Department of Computer Science
Assessed Coursework Set Front Page

Course code: CS2HC18
Lecturer responsible: Huizhi Liang
Coursework description: Group Report

Group report deadline:
Work to be submitted on-line via Blackboard Learn by: 12:00 noon, Friday, 15th March 2019 (Week 9)

Work will be marked and returned by: 15 days post to the submission

Effort allocation sheet for Group report and A2 of individual report
You are required to work on the coursework in a group of ? members. Each group will submit an *effect allocation sheet* together with the report.

Category A members: *(Contributed at least 50% of expected effort)*

Name (printed)	**Contribution (overall percentage %)**	**Contribution (indication of the section led)**	**Signature**
Alyssa Nicole Doria	125%	Concept Video + Needfinding (Interviews) + Report Compilation	
Chibu Agbanyim	125%	Needfinding + Introduction	
Christos Tsagkaridis	125%	Paper Prototyping + Conclusion	
Dimitris Dimitriadis	125%	Heuristic Evaluation + Proof Reading	

Category B members: *(Contributed less than 50% of expected effort)*

Name (printed)	**Contribution (overall percentage %)**			**Contribution (indication of the section led)**	**Signature**
	<50%	**<25%**	**0%**		
Josh McLean			0%	None	

Note: The expectation is that all members in the group have made a (roughly) equal contribution. In this case, every member in your group will be category A, and each will have allocation 100% effort.

Instructions: using effort allocation sheet
All members assigned to your group should be allocated *either* to Category A *or* Category B.

- **Category A**. One has made a reasonable contribution (i.e. more than 50% of the contribution of other individual group members).
- **Category B**. One has not contributed very much (i.e. <50%, <25% or 0% of the contribution of other individual group members).

For **Category A** members:
1. Fill in names in the Category A table.
2. Multiply the number of Category A members by 100 to calculate **available percentage** (e.g. 300, if 3 Category A members)
3. Split available percentage between Category A members and record in **Contribution** column (e.g. 100 max. to each member, if all Category A members have made equal contribution.

For **Category B** member:
Fill in names in the Category B table and tick the appropriate column depending on whether they have contributed approximately 50%, 25% or 0% of the effort of other individual group members.

Human Computer Interaction: Group Report

Introduction

Explore Reading, explore, discover, and see the wonders of the Berkshire area.

This Documentation is a report regarding the development of a travel resource website and will outline the many stages involved in the design, development and implementation of the website.

Explore reading is a website that aims to enable the exploration of the Berkshire area, the many attractions it has to offer as well as educate users of these attractions if they choose to do so out of leisure. It will offer live up to date map service as well as on the go usability for users on their mobiles.

The document will follow the chronological order that was used to create the "explore reading" website and present the findings and analysis at each stage briefly described below.

1. **Need finding;** At this stage the planning and initial development of the website shall occur and users will be crucial as **interviews, an empathy map, Point of View Development and "How Might We"** solutions will occur and be established.
2. **Paper Prototyping;** At this stage low-fi prototypes of the website will be created in order to establish the best solution and enable testing and discussion to occur, this will include;
    - Sketching the concepts and UI
    - Storyboarding a task flow for each task
    - Making a low-fi paper prototype
    - Testing the paper prototype with users
    - Discussion of the changes and any revisions
3. **Concept Video;** At this stage design ideas will be turned into a concept video to better present the context of the project to an audience.
4. **Heuristic Evaluation;** At this stage we will play the role of a consultant to find problems with other teams prototype as well as perform heuristic evaluation of another team's user interface, this shall include
    - A list of the problems found
    - Summary of the number of violations found in each of the ten heuristic categories and total number of violations in the entire interface
    - Overall recommendations for improving the user interface comparing the slides to their prototype

User Need feeding

Interviews

The following survey is created to collect data in regard to the use of online travel resources. My team and I are planning on developing a site/app that can assist the users to have a simple, practical and functional way of planning trips. The app/site created will be specific to the area in application to our project we decided to be specific to the Berkshire area.

User Survey

The final survey was developed on survey monkey, in doing this me and the team was able to track the results of the surveys, it further gave us the platform to share on a range of social media sites. The questions used are mostly close ended question in doing this we are able to look for a more definite answer, enabling us to produce and outcome what the user need and want. In doing an online survey we are able to collect data from different age groups and backgrounds. The survey was too large to be placed on one survey without having to pay for the additional fees. The decision was made to create the survey online as we are able to collect more results from a range of users and receive a more definite answer.

https://www.surveymonkey.co.uk/r/K9YV9JC

https://www.surveymonkey.co.uk/r/KXFBRGZ

A further decision was made to conduct an interview with a range of individuals (3 max), in doing this we are to collect data in an in-depth detail, in doing this we are able to have more of a discussion in what the user will need and want. This interview will focus more on the target audience which is millennials. The questions from the survey will be used as interview questions conducted in an informal setting in doing this we get more of a genuine answer. In order to prevent getting short answered responses, we can use terms as 'further elaborate'.

1. Have you ever used online travel resources?
    a. If so, what for?
2. What online travel resources have you used?
3. Has using online travel resources assisted in the planning of trip?
4. With the use of online resources has making travel arrangements become easier or harder?
5. How often are online travel resources used to make travel plans?
6. What features of online travel resources do you find beneficial and what is disadvantageous?
    a. What would you like to see in an online travel resource?
7. Have you ever used online travel resources for any other purpose apart from travel? *e.g. educating yourself about the location of your chosen uni, planning on relocating etc.*
8. Are there any aspects that prevent/affect your travel plans? *E.g. budget, weather, time*
9. What is your main form of transportation for these trips?
10. Are you familiar with the Berkshire area?
    a. Are you familiar with the areas you plan on travelling too?
11. What type of business do you intend on doing when in the Berkshire?
12. Would you be interested in a website specific to the Berkshire area existed? (an app which is specific to an area)
    a. Would you use it?
13. Do you use people's suggestions on the online travel resources?

A further decision was made to conduct an interview with a range of individuals (3 max), in doing this we are to collect data in an in-depth detail, in doing this we are able to have more of a discussion in what the user will need and want. This interview will focus more on the target audience which is millennials. The questions from the survey will be used as interview questions conducted in an informal setting in doing this we get more of a genuine answer. In order to prevent getting short answered responses, we can use terms as 'further elaborate'.

The team and I haven't conducted a domain expert interview the purpose of this is because, that the domain expert will be classified as travel agents. However, the process of the travel agents is completely different to what my team and I are aiming to achieve. The relevant domain experts will be the creators of TripAdvisor or Trivago. Interviewing a domain expert was not attempted, however if done so, we would have had an external view on how we can implement and design our project

Empathy Map

The empathy map was constructed by observing the individuals we interviewed, to understand the user needs and ensure we discover their essential needs compared to their wants. Using an empathy map allowed us to add user experiences into the mix which will improve the later stages of design such as creating story boards.

The 4 sections of the empathy map;

"**Say**" which the user's direct quotes were written to define key words or significant opinions.

"Think" which enabled us to further analyse the user and ascertain their goals, needs and desires.

"Do" which enabled us to evaluate the user's actions and behaviours while answering certain questions.

"Feel" which allowed us to break down the users answers from the interview and examine their body language as well as change in tone which is impossible to gauge from user requirements alone.

After creation of the empathy map, we were able to synthesis needs by viewing any contradictions between what users said and thought which enabled us to see what questions received the most positive and negative reactions. This was then compared to the “hierarchy of needs” which enable us to rank the user needs and move on to the next stage of POV Development.

POV Development

PoV development takes places after considering essential views from users further enabling the defining in the design and thinking process. This sets a guideline on the activities that follow, the PoV is based on a deeper understanding of specific users, in our case after we emphasised with their views. Our PoV followed a format of first introducing the background of the user. Followed by what this user caused us to realise from the interviews after emphasising with them and outlining their needs then the final part was the stating of the crucial points and feelings of the users and providing useful insight.

This provided us with a wide enough scope to start thinking about solutions which later helped when we moved onto the paper prototyping stage. Thus, instead of simply outlining any issues to work on it gave us a unique design vision to enhance our design work.

HMW

After designing the PoV of the user we moved onto the HMWs, this is the stage where we open for ideas in order to solve the design challenge. Here we break down our PoV by asking targeted questions, this enables us to brainstorm ideas and further analyse the user needs, During this stage we constructed 3 HMW for each user and selected 1 of the most suitable HMWs which enhances the creativity and gives us a path to solve each problem, the selection was based on what we thought was the user crucial needs.

Paper Prototyping

Problem and Solution Overview

Reading is becoming a very popular destination inside the United Kingdom as time goes by. Due to the fact that it is so close to London, that the University is highly ranked, as well as the modern town that it is and what it offers, it makes an adequate destination for a lot of people not just for travelling and studying, but also for living and settling down. However, many people come to this town and don't know exactly what Reading has to offer. Moreover, they don't know the location of many popular sights and attractions. With exploreReading we can ease all of this by the process of finding out. The website hosts everything recommended on what to do and where to go in Reading. This comes with a brief statement-description of the image that shows the attraction and the location of it by embedding Google Maps underneath each image. In this way the user can lively interact with the website and go to the current site by using Google Maps that has the location of the image marked down so the user can navigate to it by his current location.

Concept Designs and Sketches of the website

For this project idea, 3 concept designs were made with a number of sketches as shown in the Figures below:

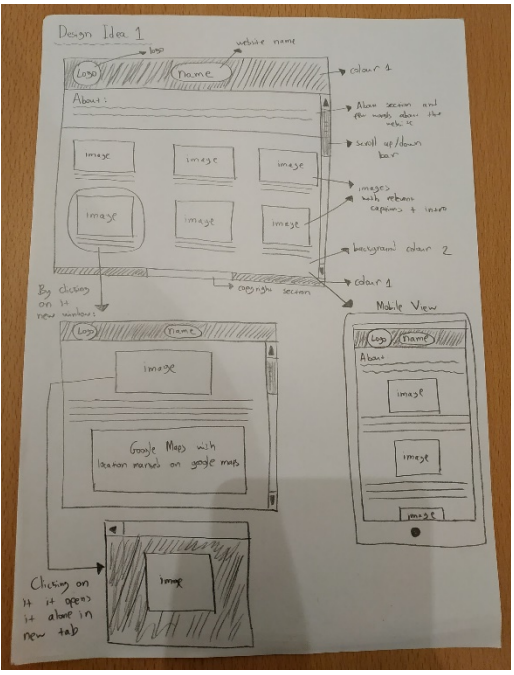


Fig.1.: Design 1 with Sketches

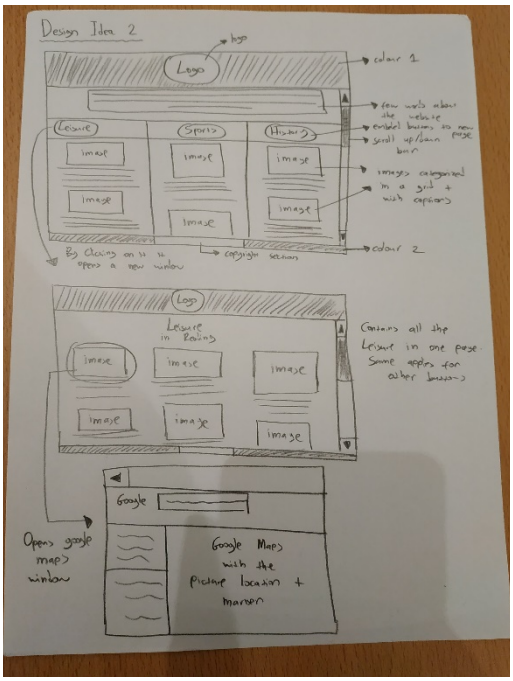


Fig.2.: Design 2 with Sketches

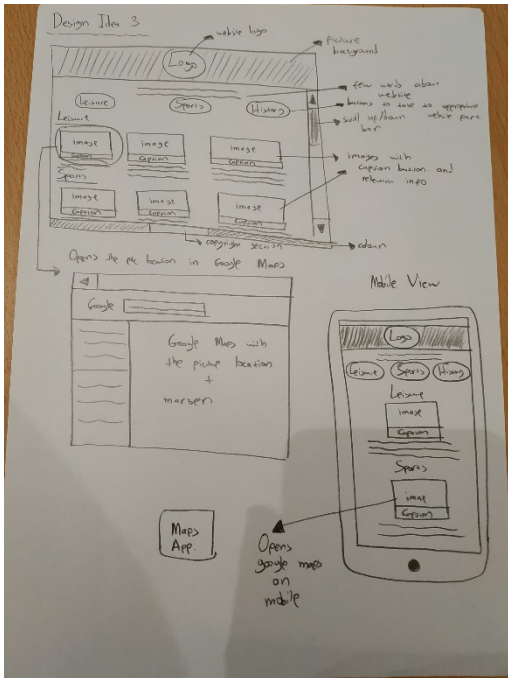


Fig.3.: Design 3 with Sketches

Top Two Designs

From the 3 design concepts that were drawn, the top 2 that we believed were better and more suitable, were selected to be drawn in furthermore detail and in a storyboard kind of form.

Our first Design (see Fig.4.) features the Design 1 Sketch in more detail. Users can view all images of the attractions from the Home Page with a minor Caption and Description for each image. By clicking on whichever picture they desire, they will be redirected to a new window that is part of the website. This window contains the clicked image in a larger view with enhanced description about it and a map of the area that pinpoints the location of it with a marker. Also, if a user wants to view the website from his mobile phone, the website is mobile friendly and will feature in the exact same way with the difference that the pictures on the home page will be underneath each other one by one.

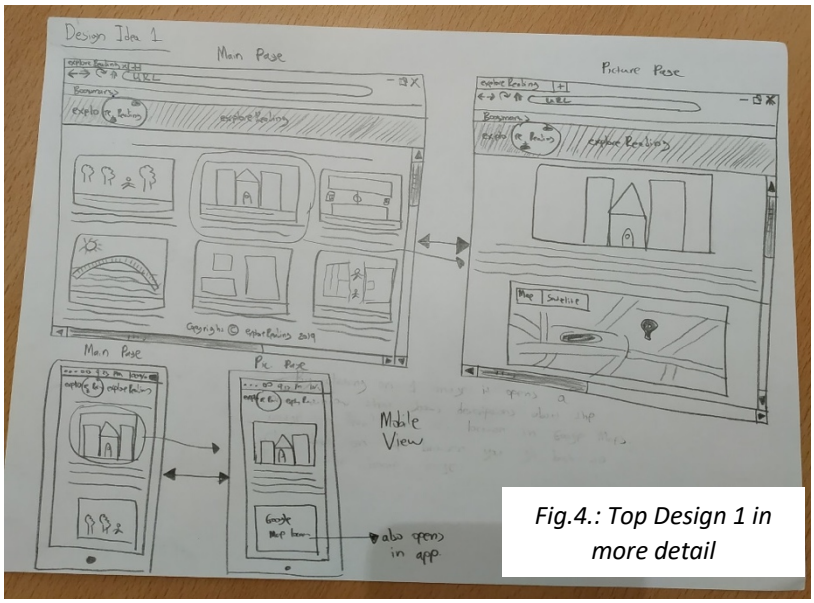


Fig.4.: Top Design 1 in more detail

Our second Design (see Fig.5.) features the Design 3 Sketch in more detail. Users can view all images from the Home Page with a minor Caption and Description. Each image is categorized by group. By clicking on a group button, the user will be redirected to the specific part inside the website. By clicking on whichever picture they desire, they will be redirected to Google Maps to view the exact location of the imager they are viewing and lively interact with it to go there. Also, if a user wants to view the website from his mobile phone, the website is mobile friendly and will feature in the exact same way with the difference the pictures on the home page will be underneath each other one by one. If the user clicks on a photo, his google map phone application will open and redirect him there for live interaction.

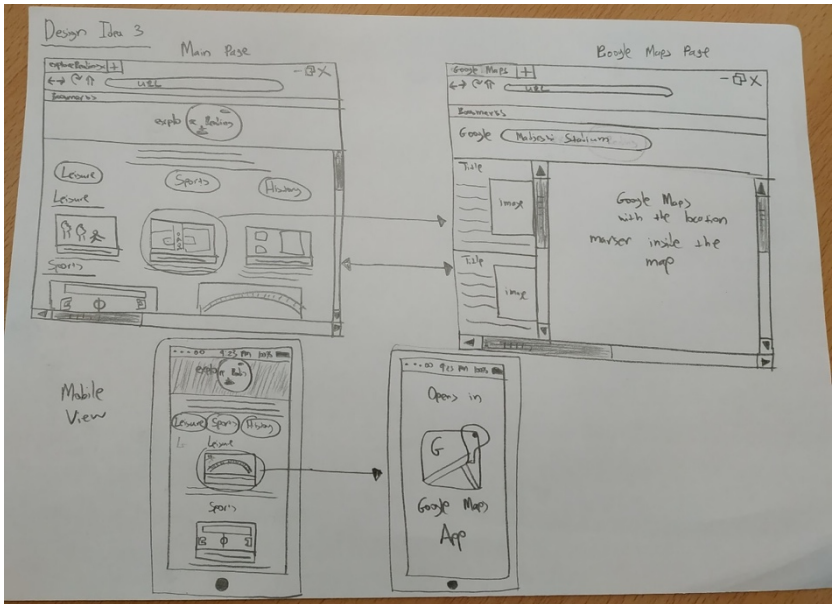
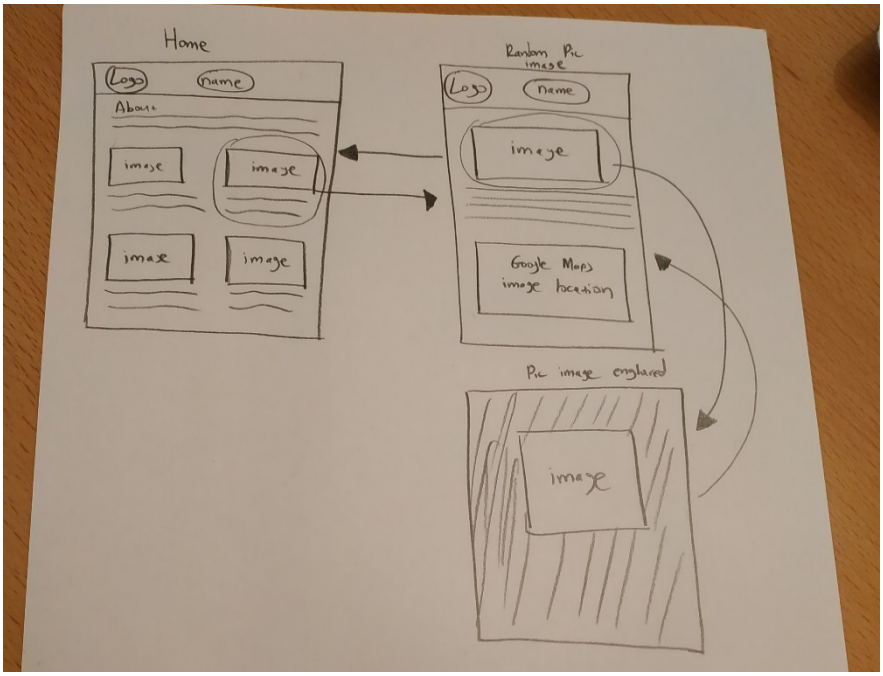


Fig.5.: Top Design 2 in more detail

Selected Interface

Task Storyboard

Fig.6.: Task Storyboard



After careful consideration, we decided to go with the implementation of Design Idea 1 with a few features from Design 3 and then we designed its Task Storyboard on paper as shown in Fig.6.

Reasons for Selection of Design Idea 1

Pros

- Easy Interface for the user to navigate and explore.
- Good and consistent structure of the website.
- Is mobile friendly.
- Google Maps is embedded inside the website for the user to view the location of each image
- Image location of each image is marked down on the map for each one.
- The new window that opens when clicking on the image gives us the space to further describe each image and embed google maps, without having everything in 1 page under each image and creating a huge one-page website.

Cons

- Google Maps doesn't open in a new window. It's just static there on the website.
- Could be organization of the photos in categories.
- User must always scroll up to go top of the page and click back to go from the image page to the home page.

Prototype creation of Design Idea 1

Once all sketches were designed and the Task Storyboard of the website figured out, a prototype of the website was needed to be designed. This was conducted so that we are able to view it in more detail, in regard to how the components on each page will be viewed and the interaction that will occur between the different pages and components. We designed 2 prototypes. One on paper and online using proto (https://proto.io).

Following is the online design prototype.

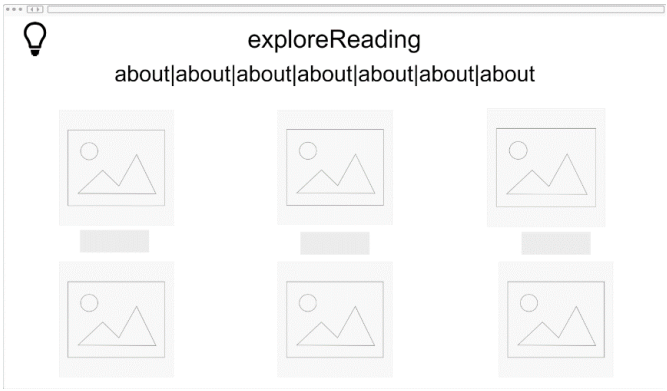


Fig.7. Prototype of the System: Home Page

Featuring above is the homepage of the website. This will contain all images of the places to go and do in Reading, as well as a caption for each one. On the top left, the logo of the website will be implemented. Below the website title that will be in the top middle of the page will be the about section that will tell the user a bit of information about the website. After that, the images will be implemented (3 at a time) with their captions beneath each one.

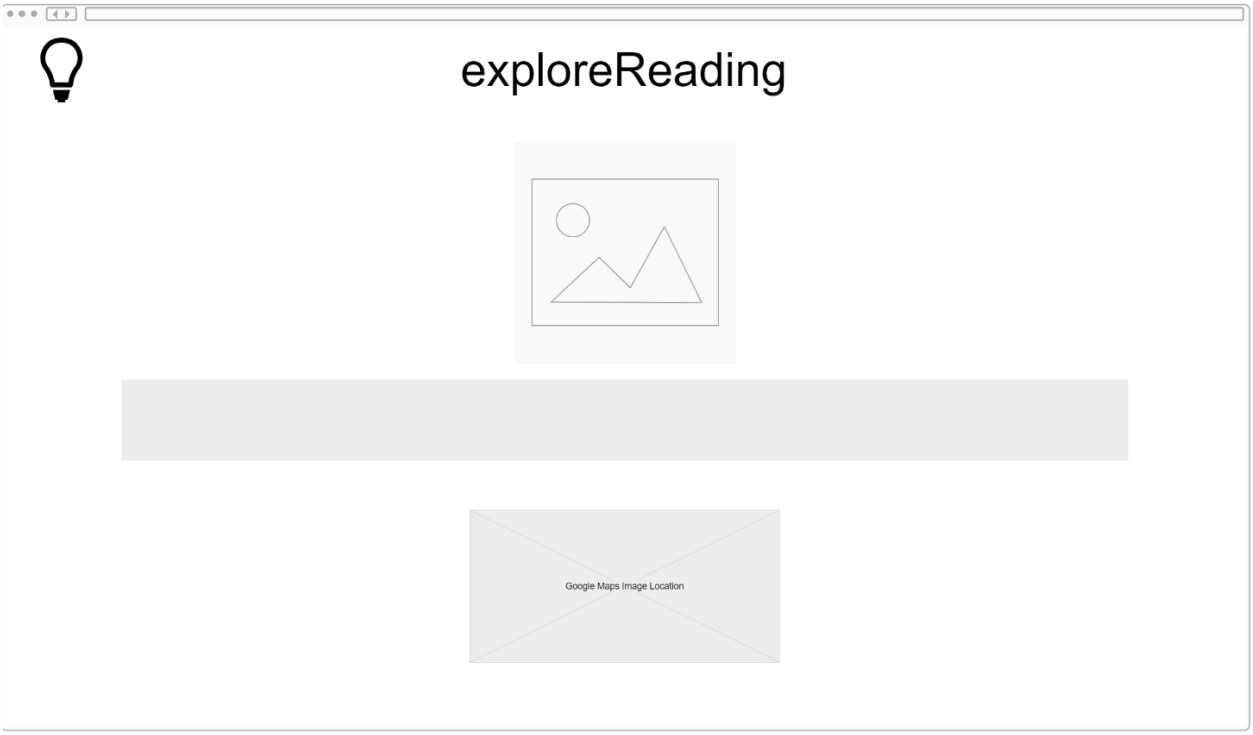


Fig.8. Prototype of the System: Image page

Featuring above is the window that will open when an image is clicked. On the top left, the logo of the website will be implemented and in the top middle the website title. After that, the image clicked will be implemented with a caption and description of it in detail. Below that, Google Maps will be implemented to show the exact location and a marker of the image in the world map.

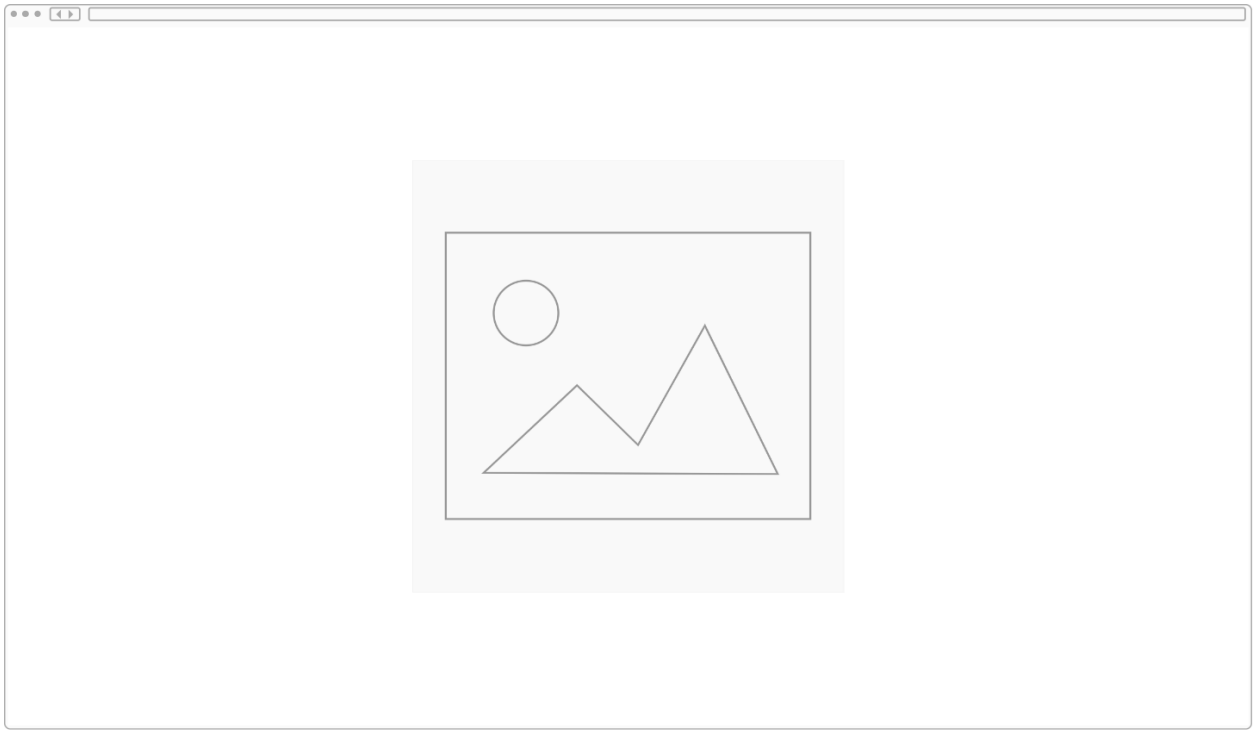


Fig.8. Prototype of the System: Picture clicked

Featuring above is the window that will open when an image is clicked inside the image page. The image will open in a new window enlarged and in a black background.

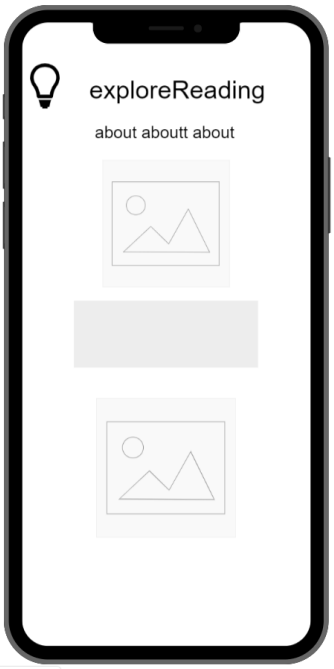
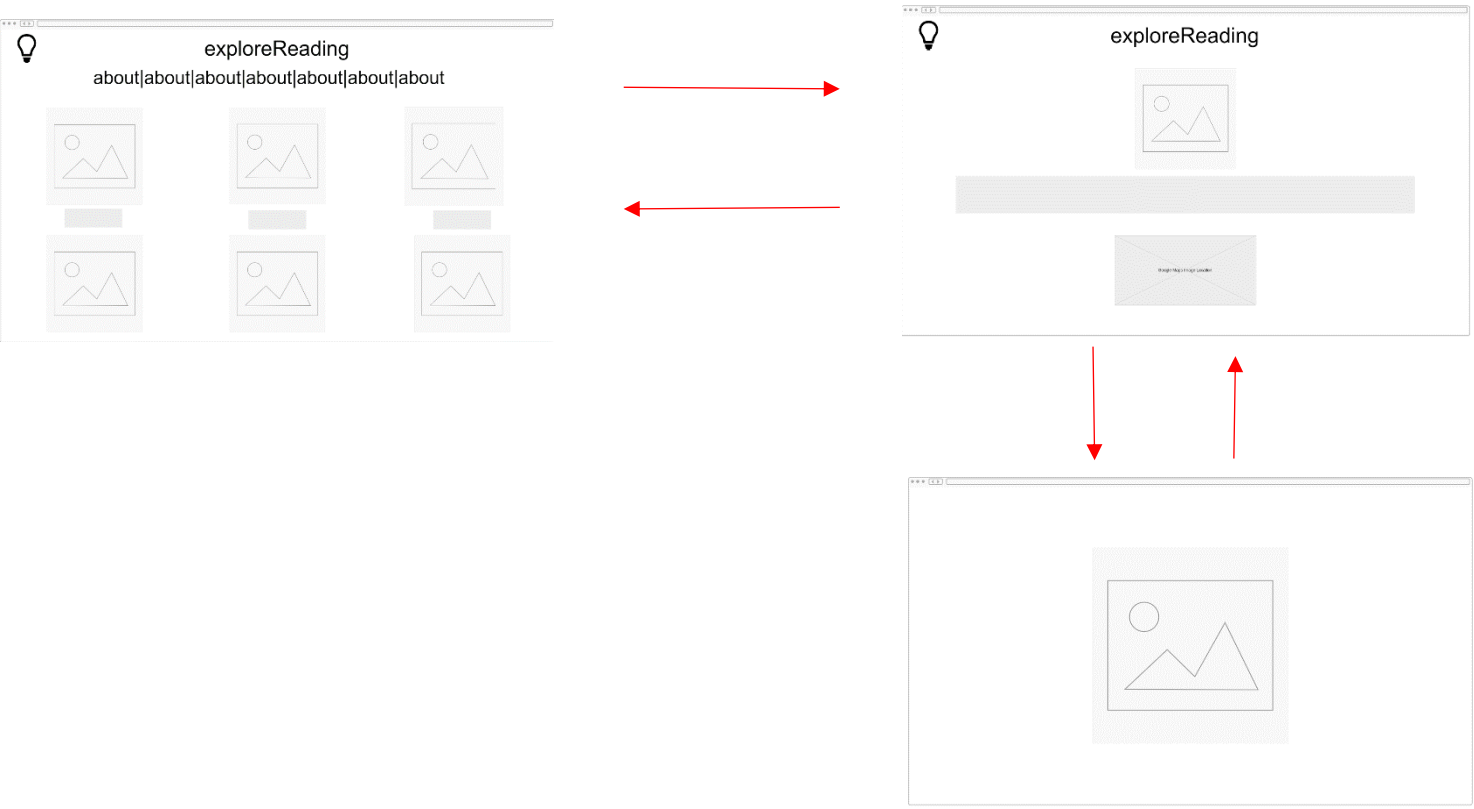


Fig.9. Prototype of the System: Mobile View

Featuring above is how the website will be viewed from a mobile device. It is mobile friendly.

Entire Prototype Picture of the whole system with all screens used and the Task Flows between them using proto (https://proto.io)

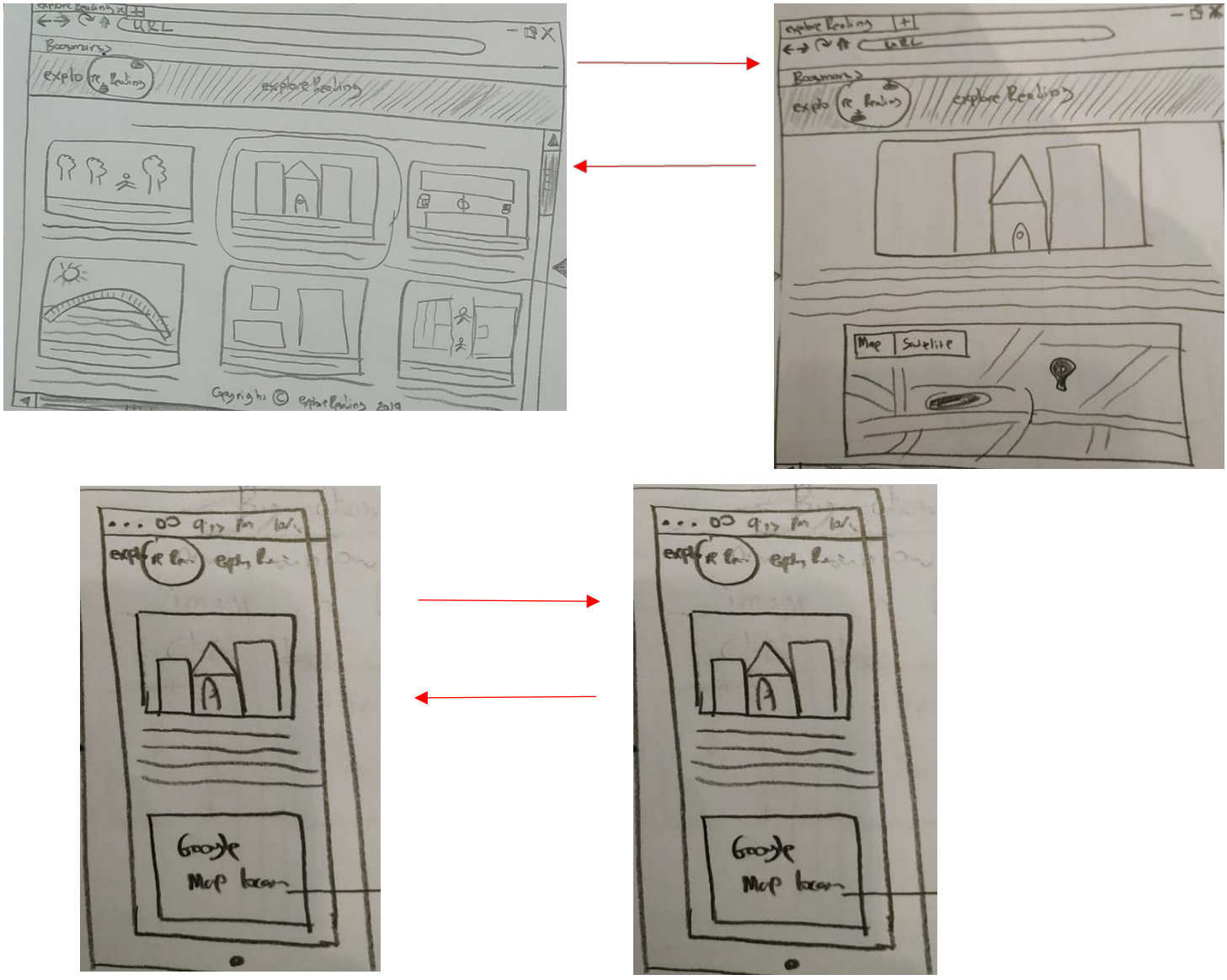
Web View interaction



Mobile View

Alyssa Nicole | Chibu Agbanyim | Dimitris Dimitriadis | Christos Tsagkaridis
HCI_GROUP 2

Entire Paper Prototype Picture of the whole system with all screens used and the Task Flows between them



**Notice that our paper prototype is very similar to the prototype picture design and our storyboard of the system. If you feel confused with the flow, please see the flow of each page in the storyboard.

Test of the Paper Prototype System with Users Environment

Our participants in this Test were our friends that have diverse knowledge and use in computer interaction and website using. We interviewed 3 of them, each one on a different day, inside a café that we hang out. The interviews were conducted at 4 pm when the café is relatively quiet and not to crowded for our interviewees to be distracted from performing our demo tasks.

Participants

Participant 1 is a 3rd year psychology student at the University of Reading. She is from Cyprus and likes hanging out with her friends and uses websites each day for a range of purposes. Participant 2 is a 2nd year law student at the University of Reading. She is from Cyprus and likes history and sports. The 3rd participant is a 22-year-old working at Starbucks Oracle and is from Wales. He likes sports and video games. Participants were not compensated for their time. For each participant, we asked for their time and to sign a consent form.

Tasks

The tasks of the participants were to figure out how to use the exploreReading website, navigate in it and explore all its features.

Procedure

For our experiment, we used a prototype made out of thick, letter-sized, printing paper so as to simulate a 13-inch laptop screen. The prototype screens were given to the user based on user input. We fixed a menu bar on the top of the table which would be the same for any screen.

The interview would first begin with an introduction to our idea by the facilitator. Subsequently, the facilitator would start off by walking the user through the context and the task they would do and the features that the website has implemented. The computer would change the screens based on user input. All this while, the note taker would document every action, measure the reactions and note it down.

Test Measures

We measured process and usability of data, the approximate time it took to complete the subtasks (use and navigate inside the website), and number of errors. For time, less than 4 seconds was considered little to no usability problem (very good), 6 seconds or above was a major usability problem (ok) , and 10 seconds or more was a catastrophe (bad). We took note of critical moments where the participant instantly completed the task, made a positive comment, or got stuck.

Team Member Roles

Christos acted as the computer, Dimitris was the facilitator and note taker, and Nicole supplemented the notes and photography.

Results and Discussion:

The results of our experiment with all Participants were similar for many features. All of them used the scroll bar to go up/down an view the whole website page. Then they clicked on an image and were redirected to the image page. After that all of them clicked on google maps as they thought it will open in a new window. To go back, Participant 1 and 2 clicked on the logo of the website while Participant 3 clicked the back button.

Overall, this prototype was very useful in revealing some minor usability problems and future directions for our work. The prototype was a success as we achieved our goal of having a simple and usable website for all people that does exactly what is intended to do with nearly no difficulty.

UI Changes

- Make the logo redirect back to the home page as a button on the image page.
- Enter a url under the google maps for the actual google maps to open with a marker of the image as the google maps that is embedded in the system is just static and for viewing.

Concept Video

Value Proposition

The purpose of the concept video is that it acts as a feasibility and a demonstration of the principle with the aim of verifying that the problem can be resolved. The concept video shows the problem that the user faces and uses the video as a platform to highlight the solution made.

Problem

The concept video addresses the problem that major tourist sites such as 'Trivago' and 'TripAdvisor' mainly focuses on the popular attractions, they don't consider hidden gems. The issue with this is that specific tourist destinations become overcrowded, it doesn't provide the tourist a sense of adventure, meaning they are not further educated on what the area has to offer. Similarly, to this a further problem is considered such as that the mentioned websites doesn't always suggest the area, they only provided a comprehensive details on popular tourist locations such as major cities and locations. From this there is no accessible information to the users, due to the major websites prioritising larger cities and popular destinations.

Solution

In regards to the video, our focus became on solving the problem with the solution on focussing on hidden gems and adventures and less of the crowded attractions. The concept video highlights the user using the exploreReading app/site to move freely using the interactive map, when selecting an attraction. It further provides suggestions on a variety of routes on alternative transportation to the destination. Our team decision to develop an app that was more specific to the area, however it still meets the users needs and wants of the user, as it offers and alternative and convenient way to discover more about the local area.

Overview

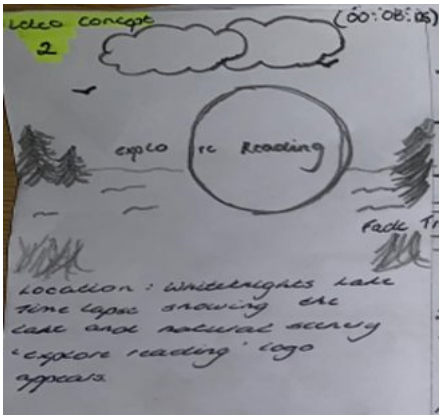
The concept video focusses on highlighting three tasks; Browse, Find and Recommend. The purpose of doing this is that it is highlighting the three tasks is that it shows the key concepts of the exploreReading app/site being used in the video solving the problem mentioned above.

- Browse: Find attractions that are relevant to the user meeting their specific needs and wants, selecting from the suggested areas.
- Find: Locating the desired attraction chosen using the interactive map, using the suggested forms of transport.
- Recommend: Informing people know what they enjoyed about the attraction by providing a rating.

When planning and designing the video concept it is important to include all key components that the app/site has to offer. There was three possible story lines that focussed on the three key components of the app/site. As a team we believed that it was crucial to implement the problem being solved within the video, with the use of the exploreReading app/site being the solution to the problem. The targeted audience will have a visual representation of the app/site being used and seeing how it's beneficial to the user and the local community.

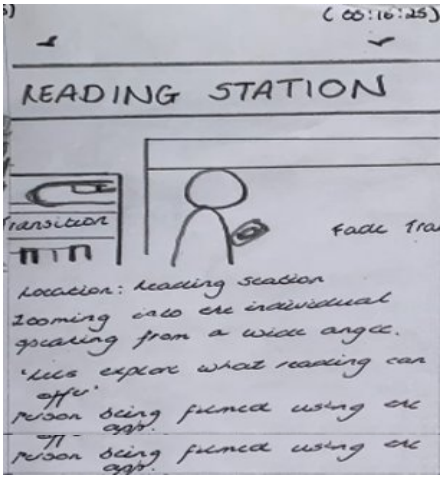
The final storyboard was designed following the paper copy, which is seen below;

The design of the concept video follows the following;



<u>Introduction to the Problem</u>
The concept video will begin with a brief introductory clip of White Knights Lake. Video taken during the day.

- Fade in transition of ”Explore Reading” logo.
- Upbeat music playing in the background. Fades silently into next scene.
- Clip of White Knights Lake would be a time-lapse take from a wide angle.

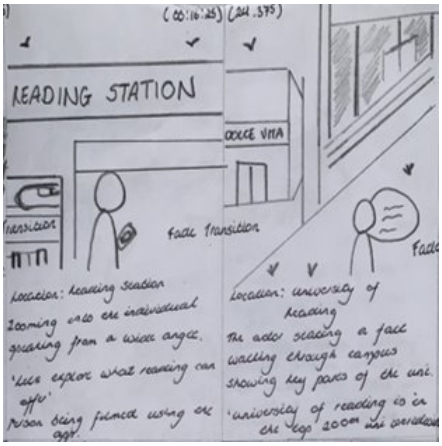


<u>A look at the problem and Rising Action</u>
The following scene focusses on facing the problem that the user may find.

A wide shot of the actor arriving in Reading Station during the day. Then goes into a wide-medium shot of the actor looking for something to do.

Zooms into the actor looking on the “Explore Reading” app. Filmed outside the station

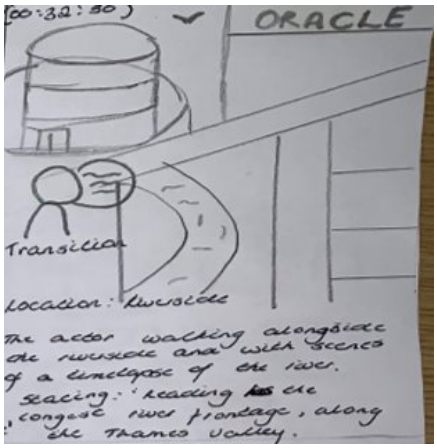
- Looks on the features that the app offers.
- A screencast scrolling through the app with a low volume music playing in the background
- Fade Transition into next scene.



Task 1:Browse

The actor is filmed on the University Reading Campus. From the previous scene where the attraction they wanted to visit was the university when selected on the app.

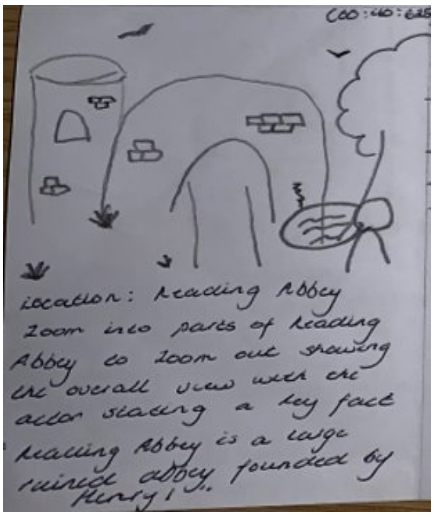
- Actor stating how easy it was selecting a. attraction.
- Further providing a fact that the actor has learnt.
- Filmed on typical university day, filmed on a wide-medium angle.
- Can possibly show other features of the uni.
- Low volume music playing in the background.
- Fade Transition into the next scene.



Task 2: Find

The actor is then filmed at the Oracle. From the previous scene where they demonstrated browsing through the attractions. The actor used the interactive map once the new attraction is picked and used one of the suggested form of transport.

- Further providing a fact that the actor has learnt regarding the attraction chosen.
- Filmed on a wide-medium angle, showing a panoramic scene outside the Oracle.
- Filmed during the day, allowing natural sunlight.
- Low volume music playing in the background.
- Fade Transition into the next scene.

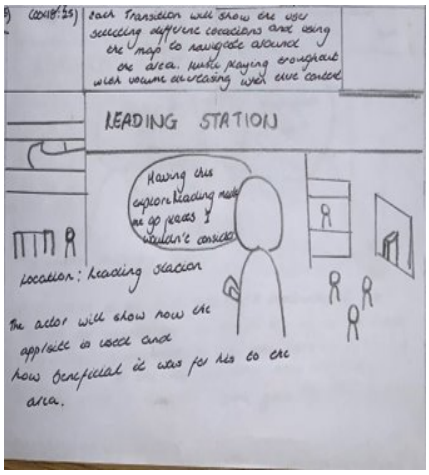


Task 3: Recommend

The actor is then filmed at Reading Abbey. From the previous scene where they demonstrated browsing through the attractions. The actor doesn't know where to go so they use the recommendations provided on the app. The actor used the recommendations to select a new attraction.

- Actor stating the benefits of using the recommendation feature.
- Further providing a fact that the actor has learnt regarding the attraction chosen.
- Filmed on a wide-medium angle, showing a panoramic scene outside the Abbey.
    - Filmed on a natural sunny day
    - Filming a 360 clip of the abbey.
- Low volume music playing in the background.
- Fade Transition into the next scene.

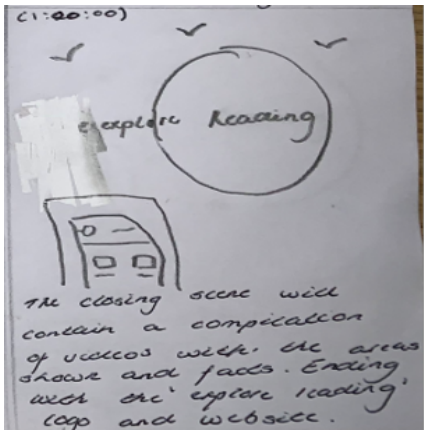
Alyssa Nicole | Chibu Agbanyim | Dimitris Dimitriadis | Christos Tsagkaridis
HCI_GROUP 2



App Overview

Once all key features of the app is shown. The final acting scene is taken back to Reading Station. The actor is then providing a positive overview of the app and how it has benefitted their trip to the Berkshire Area.

- Actor stating the benefits of using the “Explore Reading” app.
- Filmed on a wide-medium angle, showing panoramic scene outside the Station and the actor using the app.
- Low volume music playing in the background.
- Fade Transition into the next scene.



Closing Scene

The closing scene will contain a compilation of all 3 feature being shown, with a slight increase in video speed acting like a time-lapse effect.

- The last compilation video will have a fade in of the “Explore Reading” logo.
- Low volume music playing in the background.

Final Video

The final video is linked below which will be found on YouTube and on the exploreReading app/site.

https://youtu.be/xLe6uf_sbg0

Alyssa Nicole | Chibu Agbanyim | Dimitris Dimitriadis | Christos Tsagkaridis
HCI_GROUP 2

Heuristic Evaluation of CookHouse (Group 7)

1.Problem

CookHouse is the solution for cooking, as it allows the user to cook anything that they personally like in a simple way.

2.Violations Found

1. **H1. Visibility of System Status | Severity 1 |**
   The first page of the website does not contain a short description explaining the purpose of the it. The four categories appear when starting the page without knowing what this page is all about.
   Fix: Input a short description at the top of the first page to inform the user about the website.

2. **H1. Visibility of System Status | Severity 2 |**
   The search bar doesn't contain a message which indicates what anyone can search for. The search bar must clarify the search options.
   Fix: Indicate what can be searched for – "Search recipes, ingredients…"

3. **H1. Visibility of System Status | Severity 1 |**
   The categories section of the website does not have a description for what each category contains, so the user does not know what information can be found behind each category.
   Fix: Include a short description under each category to inform the user about it.

4. **H2. Match Between System & Real World | Severity 2 |**
   "Dish Type" and "Diet" are probably misleading titles in those two categories as they are not specify clearly what to find in each category.
   Fix: Change the "Dish Type" to "Meal Categories" and "Diet" to "Diet Preference".

5. **H2. Match Between System & Real World | Severity 3 |**
   The filter options are not appropriate as they filter the categories. The user has to be able to filter through the details of each recipe and not to the categories.
   Fix: Change the options of the filter to "Ingredients", "Preparing Time", "Cost" etc.

6. **H2. Match Between System & Real World | Severity 1 |**
   In the description of each recipe the cost of each ingredient does not appear and also the cost of the whole recipe to make. Also the portion of each ingredient to use is not clear and there is not an option for the portions required in order to make the recipe for more than one person.
   Fix: Add an approximate cost for each recipe and also detail the portion of each ingredient for one or more persons.

7. **H3. User control and freedom | Severity 3 |**
   After applying the desirable filter options to the website there is not an option to clear these filters after they apply.
   Fix: Add a "Clear filters" button to the filter menu.

8. **H3. User control and freedom | Severity 2 |**
   When the user makes selections on the website the current section that the user interacts does not presented to the page. It would be a nice touch to the website to present all the steps that the user followed in order to get to a recipe. This will help to find a recipe again more easily and navigate through the sections of the website. The directory map should be also be clickable to help the user navigate backwards.
   Fix: Include a directory map of all the steps that the user followed in the up right site of each section.

9. **H3. User control and freedom | Severity 2 |**
   When a certain recipe is selected there is no way for the user to navigate backwards or to go to the home page.
   Fix: Add a home or a back button

10. **H4. Consistency and Standards | Severity 2 |**
    The names of the options in the filter menu are the same with the names in the categories in the first page of the website. This might confuse the user about the things that need to be filtered.
    Fix: Change the names of the filter menu with more appropriate ones.

11. **H5. Error prevention | Severity 2 |**
    When a user search something in the search bar the website does not support a suggestion system for the search that the user wants to make.
    Fix: Implement a suggestion feature to the search bar in order to prevent errors.

12. **H5. Error prevention | Severity 2 |**
    When the user select a filter combination about a recipe that can not be applied to the particular recipe all the filters are still available to choose.
    Fix: Show to the screen only the relevant filters of the particular recipe to prevent errors in applying the filters.

13. **H6. Recognition not Recall | Severity 2 |**
    When navigate through the sections of the website the title of the sections does not presented in the top of the particular page. The user might forget the section that of the interaction after a long search in the website.
    Fix: Include a title of each section in the top of each page to remind the user about each section.

14. **H6. Recognition not Recall | Severity 2 |**
    When several filters are applied for a particular recipe the selections do not appear on the screen. The user could forget about the filters that were applied.
    Fix: Display the applied filters on the top right section of each page to inform the user about the selections.

15. **H6. Recognition not Recall | Severity 2 |**
    When a particular recipe is revisited the website does not inform that this recipe was viewed by the user before.
    Fix: Inform the user in the page of the particular recipe that this recipe was revisited.
16. **H7. Flexibility and efficiency of use | Severity 1 |**
    In the recipe pages of the website it might be nice to have some more pictures of each plate showing the result of the each recipe. This will give a more accurate idea of each recipe to the user.
    Fix: Add more images to the each recipe section of the website.

17. **H7. Flexibility and efficiency of use | Severity 1 |**
    It will be a nice touch if the website supported a review system in order to know the preferences of the different users of the website. Reviews will advise the user about the other users opinion in a certain recipe.
    Fix: Include a review area where the users can leave their comments about a recipe.

18. **H7. Flexibility and efficiency of use | Severity 2 |**
    A useful feature that the website could support would be a trending recipe section where all the trending recipes will appear to give new ideas to every user.
    Fix: Include a trending category to show to the users the popular recipes in the present time.

19. **H7. Flexibility and efficiency of use | Severity 2 |**
    In the recipe pages of the website it will be nice to have a bookmark button if the recipe was successful in order to revisit the recipe easily and implement it again.
    Fix: Add a bookmark button to mark a certain recipe in order to implement it again.

20. **H8. Aesthetics and Minimalist Design | Severity 2 |**
    The "Ingredients" should not be categories in the first page of the website as the user has to choose a recipe first in order to see the ingredients that are required to complete the recipe.
    Fix: Remove the "Ingredients" category from the first page and put it the filter options as is more appropriate.

21. **H8. Aesthetics and Minimalist Design | Severity 2 |**
    The filter button that is shown to the first page of the website indicates the same category options with those that are displayed in the first page of the website. This does not offer a help to the user as the same things are presented in the first page and the filter options.
    Fix: Remove the filter button from the first page of the website.

22. **H8. Aesthetics and Minimalist Design | Severity 1 |**
    The website opens with showing the available categories that the user can interact with small category buttons that do not fill the whole area of the page.
    Fix: Make a more interesting home page with larger category buttons that fill the page.

23. **H9. Help Users Recognize, Diagnose, and Recover from Errors | Severity 2 |**
    When a user search something in the search bar and the website does not support this particular search the user does not get informed through a message.
    Fix: Inform the user with a pop up message about an irrelevant search.

24. **H9. Help Users Recognize, Diagnose, and Recover from Errors | Severity 2 |**
    When a user search something in the search bar and the website does not support this particular search the user does not get informed through a message.
    Fix: Inform the user with a pop up message about an irrelevant search.
25. **H9. Help Users Recognize, Diagnose, and Recover from Errors | Severity 1 |**
    When a user searches for an exact recipe that it was on the website before and now can not be found.
    Fix: Inform the user with a message that the recipe was removed from the website.

26. **H10. Help and Documentation | Severity 3 |**
    Once the website is loaded there is not a help indicator to show to the user how to use the webpage and how to navigate through it.
    Fix: Include a help button to guide the user through the sections of the webpage.

27. **H10. Help and Documentation | Severity 3 |**
    On the search bar and the filter button there is not a clarification about the things that are available for search or the filters that can be applied to the website.
    Fix: Add a help button to the navigation bar of the website to inform the user about the capabilities of the search bar and the filter button.

3.Summary Of Violations

Category	# Viol. (sev 0)	# Viol. (sev 1)	# Viol. (sev 2)	# Viol. (sev 3)	# Viol. (sev 4)	# Viol. (total)
H1. Visibility of System Status	0	2	1	0	0	3
H2. Match Between System & Real World	0	1	1	1	0	3
H3. User control and freedom	0	0	2	1	0	3
H4. Consistency and Standards	0	0	1	0	0	1
H5. Error prevention	0	0	2	0	0	2
H6. Recognition not Recall	0	0	3	0	0	3
H7. Flexibility and efficiency of use	0	2	2	0	0	4
H8. Aesthetics and Minimalist Design	0	1	2	0	0	3
H9. Help Users with Errors	0	1	2	0	0	3
H10.Help and Documentation	0	0	0	2	0	2
Total Violations by Severity	0	7	16	4	0	27

Severity Ratings

0 - don't agree that this is a usability problem

1 - cosmetic problem

2 - minor usability problem

3 - major usability problem; important to fix

4 - usability catastrophe; imperative to fix

Summary Recommendations

To conclude, the overall product is very impressive and well made as a prototype but it will improve scientifically after implementing some recommendation ideas. Firstly, by improving the cosmetic errors of the product will vastly improve the website's user experience, like having bigger category buttons that fulfil the screen area of the website. More images that show each recipe in detail can be added to give a more specific idea about the result of a recipe. It is very important to have a beautiful interface to interact with as people are more inclined to use a website that is aesthetically pleasing.

Another recommendation is to remove some irrelevant categories like "Ingredients" and also use appropriate names for each category in order to explain in detail what the user is going to find by choosing the certain category. Once there are several recipes to choose from, a useful recommendation to the product is to make a category about dishes based off of different cuisines like "Chinese" or "Italian". This will make the navigation of the user more simple as the recipe of interest can be found without further exploration. It might also be a good idea to include a review section under every recipe that will inform the user about the opinion of other people who implement that particular recipe. Additionally, a bookmark feature for every recipe will be a useful addition as the users will be able to save their favourite recipes in order to revisit the and implement the again.

For the navigation in the website it will be useful if the search bar indicates some sample keywords to guide the user about who the search implements in the website and also prevent errors. Also, the filter options names have to be changed to more relevant ones like "Executions Time", "Ingredients" etc, as are the same with the category names and also remove the not applicable filters in some recipes to prevent errors. A back or a home button will be appropriate in every page of the website in order to navigate through the website. As for navigation a directory map will be useful to be included to the top of each page for the user to know the current section that the user is in the exact moment and a nice recommendation is also to be clickable as this will make the navigation easier in each layer of the website. Moreover, help buttons should be included to the website to guide the users that are not familiar with the website and explain how to navigate through it.

Overall, the product is intuitive and seems easy to use. It was really difficult to complete the heuristic evaluation on this product as it is such a good work. With the suggested recommendations will improve and become even more evolved.

Heuristics

H1: Visibility of System Status

- Keep users informed about what is going on

H2: Match Between System & Real World

- Speak the users' language
- Follow real world conventions

H3: User Control & Freedom

- "Exits" for mistaken choices, undo, redo
- Don't force down fixed paths

H4: Consistency & Standards

H5: Error Prevention

H6: Recognition Rather Than Recall

- Make objects, actions, options, & directions visible or easily retrievable

H7: Flexibility & Efficiency of Use

- Accelerators for experts (e.g., gestures, kb shortcuts)
- Allow users to tailor frequent actions (e.g., macros)

H8: Aesthetic & Minimalist Design

- No irrelevant information in dialogues

H9: Help Users Recognize, Diagnose, & Recover from Errors

- Error messages in plain language
- Precisely indicate the problem
- Constructively suggest a solution

H10: Help & Documentation

- Easy to search
- Focused on the user's task
- List concrete steps to carry out
- Not too large

Conclusion

The creation of digital products usually involves a range of roles and functions collaborating on a project. One of these is the creation of the low-fidelity part. The low-fidelity part was applied in this coursework to implement an easy tangible representation of our website in many design concepts. From those design concepts we would select one which we thought was best, based on the pros and cons it has and design the whole task flow of the website. Using this method, we would receive information about the structure created by setting up interviews for getting quick feedback to improve the product (in this case the website) and start coding and designing it. These prototypes are generally characterized by low technology implementation and were implemented on sheets of paper with pencil and online tools using (proto.io)

The final concept video is fairly different to the storyboard the reason to this is that there was unseen circumstances such as the weather. There was a slight alteration to the narrative, it still focuses on the problem with the exploreReading being the solution. However, the style of filming in terms of effects and angles has not change, the only amendment that was made was the location of the filming. A decision was made not to include the facts about the tourist site locations instead a text layer was included stating the name of the location. A further change was made to the narrative in terms of location, this was due to the weather not being applicable for filming. Instead the decision was to film inside the University due to the unforeseen circumstances. In doing this the narrative still has a consistent flow and focussed on the problem being solved.

A further improvement could have been made, in regard to demonstrating the features of the exploreReading. The concept video simply highlights the assistance it has provided the user and a solution to the problem. The concept video could have showcased the 3 specific features it has.

Appendix

Script for Testing

Participants

1. Navigate in the home page

    1a. Go to the image page

2. Navigate in the image page

    2a. Click on the image and go back

    2b. Use google maps

3. Go back to the home page

Raw Data

Participant #1

1. Navigate in the home page (“Very good” , 2 seconds)

    1a. Go to the image page (“Very good”, 3 seconds to figure it out based on the layout of the website)

2. Navigate in the image page

    2a. Click on the image and go back (“Very good”, 2 seconds)

    2b. Use google maps (“Very good” but clicked on the maps to open in new window. Told her that it is just static there)

3. Go back to the home page (“Ok”, was clicking on the logo to go back and then clicked on the back button on the website, 6 seconds. Figured it on her own no questions asked).

Participant #2

1. Navigate in the home page (“Very good” , 3 seconds)

    1a. Go to the image page (“Very good”, 2 seconds to figure it out based on the layout of the website)

2. Navigate in the image page

    2a. Click on the image and go back (“Very good”, 2 seconds)

    2b. Use google maps (“Very good” but clicked on the maps to open in new window. Told her that it is just static there)

3. Go back to the home page (“Ok”, was clicking on the logo to go back and then clicked on the back button on the website, 7 seconds. Asked why it wasn’t going back and we told her).

Participant #3

1. Navigate in the home page (“Very good” , 4 seconds)

    1a. Go to the image page (“Very good”, 3 seconds to figure it out, asked us first to clarify due to the layout of the website)

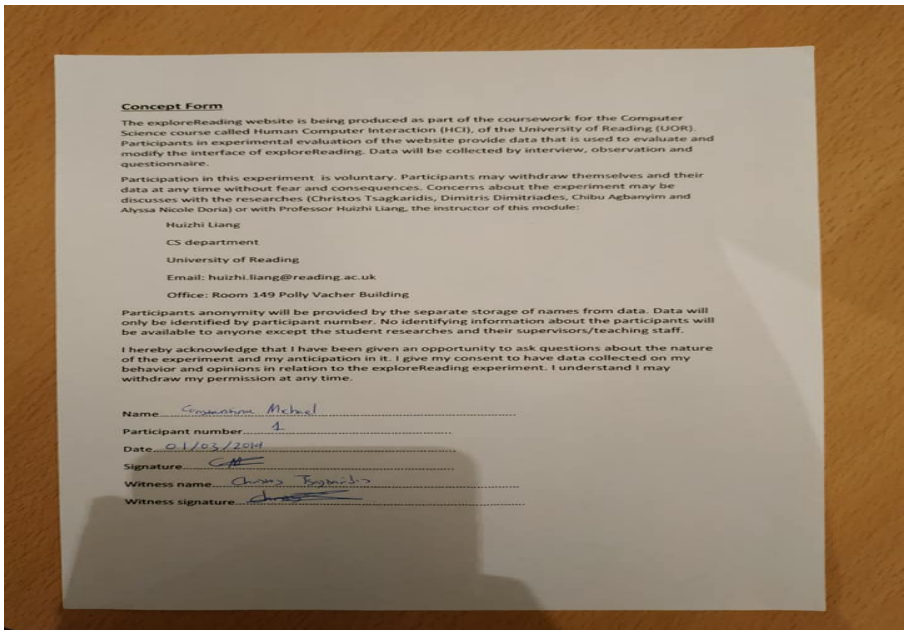
2. Navigate in the image page

    2a. Click on the image and go back (“Very good”, 2 seconds)

2b. Use google maps (“Very good” 3 seconds, but clicked on the maps to open in new window. Told him that it is just static there)

3. Go back to the home page (“Very good”, clicked straight away on the back button).

Consent Form of Participant #1



Concept Form

The exploreReading website is being produced as part of the coursework for the Computer Science course called Human Computer Interaction (HCI), of the University of Reading (UOR). Participants in experimental evaluation of the website provide data that is used to evaluate and modify the interface of exploreReading. Data will be collected by interview, observation and questionnaire.

Participation in this experiment is voluntary. Participants may withdraw themselves and their data at any time without fear and consequences. Concerns about the experiment may be discusses with the researches (Christos Tsagkaridis, Dimitris Dimitriades, Chibu Agbanyim and Alyssa Nicole Doria) or with Professor Huizhi Liang, the instructor of this module:

Huizhi Liang

CS department

University of Reading

Email: huizhi.liang@reading.ac.uk

Office: Room 149 Polly Vacher Building

Participants anonymity will be provided by the separate storage of names from data. Data will only be identified by participant number. No identifying information about the participants will be available to anyone except the student researches and their supervisors/teaching staff.

I hereby acknowledge that I have been given an opportunity to ask questions about the nature of the experiment and my anticipation in it. I give my consent to have data collected on my behavior and opinions in relation to the exploreReading experiment. I understand I may withdraw my permission at any time.

Name [illegible] Michael

Participant number 1

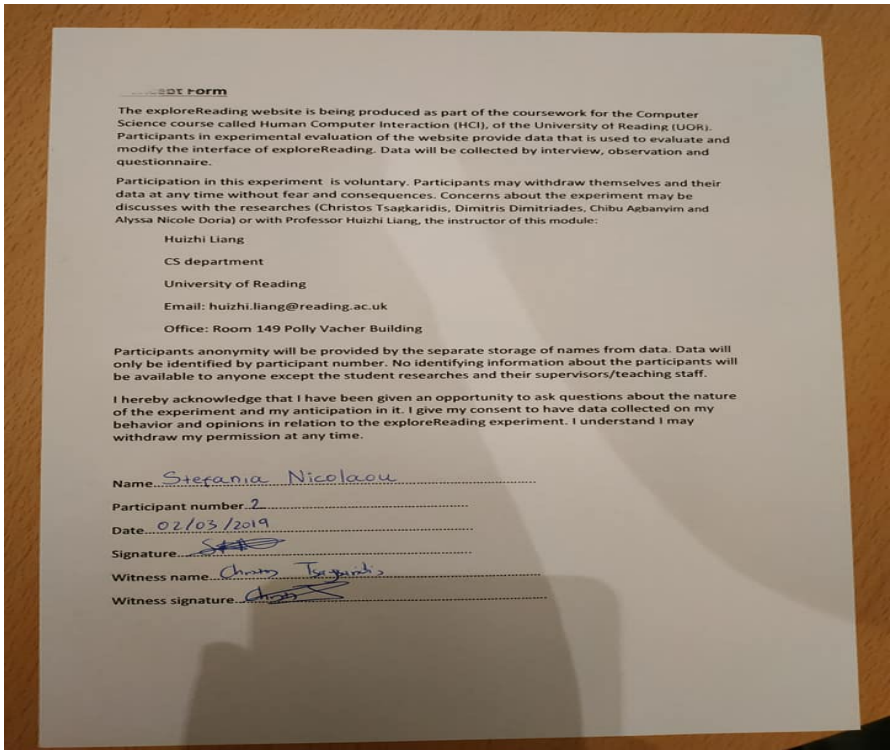
Date 01/03/2019

Signature [signature]

Witness name Christos Tsagkaridis

Witness signature [signature]

Consent Form of Participant #2



[illegible]orm

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Name Stefania Nicolaou

Participant number 2

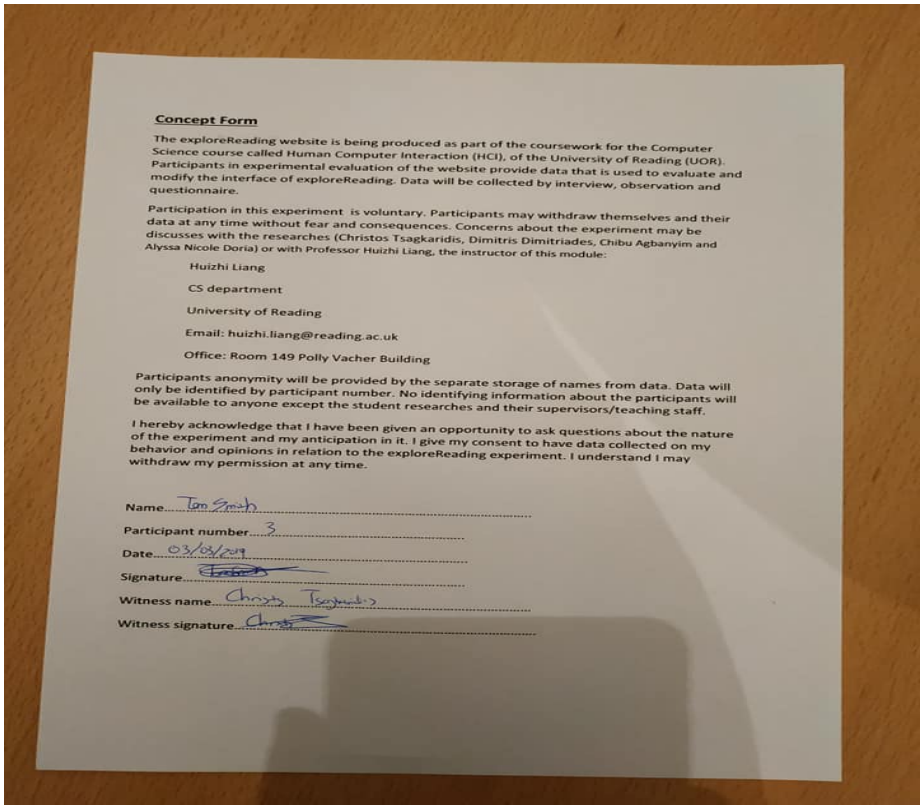
Date 02/03/2019

Signature [signature]

Witness name Christos Tsagkaridis

Witness signature [signature]

Concept Form of Participant #3



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I hereby acknowledge that I have been given an opportunity to ask questions about the nature of the experiment and my anticipation in it. I give my consent to have data collected on my behavior and opinions in relation to the exploreReading experiment. I understand I may withdraw my permission at any time.

Name Tom Smith

Participant number 3

Date 03/05/2019

Signature

Witness name Christos Tsagkaridis

Witness signature