Mobile User Experience
6MMCS001W

Coursework 1 Report - Mobile App Design

Group No: 2
Student 1: Marlon Nieveras Quizon w1731988
Student 2: Gervais Boadi Appiah w1735205
Student 3: David Sarkodie w1751526
Student 4: Arpita Kumar w1754090

If specific team members did not contribute to the group submission, indicate those students' names in order to assess their submission files separately.

- Provide link to the **styleguide** in case you created an online tool to create make sure that you provide access to all users with the link) + download and submit a pdf version of the styleguide.
https://company-226195.frontify.com/d/sm1vhKwxtc6b

- Provide link/s to **prototype** (make sure that you provide access to all users with the link) + download and submit a pdf version of the prototype:
https://miro.com/app/board/o9J_loQUUbw=/?invite_link_id=164729859798

- Provide link/s to YouTube **video demo**:
https://youtu.be/81Ws4CtKkq4

Content

Content 2
1.1 Mobile Information architecture & Navigation 5
a. Design 5
1.2 Emotional design 7
1.3 Use of colour 9
Design 9
1.3 Typography / consistency 11
Design 11
1.4 Photography / consistency 13
Design 13
1.5 Gestalt principles grouping 15
Design 15
1.6 System response & feedback 17
1.7 Gamification 18
1.8 Directing the user to content and use of emphasis 19
1.6 iPhone vs iPad 20
Design 20
References 21

Discussion of UI and application of mobile UX principles

Concept - Our project concept is to develop a train treasure mobile application that links London to various locations in England. The train network goes through numerous tourist places.

The aim of our application is to allow the users to explore and book train tickets to these tourist locations so they can explore these beautiful places. The application allows the users to learn and explore about these spots, they can also perform certain functions such as, rating the location, adding them to their favourite list, posting comments and opening the location on map.

The application also has a game feature, which allows the users to get discounts on booking. The user gets points during booking, which is then stored in their account and can be claimed in their next booking hence, making the app interesting and increasing engagement for the users too.

Our proposed design has all the necessary pages and features which are needed to develop an app based on our concept. We have a welcome page, which is the first page that the user sees after opening the application. The app has a login or register feature, which allows the user to create a new account or login to their existing account. The user can also opt for the reset password option if they do not remember their login details. The user then has access to points of interest page which has all the location content. They can explore, share, add location to their favourite list, add comments, rate, or even open that location on google maps. The user can then book tickets by entering specific details, such as ticket type, booking date, number of passengers, etc. and can choose a payment method. At the end of the booking, some points are added to their account which they can further use as a discount.

Content prioritization - We kept the interface elements to a minimum. Simple designs are what keeps the user engaged and at ease with the content. So, only essential content and functionalities are displayed. Our menu list has progressive disclosure and simple terminology to not confuse the users.

Intuitive navigation - Our app's navigation allows the users to intuitively navigate through the app via clear pathways and complete all primary tasks without requiring any explanations.

Touchscreen target sizes - We made interface elements big enough to capture touch screen actions with enough screen space. If action buttons are too close it results in the user making undesired actions.

Hand Position Controls - Most people use their right hand and thumb to access mobile applications. We placed common features in easily accessible regions, while actions such as delete buttons are placed in areas harder to reach to avoid errors.

Highlight the differentiations between the iPhone and the iPad versions in terms of design and implementation.

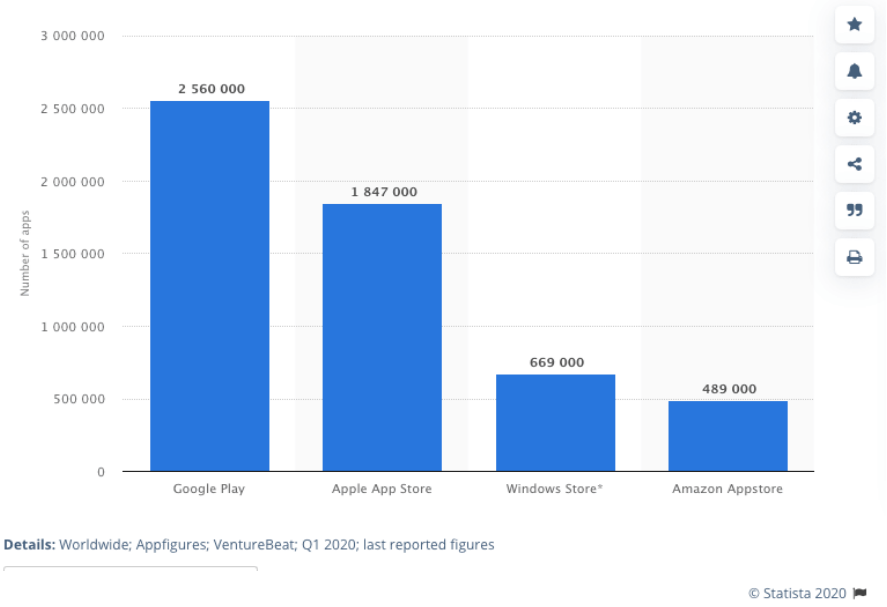
Design Element	**iPhone**	**iPad**
Main app navigation	Bottom nav	Tabs at the top of the screen
Content	Limited content	More content with extra images
POI list	Drop-down list	Thumbnail image slideshow with the list at the bottom
Button size	Small	Large
Comments	Separate page for POI comments	Displayed along with POI image on the same page
Logo	Top middle	Top left

1.1 Mobile Information architecture & Navigation

a. Design

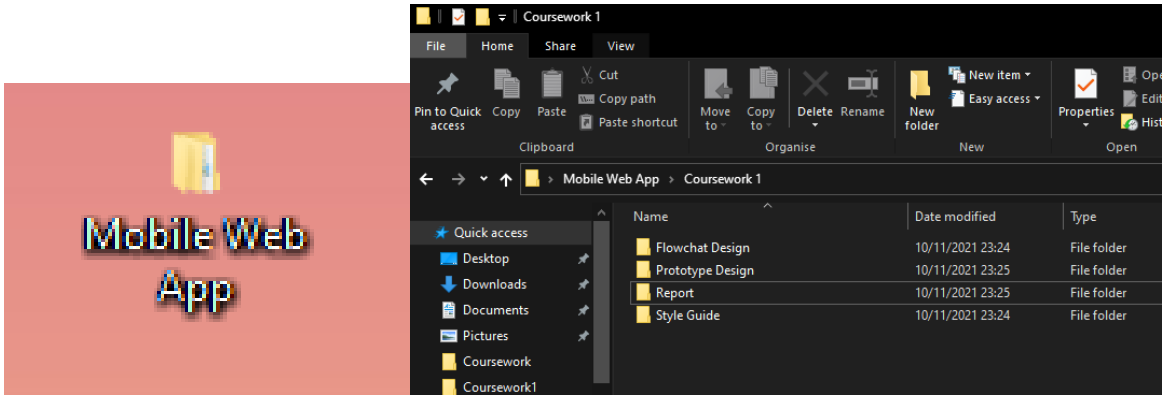
According to Statista, Android users have a choice of 2.56 million apps as of the first quarter of 2021, earning Google Play the app store with the most offered apps. Apple's Software Store is alternatively the next largest app store, with almost 1.85 million iOS apps offered.

Applications earn income in a variety of methods, including charging users a modest fee to use an app (an average of 1.02 US dollars per app in the Apple Store), paying for access to premium services of an already free app, or just selling ad space. (Statista, 2018)



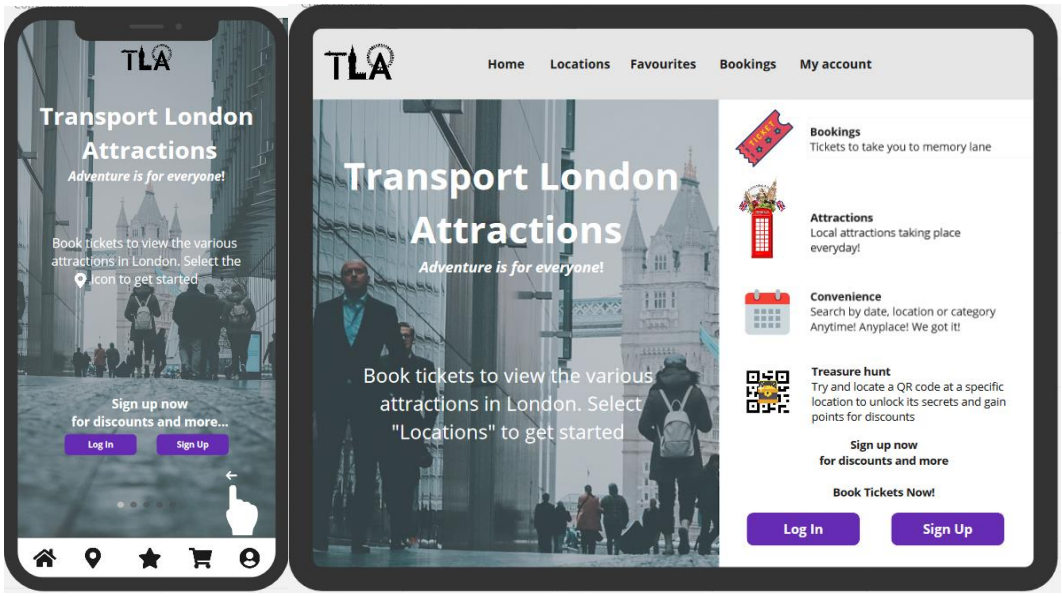
This shows that our mobile application architecture is an important area of this development. As most users prefer mobile applications rather than a windows application as mobile devices are smaller and easier to access.

We have organised folders that contain all of the web applications contents. The contents in the folder varies; images, flowchart design, prototype design report and style guide. Labelling the folders will allow us as designers to keep track of what has been saved and used. This will also allow us to communicate with the developer better as we will be able to give them the files, we have used to utilise them in the style sheet.



The navigation bar is easily accessible and clearly visible to the human eye as we have strategically placed it in either the top or bottom of each device. The iPhone's navigation bar is located at the bottom of the screen to allow the user to navigate through the application efficiently by just the use of their thumbs. The user interface uses distinguished colours to make a selection of the user very obvious as the selection colour becomes more concentrated to allow the user to understand what they have selected.

The navigation bar on the iPad is placed at the top of the screen similar to how it would be displayed on a desktop website but tailored to the iPad user. The navigation bar is easily accessible on the user interface as it clearly displays the buttons in a much bigger and larger form than the iPhone version.



1.2 Emotional design

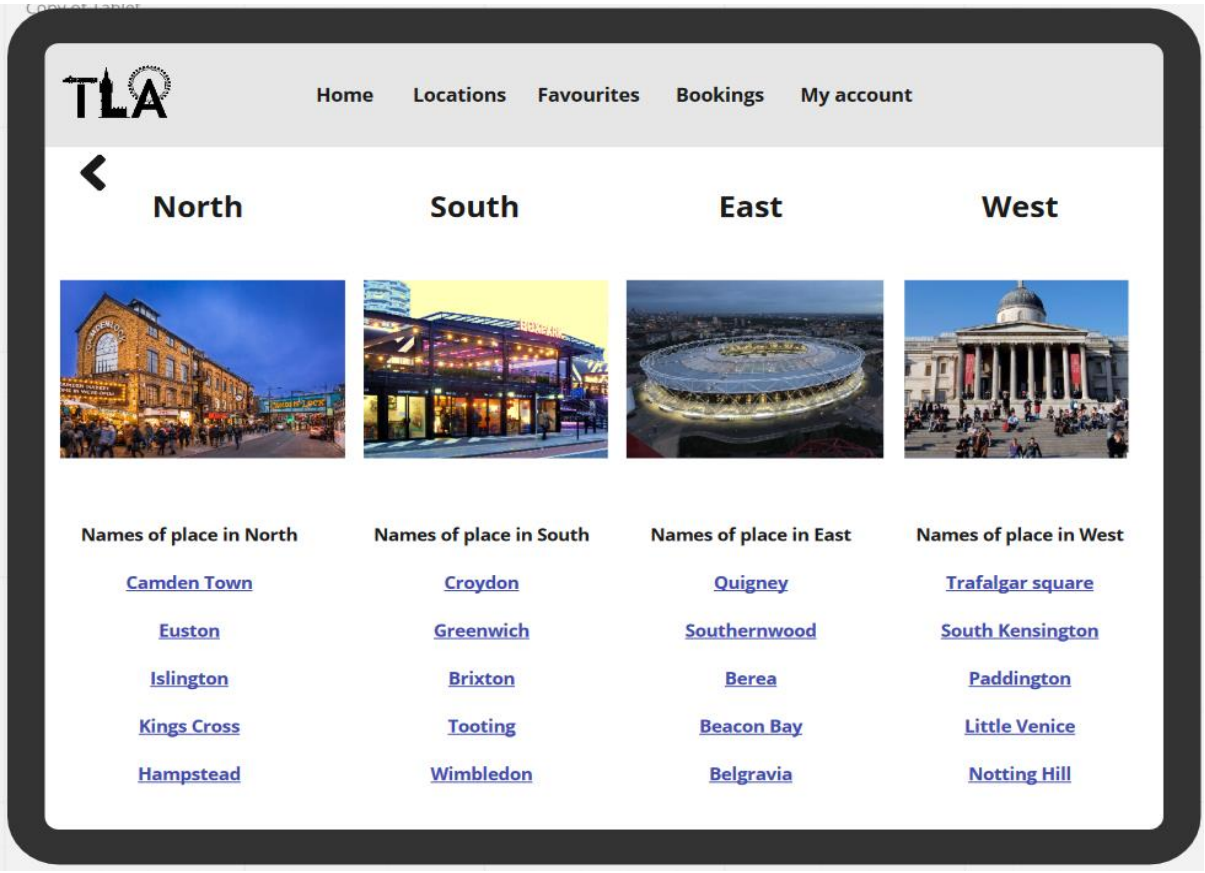
The emotional design thought process has been made to allow the user to feel excited about booking a ticket on the application. The application has a simplistic yet effective design allowing people of many different ages to use this application. The application provides a family friendly experience when venturing on the user interface.

The colours used such as purple provide a neutral unisex based colour as it is not tailored to any gender or age. We also used additional types of purples to allow a smoother transition and emphasis on the application to demonstrate the importance of specific buttons hence why we also changed the shades on the buttons. As we have chosen to exaggerate the buttons this may allow the user to feel more comfortable and relaxed to complete some forms on the application as they will understand that to purchase items the user is required to enter information and select pay now. This is easily visible to the user and persuades them to purchase the ticket even quicker.

The typography allows for the contents of the application to be readable and understandable. For example, in the logo, we made it similar to the Roboto font as it displays a simplistic font even if it is a little be altered it still maintains the appearance where everyone can understand. Serif fonts were also chosen since they are good for creating a brand that seems professional. Serif fonts convey sentiments of confidence and respectability due to their classical character, making them ideal for brand identities that focus on authority and grandeur.

The imagery design such as the images used in our application allows the user to understand what the company represents and in this case, it is a Transport London attraction. We have an image of people walking through the city in different locations where the attractions can occur or where other people may want to visit. From the images in the application, you can

also see what type of atmosphere the locations give off to the users promoting excitement and happiness.



We used the standard language English as the business model is based in London, England where the main language in England is English. The English language we used should be understandable from ages 7 and upwards as we wanted to maintain the fun and excitement the application gives off to the user.

1.3 Use of colour

Design

The color theme we used is named as October skies color combination. It mainly consists of shades of purple, white and black, which gives the app a monochromatic look and enhances the theme of our app.

The reason for using purple color for our app is that it is one of the most popular and trendy colors for app designs and according to the Pantone Color Institute, Purple was announced as the color of the year in 2014. Also, psychologists claim that it is associated with royalty, spirituality and luxury. The reason for using black and white for our app is that white provides the best base and canvas for an app and with black on top, gives a nice contrast and calming effect.

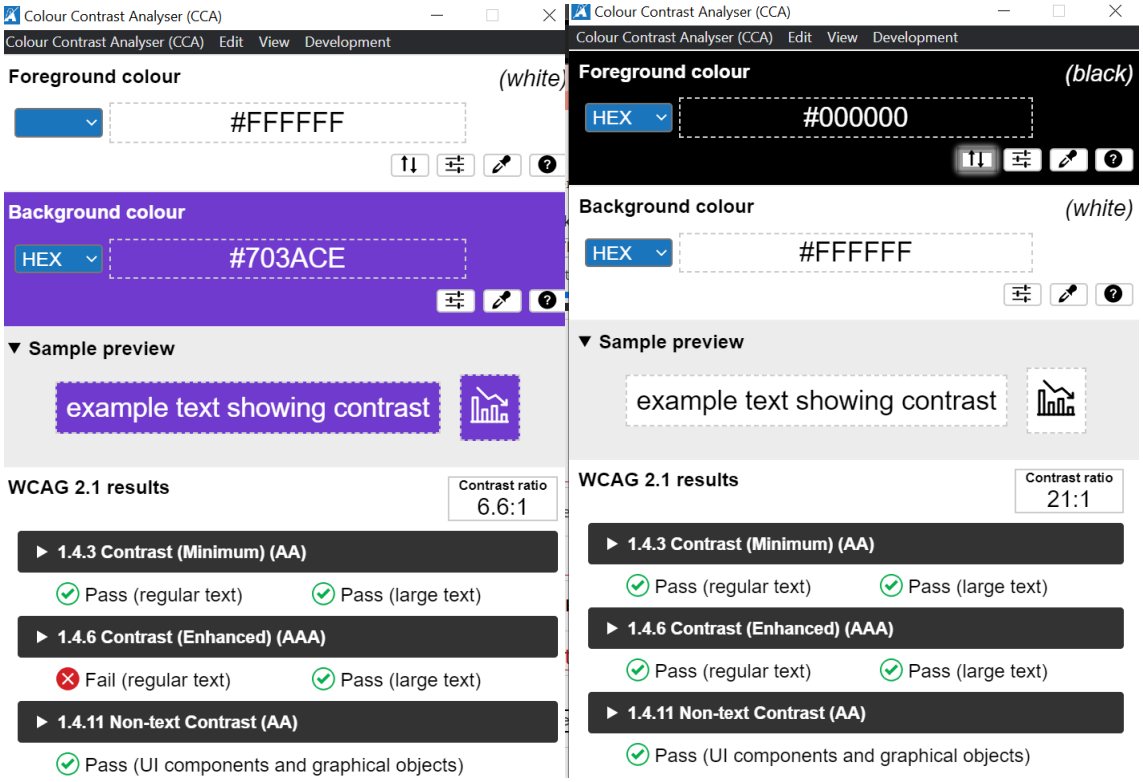
For iPhone version,

Color	**Use**
White #FFFFFF	Page background, text on buttons and images, background for dialogue boxes
Purple Heart #703ACF	Buttons
Black #000000	Logo, text, navigation bar icons

For iPad version,

Color	**Use**
White #FFFFFF	Page background, text on buttons and images, background for dialogue boxes
Purple Heart #703ACF	Buttons
Black #000000	Logo, text, navigation bar text
Gray #F0F0F0	Header, navigation bar, footer

We used a tool called Colour Contrast Analyser to test the color contrast for the app and the result is below:



Black text on a white background provides maximal value contrast and, therefore optimal readability for body text.

We maintained colour consistency by stating the purpose of each colour and what colour specify types of elements, and the meaning associated with specific colours. So that when the user interprets the meanings of colours, they will apply those meanings wherever they encounter the colours. These colours also enhance the aesthetic appeal of the app, where the colour is not visually distracting, does not impair usability and enhances users ability to complete their tasks successfully.

1.3 Typography / consistency

Design

In our treasure hunt mobile application, we used only 3 types of fonts, which are Bebas Neue, Roboto and open-sans and all these three fonts all come under the same font family called sans-serif.

There are many advantages when using fonts from the sans-serif family, for example, it is easy for users to read on all devices as they use fewer swirls and loops of serifs fonts, which makes it look simpler and more elegant. Furthermore, the font is good for headers and titles as well as body text and it won't matter what size it would be as it would still be clear.

In order for us to ensure content relevance and consistency is that we applied the font Bebas Neue for all headers as it is suitable for headers, and it makes each page with a header strong and inviting. Roboto is also used for all subheading because it improves the experience of the user/reader as the letters take up a lot of space. Furthermore, Open Sans is consistently used for all body text used on the treasure hunt app. This is because it's easy on the eyes for the user using our app, it can be beneficial for regular consumption and this particular font is best used for any mobile apps and websites due to its legibility and prolonged usage.

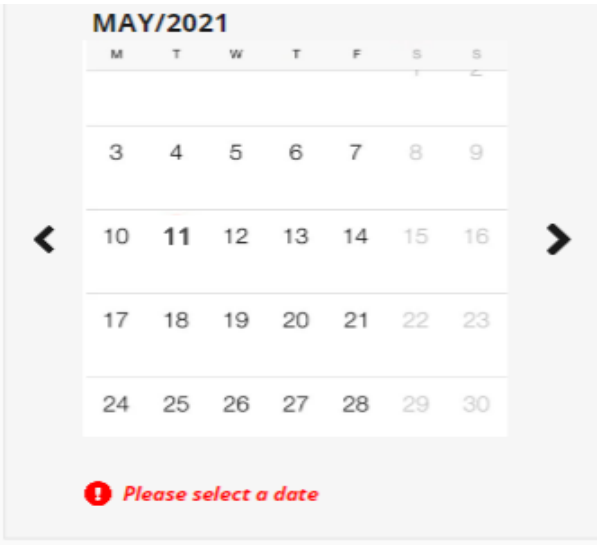
The font sizes that we will be using is:

Bebas Neue: 25 pixels (Header and its bold)

Roboto Neue: 20 pixels (Subheading and its bold)

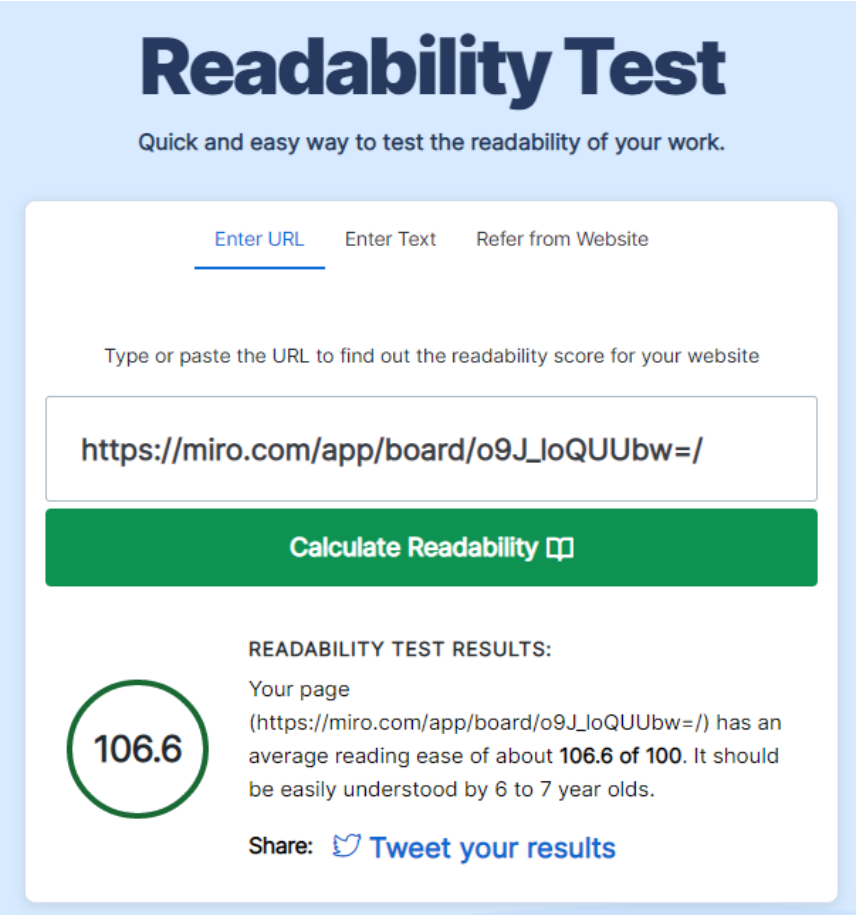
Open-Sans: 12 pixels (Body text not bold)

A font style that we used would be italics to show emphasis and contrast and an example of this being used is displaying an error message if the user hasn't picked a date or filled out any required information. This is an example below:



All fonts that will be used will be in black to keep the consistency throughout the whole mobile web application but if the background is purple or dark, we will apply the colour white to show contrast between them. The reason why we are using all black is because it will help people with any visual impairment (but not blind) to read the text better. Moreover, the black text will always have a pure white background to show high contrast between the colours for accessibility.

A tool we used called webfx is used to check the legibility of our treasure hunt app so what we did is that we copied our miro design link which is our prototype and checked the readability and the results came out as this below:

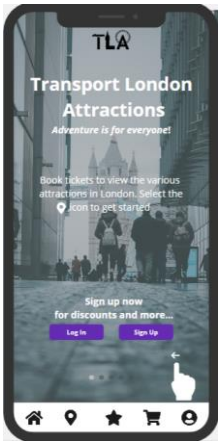


1.4 Photography / consistency

Design

IPhone

Homescreen

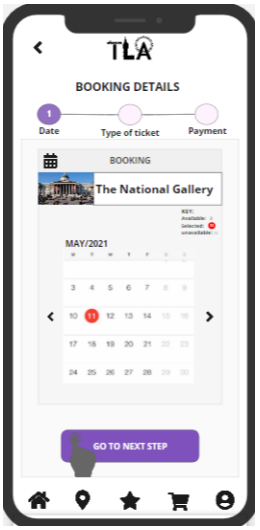


Within the home screen, the carousel contains images that have been used to depict different tourist attractions within London that the user can view and visit. These images are displayed in a full screen format with text displayed on top of it that is describing different features of the application. The pictures used are also designed in a way that the text is visible on top of the image, and this is important because as we want to convey what the application is but also talk about what features come with it. Therefore, for this the image has a grey undertone applied to it which allows the user to see both the image but the text at the same time. Furthermore, each feature comes with an image to enable the user to visually understand the content better.

Point of interest

Within the point of interest pages that the user navigates to when they want to see an attraction, we have an image displayed to represent the point of interest the user is viewing. This image is important as it allows the user to visually see what they may want to go and visit. The size of the image is 590 by 350 and is a perfect size to allow users to visualise the attraction but also view information about it.

Bookings

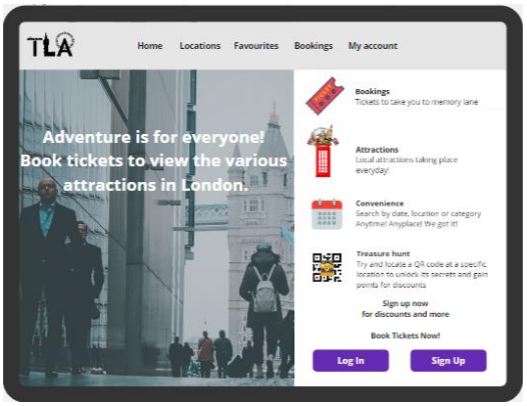


Within the booking page, the image used is a small size thumbnail image of the point of interest the user wants to book for. This is accompanied by the name of the point of interest. On this screen the user is making a booking so the main goal of the task the user is set to do is by a train ticket therefore the size of the image is not an important aspect of the page. Although if the user wants to know what they are about to purchase then a thumbnail image can be seen of the attraction which is clear enough for the user to tell what attraction they are purchasing.

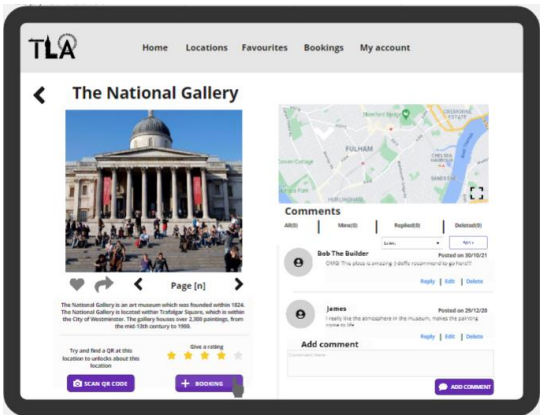
IPad

Homescreen

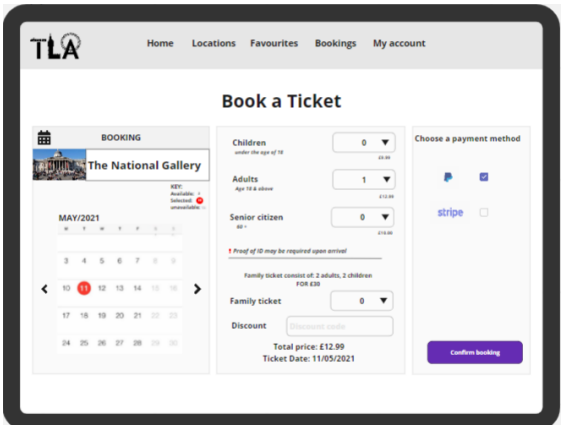
On the other hand, the iPad has a much larger screen so the image used can be displayed larger which is a benefit to using a larger screen as compared to the iPad. The size of this image is an x by x and takes just over a half of screen space. This image is the largest image used in the iPad version of the application. Furthermore, this image has been designed with a grey overlay that enables users to visually see text placed on top of the image used.



Point of interest



The point of interest page contains an image of the main attraction which enables the user to gain a visual look as to what the attraction displayed looks like. The shape of the image is presented as a square and has the dimensions of 350 by 350.

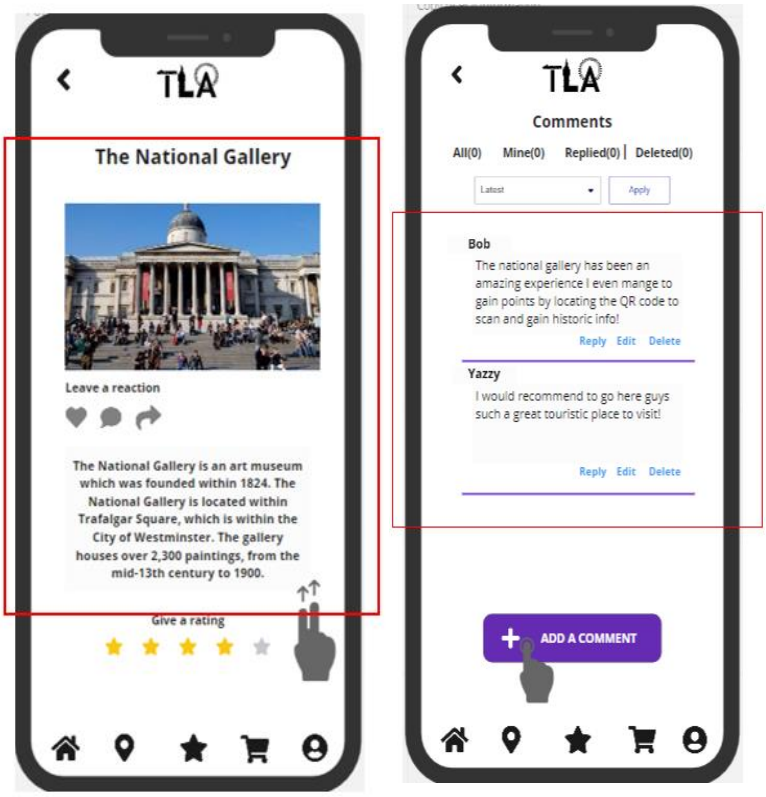


Bookings

Within the bookings page, the thumbnail image is used to show the attraction the user has added to their booking cart. This image is the smallest image used and has the dimensions of x by x.

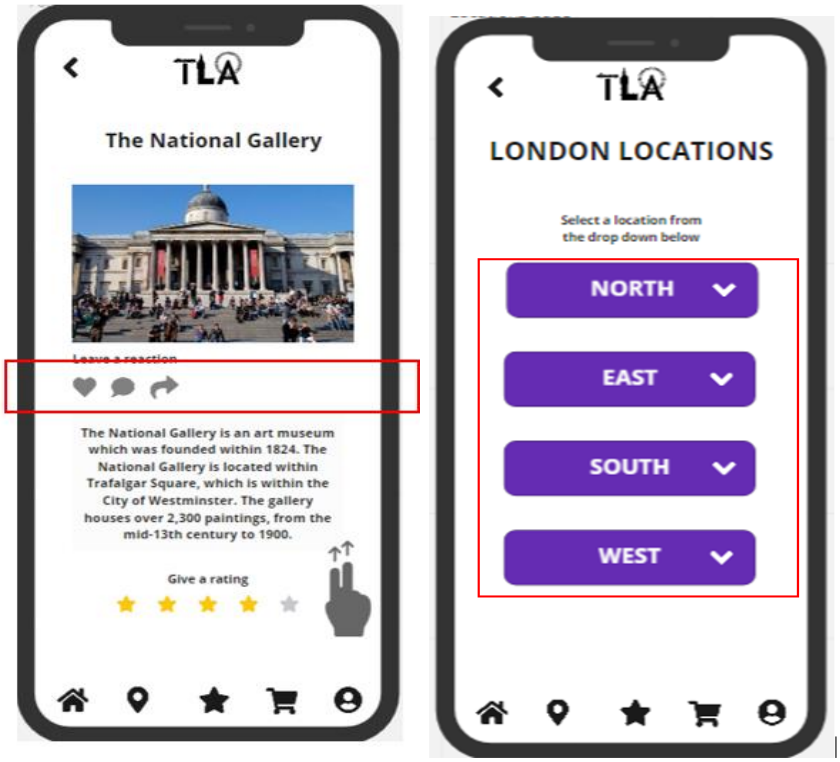
1.5 Gestalt principles grouping

Design



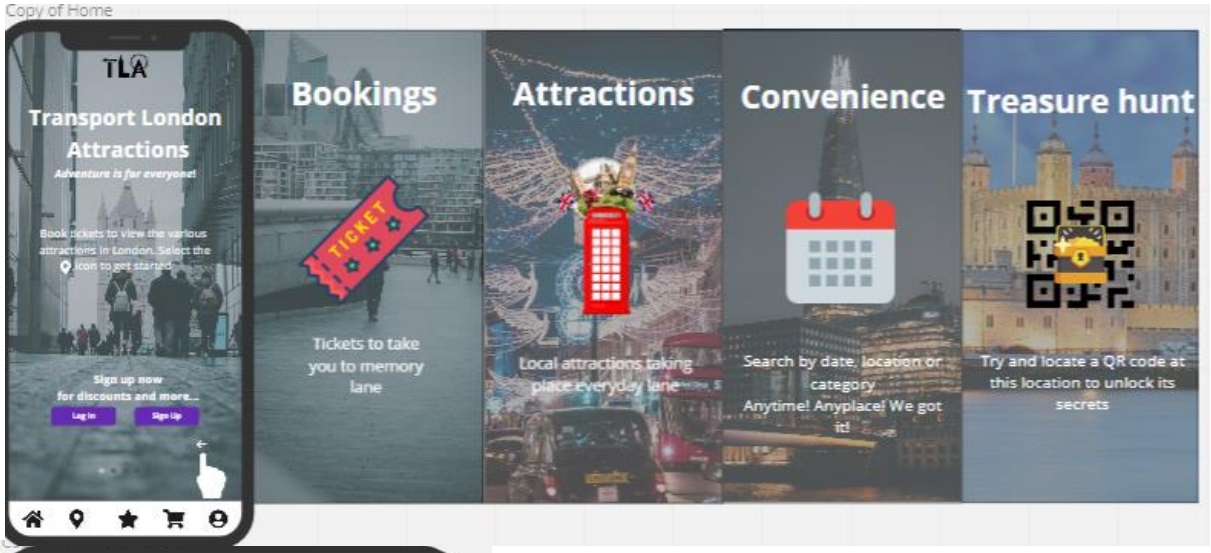
To the left is an example of **proximity** being used within our web application prototype. What this means is that text or content that are closer to each other shows that they are related with each other instead of having it further apart. As you can see to the left there is a red box outlining the title, image and the description below telling the user that this all comes under one group.

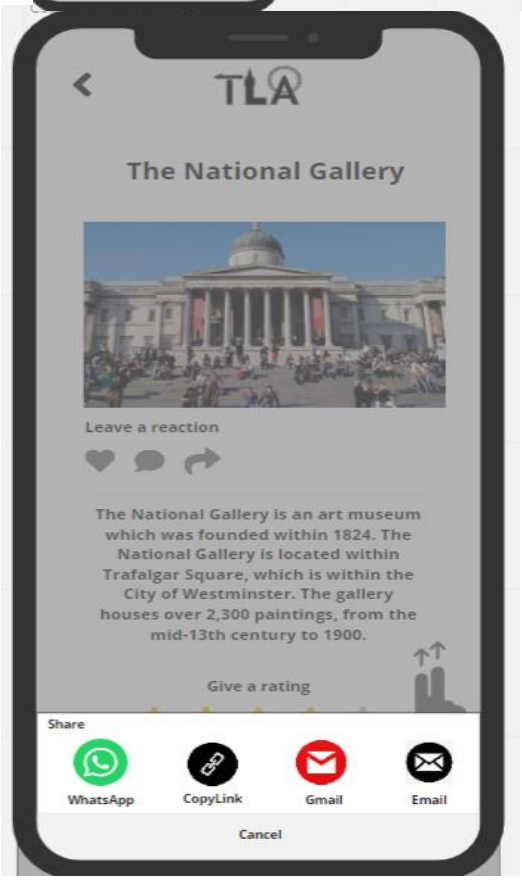
Furthermore, **closure** is also used in the example to the left, this is applied by creating a purple line between each comment. This makes it clearer and won't confuse the user as it separates each comment.



To the left is an example of **similarity** being used within the application prototype. What this means is that objects are using or sharing the same characteristics such as size, colour and more. To the left you can see a red box highlighting three icons which are the favourite, comment, and share. Here it shows that they are all the same size and colour and that they are close together and tells us that they are part of a group. Furthermore, on the location page you can see in red, it highlights the dropdown list as the buttons are the same size and colours and this is applied to all buttons within the web application.

Below is an example of **continuity and symmetry** being used. Continuation will only happen when the eye is forced to move through one object and continue to another one. As you can see, we have a slide of images that changes over time that tells the user the different purposes our treasure hunt application provides. This shows continuation. The meaning for symmetry is that if one object looks the same or similar as the other object and this is also shown below because each slide of the images provides different information but within the same style and similar style of images.



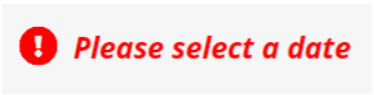


In our prototype design, we have applied a nice **figure and ground** balance which is shown by the image to the left. This is done by when a user clicks on the share button a prompt comes up and the background becomes greyed out which then lets the user quickly know what they can ignore and focus only on the share prompt below. This is achieved by making the share prompt brighter from the greyed out background of the point of interest and adding a bit of drop shadow to the prompt.

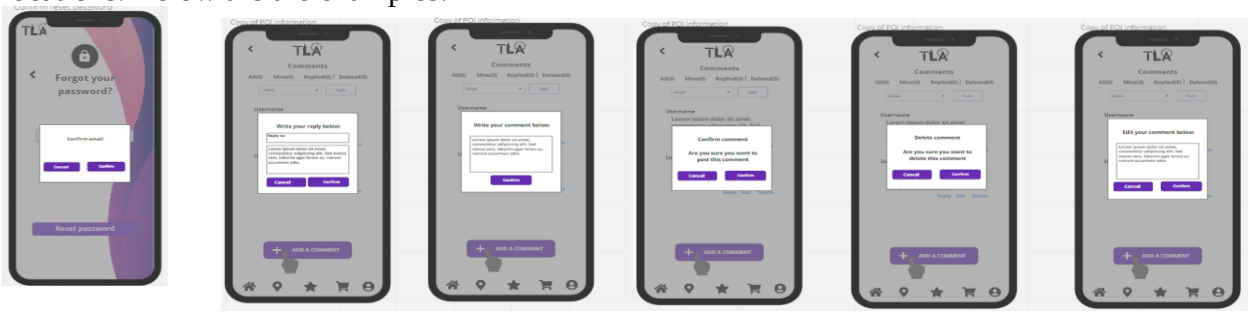
1.6 System response & feedback

In our proposed design we have implemented a couple systems that respond to user action for example, in the point of interest page we implemented a heart icon which will allow users to add the location to their favourites page. The heart icon will then change to red to show that the item has been selected and added to the favourite page.

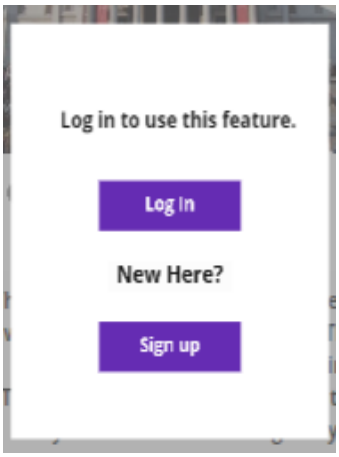
On the booking page we implemented a system response where if a user does not pick a date or a type of ticket it will alert a small message below saying warning: please select date and please pick a ticket. This will tell the user that they are doing something wrong within the process of booking a ticket therefore the user can now book without having any errors or missing information.



Furthermore, we implemented pop up messages on the login page telling the user that there is an issue with the way they entered the information then telling them to click the continue button so it will allow the user to try again, and this will be the same as for the forgot password. Another pop up used would be on the comment page as it tells users to click on the confirm password if they are sure to reply, delete, edit, or post a comment based on the locations. Below are the examples:



Moreover, we have implemented one popup on the account page as it tells the user if they are sure if they want to save the changes that have been made to their account, for example, first name, last name, email, and password.

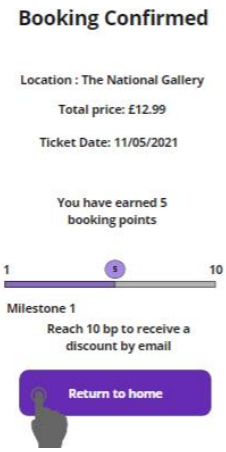


In our treasure hunt application, the user can normally visit the location page home page but in order for them to make a booking, add comments, add to favourites, and have access to my account page they are required to sign up so when the user tries and access the page it will display a prompt/ pop up to the user that they don't have access to that particular feature yet unless they have an account. Within the pop up it contains 2 buttons, one where it takes the user to the login page and another button that takes the user to the sign-up page.

1.7 Gamification

The way we implemented gamification in our treasure hunt mobile app design is that we added a point system for the bookings made by the user and when a user goes to a particular location, they would need to locate a QR code to scan and gain points which then allows them to claim discounts. Gamification using both the booking feature and QR code feature with the help of the built-in phone camera to achieve this.

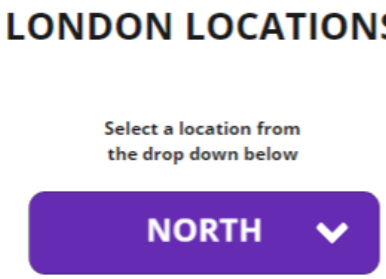
In our gamification, the way it works is that for every booking made you will gain 2 points. Furthermore, when a user gets a ticket to a particular location, they have the challenge to find a QR code and scan it to gain another 2 points along with more historic information about the place. In addition, for every 10 points made they will receive a 50% discount code which they can apply to their next booking.



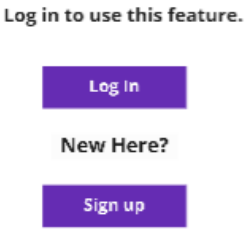
We made the user aware of this feature within our home page which is what the user first sees when they open our treasure hunt app. This shows the user an image and a description of a QR code treasure hunt to gain points. Moreover, on the home page, it also informs the user by giving them an option to sign up if they want to make a booking and get points. Another way the user will know about this is that when they create an account with our mobile treasure hunt app, they will have access to my account page where they can see the total amount of points they have made and make their discount claims there.

1.8 Directing the user to content and use of emphasis

Within the home screen the user is greeted by a welcome screen with information about the application and about how to get started. There is a prompt to tell the user to select the location icon to get started. This has been implemented to direct the user to the location page which is the page the user visits before visiting their chosen location.

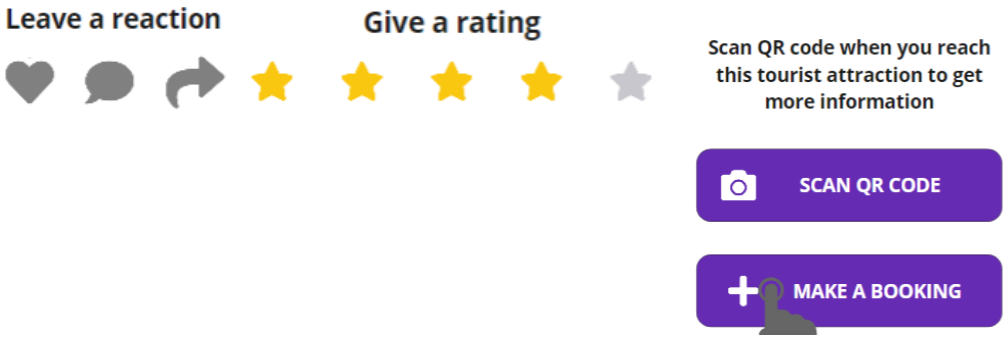


On the locations page there is a prompt displayed for the user to select a location from the drop down list. This enables the user to understand how to view locations within the application.

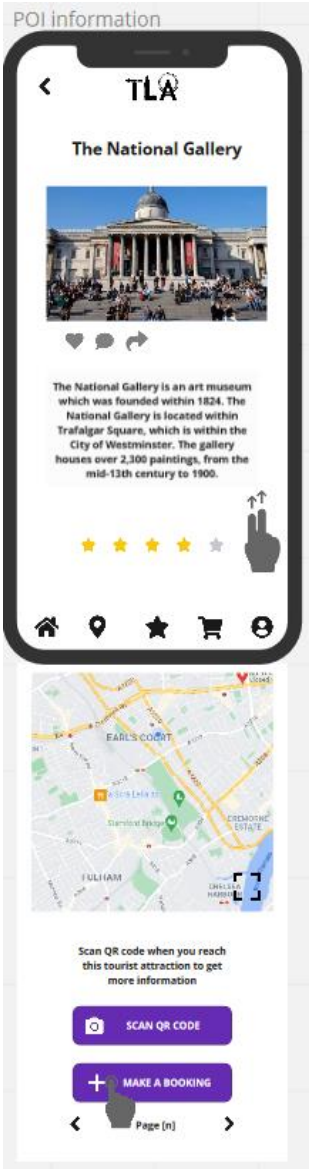


Another instance where emphasis has been used is in a situation where the user wants to go to the cart or account however, they are not signed into the application. This is because the user needs to provide specific information such as their name and email address before making a purchase.

On each point of interest page, there are prompts located next to features such as the favorites icon which is indicated by a heart to enable a user to add a location to their favourites list. Buttons such as “make a booking” are prominent in the application as they are designed with contrast in mind. Button colours are purple and are displayed on top of a white background with a consistent width of x. Action words such as “ADD”,”SCAN”.“MAKE” and “GO” are used as a call to action, which helps users complete tasks within the application. Buttons are important as they enable the user to navigate through the application.



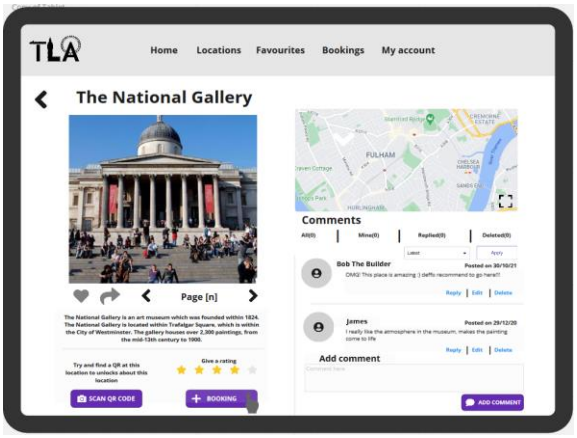
1.6 iPhone vs iPad



Design

The design between the iPad and the iPhone are best tailored for the user experience. The iPhone design displays a simplistic form utilising all areas on the user's screen. This allows for an attractive aesthetic appearance on the user interface to keep the user interested in the app. The iPhone buttons are sized in an equally distributed way to allow the user to properly select a button and not confuse the system on what is being selected. The iPhone has the ability to scroll down if there is an extension of information to provide the user or requires the user to enter information to continue. As the iPhone size is a minimalistic and small device, we have provided the user with easy and accessible navigation buttons which are placed at the bottom of the screen. The user can quickly go to any page effectively and efficiently.

The iPad is created in a way to please the user aesthetically as the iPad is a large device meaning the pages and contents on the iPad will be tailored to the iPad's size. The buttons on the iPad are much larger than compared to the iPhone version their sizes are different. iPad pages will be able to multiple pages and content on one screen compared to the iPhone version. For instance, if you view the comment section for the iPhone you can see that it is below the POI section which requires being scrolled down to as there is not enough space for both POI and comment section to be on one screen. Therefore, on the iPad version the POI and comment section are merged onto one screen as the size is big enough to allow it while having a tailored sizing of the buttons. There is also the quality of the pages to mention as the screen is large on the iPad compared to the iPhone there may have been some expectancy on the quality of images to be reduced however if we increase the quality of the image on the iPad compared to the iPhone then there should be no obvious difference between the images on both devices. There is also an obvious desktop appearance as although the iPad is large enough to allow a design to look like that there is also the consideration of connecting a mouse and keyboard to the iPad which can allow a user to use the iPad as a computer.



In conclusion, the designs on each device have small changes for the better as they improve the user experience and interface. Both devices ensure the quality of use will be maintained and allow the user to access the application equally as efficiently and effectively.

References

Provide references to resources you may have used

1. Statista (2018). *App stores: number of apps in leading app stores 2018 | Statista*. [online] Statista. Available at: https://www.statista.com/statistics/276623/number-of-apps-available-in-leading-app-stores/.
2. Gestalt principles in Web Design. (2019). *Swapps*. Available from https://swapps.com/blog/gestalt-principles-in-web-design/ [Accessed 10 November 2021].
3. How to use Gestalt principles to improve your website design. (2019). *Six & Flow*. Available from https://www.sixandflow.com/marketing-blog/using-gestalt-principles-to-improve-your-website-design [Accessed 10 November 2021].