uOttawa

University of Ottawa

GNG 1103: Engineering Design

Deliverable F: Prototype I and Feedback

Project Group C12

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March 7, 2021

1. Introduction

In previous deliverables we worked hard to plan out and design every aspect of our application. Now, In deliverable F, we will look at the creation of our first prototype. This includes the building, planning, and testing of our app. Our prototype will be tested multiple times to ensure everything runs smoothly. This deliverable will help us create a better app with each new prototype until the final product is completed. With each new prototype we hope to improve on all aspects of the app, whether it's the functionality of our main features, or improving on the user friendliness, each new prototype will be a step in the right direction.

2. Prototype 1

2.1 Item Scanner

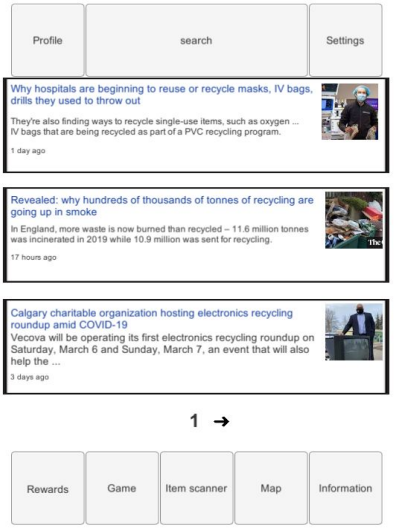
The item scanner acts as both our main feature and home page. This feature will use the camera to scan items, so there is the camera button in the middle of the screen. All other apps can be accessed from this feature.

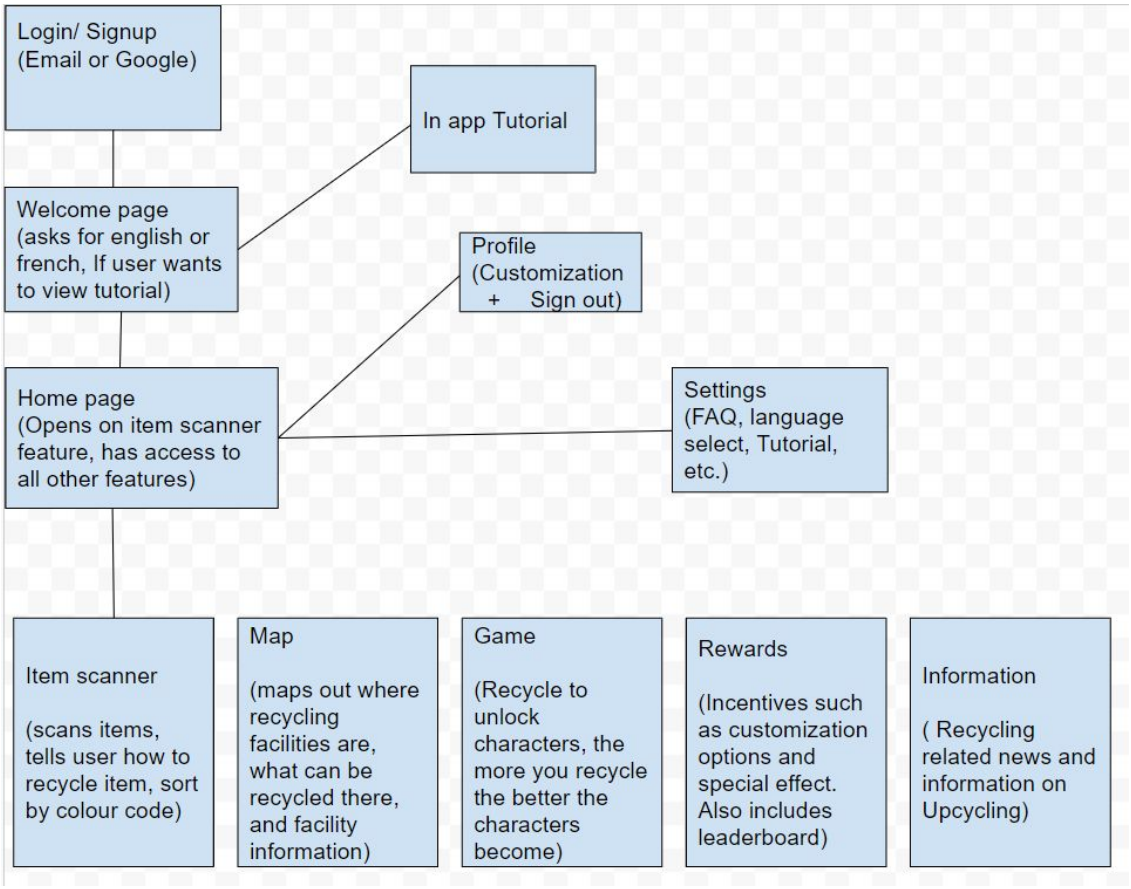
2.2 Settings

The settings feature allows users to access language controls, The FAQ, The tutorial, and any privacy settings.

2.3 Information

This feature lists news articles about the recycling world and upcycling. Each article is clickable for further information. All other features are accessible from this feature.





3. Prototype Test Plan Outline

Our first prototype is a very simple concept. It displays only a few of the intended features of the application. Our goal for prototype 1 is primarily to gain a broader understanding of Unity and Vuforia and determine which features are feasible and how much time each of them will require to develop. In the end, there is a main screen, a settings button, item scanner and information button.

We have assigned tasks to each member - some tasks were accomplished and others will require more time than anticipated. Unfortunately, there was not enough time to gain feedback on what we have created so far but in reality, there was not much produced. We had hoped to have had a more developed program, but with the limited participation on Unity this was not the case. Before we proceed with prototype 2, we will seek feedback from family members on the applications user friendliness and efficiency. This feedback will give us further insight on which features are most desirable and which need improvement. Furthermore, we will get feedback from Mr Bouchard on this prototype which will be implemented in prototype 2.

Thus far we have learnt a lot about Unity and Vuforia and the features available. With the few scenes created, we will be able to develop on them and improve their efficacy and esthetics. We have created text boxes, inserted articles, inserted a few recognizable images, implemented the AR Camera, created buttons and succeeding scenes as well as downloading asset packages. Most of these features required codes and additional functions which is what took the most time. For prototype 2, we will work more closely with the TAs and start our research ahead of time. For the most part, we now know which components are needed for which features and where to find these components, reducing the time required for setting up the program. We will also continue to seek feedback and critique.

4. Analysis

In our first prototype, we were able to create the basic components of our app. The features and functions we created for this prototype are essential for the future of our project. With that being said, we are still a long way from the final product. We managed to build the buttons, each feature's scene (without expanding on the scene), Our Item Scanner, and our information page. Unity has been a bit of a challenge for us, but after struggling with the buttons, we have become more comfortable with the software. Creating the info page went very smoothly compared to some of the earlier functions we struggled with. With this knowledge, we will spend more time working on the unity features that we struggled with, allowing us to build the app to the best of our abilities without worrying about time constraints.

5. Feedback and Results

This prototype is not as developed as we had wished it would be but we have developed a few scenes. Features such as buttons and icons and the AR camera were implemented, but they require improvements.
Due to the amount of time required to develop the features and scenes for this prototype, we did not have enough time to seek feedback before this deliverable was due. For prototype 2, we will seek feedback from the TAs, family members and peers. We will specifically be looking for information on the efficiency of the application features. This will allow us to improve on user friendliness and the accuracy of the application.

From the conceptual art of the group's app design, the feedback from the client Mr. Bouchard was thorough and appreciated. He highlighted concerns with incentives and ongoing maintenance—the promotion of use and updating of software are paramount for the technological scene. An interest in the app would best target a wide demographic audience—and therein recognize that the simplicity of use and rewarding experiences are critical for mass appeal. Recycling is an international known practice: hardly anyone is excluded. Furthermore, whether the incentives stem from financial gains or collecting token items, there may require the partnering with a financial backer or the permitting of

adverts on the app's screen. On the topic of permission, mobile hardware and licensing could hinder the feasibility of a proposed feature, such as the usage of the camera and mapping locations. Compounded with the restriction of time allotted to design a finished app, a hierarchy of importance in features for the app needs to be considered: with what features are we willing to part, if necessary. What are absolutely required? And what features are merely optional or like cherries on a sundae? Ultimately, for the capacity of the app, two main functions are asked from Mr. Bouchard: Identify a material as recyclable or waste and, subsequently, locate its proper receptacle.

6. Conclusion

Overall, we learnt a lot about Unity and Vuforia. In fact, we spent most of our time learning about the programs and which features of our application will be feasible, which will require additional time and which will be most successful. Although we were not able to gather feedback from potential users, we have implemented a plan to gather reliable and adequate feedback before proceeding with prototype 2. We will continue to work on the efficiency and thoroughness of our app features. Scenes will become more and more complex and elaborate. Each member will be responsible for certain scenes and functions which will render the development process easier.