or equal to 1 second, in order to maintain a speedy navigability in the application. The results of the test **confirmed the efficiency** of the product, as the buttons had a response time ranging from 0.355 to 0.501 seconds, as demonstrated by the above graph.

Focus 1

The following table shows the percentage of survey respondents voting for each answer option for each question (There were 4 total respondents):

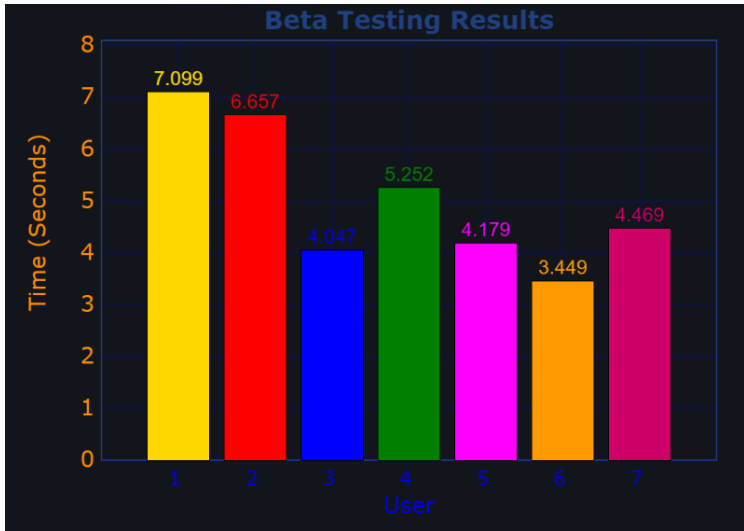
Question	Yes	No	Partially
Does the application have a colour scheme that is entirely blue, white, and gold?	100%	0%	0%

Is the font used a sans serif font?	100%	0%	0%
Is the font used “Helvetica” specifically?	25%	50%	25%
Are there any images places with the text?	75%	25%	0%
Are the edges of the shapes sharp, with no rounded corners?	0%	0%	100%
Are the designs flat and 2-dimensional?	75%	0%	25%

The results of this survey show that the aesthetic specifications of the product were all either **completely met**, or **partially met**, as is elaborated upon in Strand 2 of Criterion D.

Beta Testing for Functionality and Navigability:

Refer Appendix A- 10 for the Raw Data



A group of volunteer beta testers navigated the application and explored 5 different pages of the app, all under 10 seconds each. The short time taken to complete the tasks proves that the application is **simple to understand and easy to navigate**.

Strand 2: Critically evaluate the success of the solution against the design specifications.

Design Element	Specifications	Met/ Not Met/ Partially Met	Justification	Score from Success Criteria
Aesthetics	Colour Scheme- Blue (HEX-006992), White (HEX-F4F4F8), Gold (HEX-FFCB47)	Met	The colour scheme of the product met the specifications exactly, with no deviation from the planned layouts. <i>This was confirmed by the client (Refer Appendix A-7) as well as by the focus group aesthetic appraisal survey.</i>	4/5
	Sans Serif font family- Helvetica font to be used.	Partially Met	As a developer, I know that I used a Sans Serif font, but not Helvetica, since <i>Helvetica was not an available option on the development platform</i> . This is confirmed by the mixed results given by the focus group in the aesthetics appraisal.	
	Free to use images to be placed along with text	Partially Met	Not every article has an image placed with it, however, <i>33.3% of the articles in the product do have supporting graphics</i> . Hence, the specification is partially met.	
	Sharper, defined shapes	Partially Met	Every button except the menu button had sharp, defined corners. <i>This was confirmed by the focus group via the aesthetics appraisal survey.</i>	
	Flat designs	Met	<i>The client (Refer Appendix A-7), as well as 75% of the focus group appraisal survey respondents confirmed that the designs in the product were flat.</i>	
Cost	No cost to be incurred for the developer	Met	As the developer, I can confirm that no money was spent during the creation of the solution.	5/5
	No cost to be incurred for users of the solution	Met	<i>The client (Refer Appendix A-7) as well as the focus group (Refer Appendix A-8) qualitatively reviewing the</i>	

			<i>product confirmed</i> that no costs were incurred by users of the application.	
Size	The solution will not exceed a size of 55 megabytes.	Met	The platform on which the app was created and is hosted (Thunkable) displays the size of the product as 0.01mb, which is less than 55 mb.	5/5
Safety	The solution will not require the collection of any data from the audience	Met	The solution does not have any account creation features, and does not facilitate the collection of cookies, saving of preferences, targeted advertisements, or any other features that require data to be collected from the users of the app.	5/5
Functionality	There will be articles on Indian culture in the application for users to read.	Met	The created solution features three articles on Indian cultures for users to read. Their presence has been confirmed by <i>focus group (Refer Appendix A-8) and client (Refer Appendix A-7) reviews</i> .	5/5
	The articles will be categorized on the basis of which aspect of Indian culture they address.	Met	There are separate article category pages created that each have an article in the final solution. The presence of these is confirmed through the <i>focus group (Refer Appendix A-8) and client (Refer Appendix A-7) reviews</i> .	
	The aspects being addressed in the sample articles will be Social Hierarchy and Classes, Family Values, and Respectful Behaviour.	Met	<i>The focus group (Refer Appendix A-8) qualitative reviews of the product, as well as the client review (Refer Appendix A-7) confirmed that the articles in the product were relevant and pertaining to the specified categories (Social Hierarchy and Classes, Family Values, and Respectful Behaviour)</i>	
	There will be a menu designed to navigate the different sections and articles in the app.	Met	<i>The qualitative reviews provided by the focus group survey (Refer Appendix A-8), and the client's final review (Refer Appendix A-7) of the product confirmed that a menu was present in the app, which aided in the navigation of the product.</i>	
	There will be a 'home' screen containing buttons that lead directly to the different article sections.	Met	This page is present in the application. It is clearly labelled on the development site, and is the first page that loads on the application.	
	The articles will be vertically scrollable.	Met	As confirmed by the <i>qualitative focus group reviews (Refer Appendix A-8) and by the client review (Refer Appendix A-7)</i> , the article pages are ergonomically scrollable.	
	The response time of each button should be less than a second	Met	<i>The functionality testing conducted in order to measure the response time of each button confirms that each button has a response time less than 1 second, since the timings range from 0.355 seconds to 0.501 seconds.</i>	
Materials	The software "Thunkable" will be used to create the application.	Met	As shown in <i>Criterion C, Strands 2 and 3</i> , the software "Thunkable" was used to create all the pages of the application, the user experience, and the back-end code.	5/5

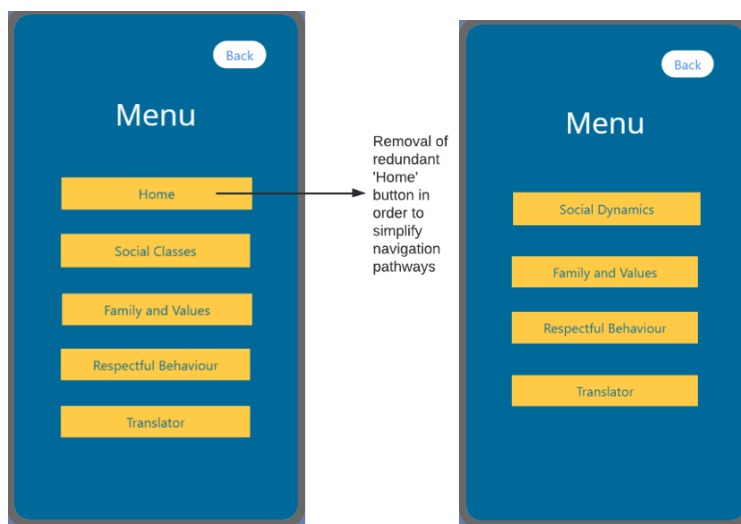
Strand 3: Explain how the solution could be improved.

Specifications Met	Specifications Not Met	Specifications Partially Met
14	0	3

Strengths	Limitations	Improvements
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<p><u>Aesthetics:</u> The colour scheme matches the requirements of the client exactly. The font is a sans serif font, which has been researched and proven to be effective in knowledge retention and learning.</p> <p><u>Cost:</u> The application is completely free to use for any user, making it easily accessible to a wide range of audiences from varying economic backgrounds, who may require its services. This makes the app sensitive towards the diverse needs present in a large cultural bracket.</p> <p><u>Size:</u> The application has a size of 0.01 megabytes. This is a small application size, which means that the product does not take up much space on the devices of users, allowing a comfortable experience that does not compromise the functionality of a user's phone.</p> <p><u>Safety:</u> The application is safe to use for any possible user of the app, regardless of sex, age, nationality, or location, as it does not require any personal details in order for it to be operational.</p> <p><u>Functionality:</u> The created solution contains comprehensive articles that elaborate upon Social Hierarchy and Classes in India, Family and Values in India, and Respectful Behaviour in India. These articles are categorized and organized in individual article category pages for comprehensibility. There is a menu option on each page that allows for convenient and easy navigation within the application. The article pages are all ergonomically vertically scrollable, allowing for larger amounts of information to fit in one page without compromising on legibility. The response time of each button in the application is less than 0.502 seconds, making it a fast and responsive app that runs smoothly.</p> <p><u>Functionality:</u> The translator feature was an exciting feature implemented to enhance the functionality of the application, which further aids users in navigating language barriers, and increases the functional benefits of the product.</p>	<p><u>Aesthetics:</u> The selected shapes, fonts, and the overall designed branding of the application don't have a strong basis, reasoning, or justification. They have been implemented without much reason and may fail to create the required impact on the users.</p> <p><u>Safety:</u> The lack of user data collection features creates a roadblock for the developer, as recorded user interactions and preferences cannot be used to further enhance and improve the product. The current implementation of safety limits the scope of the product.</p> <p><u>Functionality:</u> After the creation of the product, the client, in his review of the product, stated that more categories of information and articles could be added to the product. This implies that the product is not as cohesive and elaborate as required.</p> <p><u>Functionality:</u> The 'home' button on the menu is redundant, and complicates the user's navigation journey in the product by creating multiple pathways leading to the same destination, made even less efficient since there is a possibility of creating a useless navigation loop.</p>	<p><u>Aesthetics:</u> To improve the branding of the product and create a directed ecosystem, shapes and fonts must be greater researched using expert resources. The results of this research should lead to conclusive finalised geometric appearances and font selection for the product, which must then be implemented across the solution.</p> <p><u>Safety:</u> Sign-Up and Login features can be implemented so that users can track their navigation and progress through the application. User data can then be securely collected and anonymized, which can be used to draw conclusions regarding the efficacy and further scope of the solution.</p> <p><u>Functionality:</u> In order to fulfil the client's requirements further, more article categories on topics such as festivals, celebrations, and dress code and attire could be created. This would entail the creation of new category buttons on the homepage and in the menu, and new article category pages. New, separate articles will also have to be written, and new article pages will be created for this.</p> <p><u>Functionality:</u> The 'home' button can be removed from the menu of the solution so that navigation pathways in the product are simplified, creating a more seamless user experience with the product.</p> <p><u>Functionality:</u> To increase the reach and relevance of the solution, the product can implement new features, such as learning traditional Indian recipes, which build up on the services already provided by the application, while simultaneously catering to a new market. This will also allow the product to move from being an MVP to a larger, scaled- up application.</p>
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Change Made to User Interface:



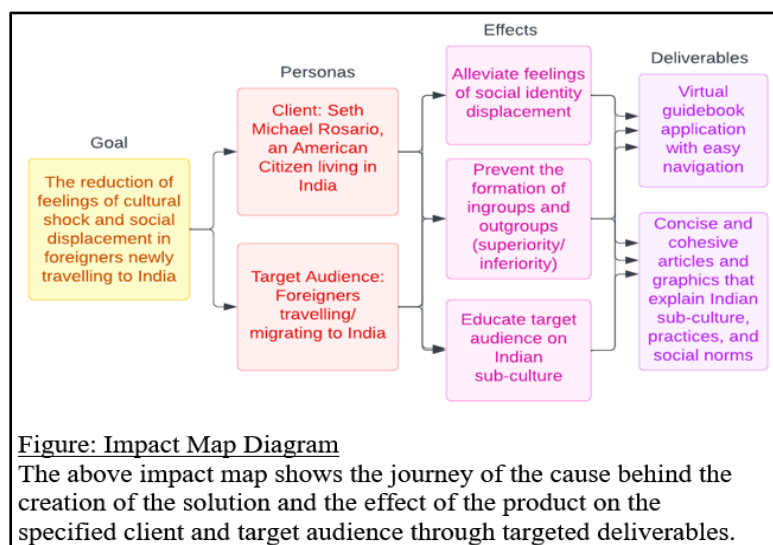
The change that has been made to the interface on the Menu page is the removal of the 'Home' button. This change is in accordance with the expert's recommendation of removing the home button from the menu page in order to reduce the number of navigation pathways to a single destination, thereby simplifying the navigation process and the ergonomic functionality of the application for the end-user.

Strand 4: Explain the impact of the solution on the client/ target audience.

The client, Seth Michael Rosario, is an American citizen who has been living in India for over 20 years (*Refer Appendix A-1*). The problem that was addressed by the creation of the solution is the **cultural shock** that comes from not having an established **social identity**, and from not fitting into one's surroundings. Social identity is a person's sense of who they are based on how they interact within and with groups of other people. This was primarily due to the factors which affected **Indian lifestyle**, such as familial arrangements, religion, greetings and customs, food, and language (*Refer Appendix A-4*). Seth faced challenges at various stages in his life. Lack of awareness and **social amalgamation** was the primary issue and driving factor behind the continued sense of cultural shock, as it made him feel left out. In order to prevent other similar users from experiencing the same problems in the future, the proposed and subsequently created solution was a **virtual guidebook application**, which contained various informative articles spanning categories that covered Indian sub-culture, social norms, and practices.

Functional Impact:

The intended function of the application was to **provide information** in an **understandable, comprehensive manner** which allowed seamless navigation. The product achieved this through the creation of article category pages, each with their own articles on different aspects of Indian sub-culture and social practices. The articles were on the topics of social hierarchy and classes in India, family and values in India, and on respectful behaviour in India. They also had **supporting graphics**, which allowed the client and wider audience to understand the concepts in a way that helped them the most (*Refer Appendix A-7, A-8*). Each button in the application also had a response time of less than a second, which made the app **fast and efficient to use**. The integration of a translator API, with text-to-speech functionality addressed the client's issue of facing a language barrier in conversations, adding to the product's functionality, and serving the purpose of keeping the client from feeling socially displaced.



Ergonomic Impact:

The created solution **utilized a menu** in its functionality, which allowed the client and wider audience to **easily navigate to pages** (*Refer Appendix A-7, A-8*) within the application. The simple hyperlinks and menu made the app straightforward and understandable. Making use of a menu allowed users to directly access desired pages, instead of going through the tedious process of returning to the home screen and selecting a new page. However, the 'home' button on the menu page added a sense of redundancy that took away from the user experience (*Refer Appendix A-11*). The article pages were vertically scrollable and simple to understand, allowing more information to be imparted without compromising on **legibility**.

Aesthetic Impact:

The aesthetics of the user interface of the solution impacted the client by providing a **comfortable, desired experience**, since

the design of the final solution completely matched the layouts, colour scheme, and font family requested by the client (*Refer Appendix A-7*), and almost completely matched the shapes requested by the client. Moreover, the aesthetics of the final solution had a **largely positive psychological impact** on the client and the wider audience, given the colour scheme and font used. However, since the font and shape types used in the product were only the client's preferences without any experience or knowledge, they failed to create a **sense of branding** and a rationalized ecosystem for the product's operations (*Refer Appendix A-11*).

The colours used in the interface of the product were blue, yellow/gold, and white. Blue is a colour that evokes feelings of calmness, security, and trust. In an application directed towards users at risk of developing an inferiority or superiority complex as part of their social identity, this aided in the subliminal reduction of these feelings. Yellow is a colour that evokes feelings of happiness and hope. In social situations where one may feel forlorn and lost, an app with yellow in the interface can serve in improving the situation of the user. Finally, the colour white indicates innocence and simplicity, allowing the application to feel easy to use and understand, and **reducing any subconscious feelings of negative complexity**. (*Refer Appendix B- 22*)

The font used in the final solution is "Open Sans", a sans serif font. As researched, fonts belonging to the sans serif font family typically **enhance legibility**, and are best for reading off of a screen. They stimulate positive mental responses to provided knowledge, making them a suitable font type to write articles in, such that it impacts the users of an application and increases the **efficacy of the product**. (*Refer Appendix B-16*)

Safety/Privacy Impact:

The created solution allows its users to protect their privacy by not submitting any **personal information**, both wittingly or unwittingly. The created product takes safety into consideration by not allowing any targeted or sponsored advertisements to be displayed. This ensures that no cookies or browsing data are collected from the user, ensuring **optimum privacy of data**. The app can also be used without the creation of any account on the user's end. The product efficiently stores multiple articles, without requiring cloud-based storage (which would require account creation), all while having a size of 0.01 megabytes. However, in the future, the product must open scope for the addition of such features, since **data collection** can allow developers to understand the areas of the product that must be explored and improved upon (*Refer Appendix A-11*).

Impact with relation to the Global Context:

The global context for this unit was "Personal and Cultural Expression". The unit title was 'Identity through Culture'. This unit aimed to explore how culture can be embraced, personal identity can be expressed, and international mindedness can be promoted simultaneously. The created product **promoted international mindedness** while **embracing Indian culture** by providing a solution to an international target audience that educated them on the nuances of Indian culture, without promoting any disparities or biases.

Overall Impact:

Overall, the product had a **positive impact** on the end user (client and target audience) by providing a **relevant, required solution** to the problem of cultural shock and subsequent displaced cultural identity. Thoughtfully expressed articles that took into consideration the phenomena of xenocentrism and ethnocentrism portrayed Indian culture such that visiting foreigners could easily understand it, and adapt behaviours necessary to fit in, without compromising on their sense of self.

Below is a customer journey map, summarizing the impact of the solution on users across the fields of culture and knowledge, aesthetics, ergonomic functionality, and safety:

