



uOttawa

University of Ottawa

GNG 1103: Engineering Design

Deliverable G: Prototype II and Customer Feedback

Project Group C12

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Project Deliverable G

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1. Introduction

Creating prototype 1 built up the basics of our application as well as some preliminary features such as our settings page and information page. Now, with the completion of prototype 2, we have added our main features, such as the AR camera and map, as well as improved the general look and feel of our application.

2. Results from Prototype I

Presentation for Client Mr. Bouchard, in audience of Professor Majeed and class

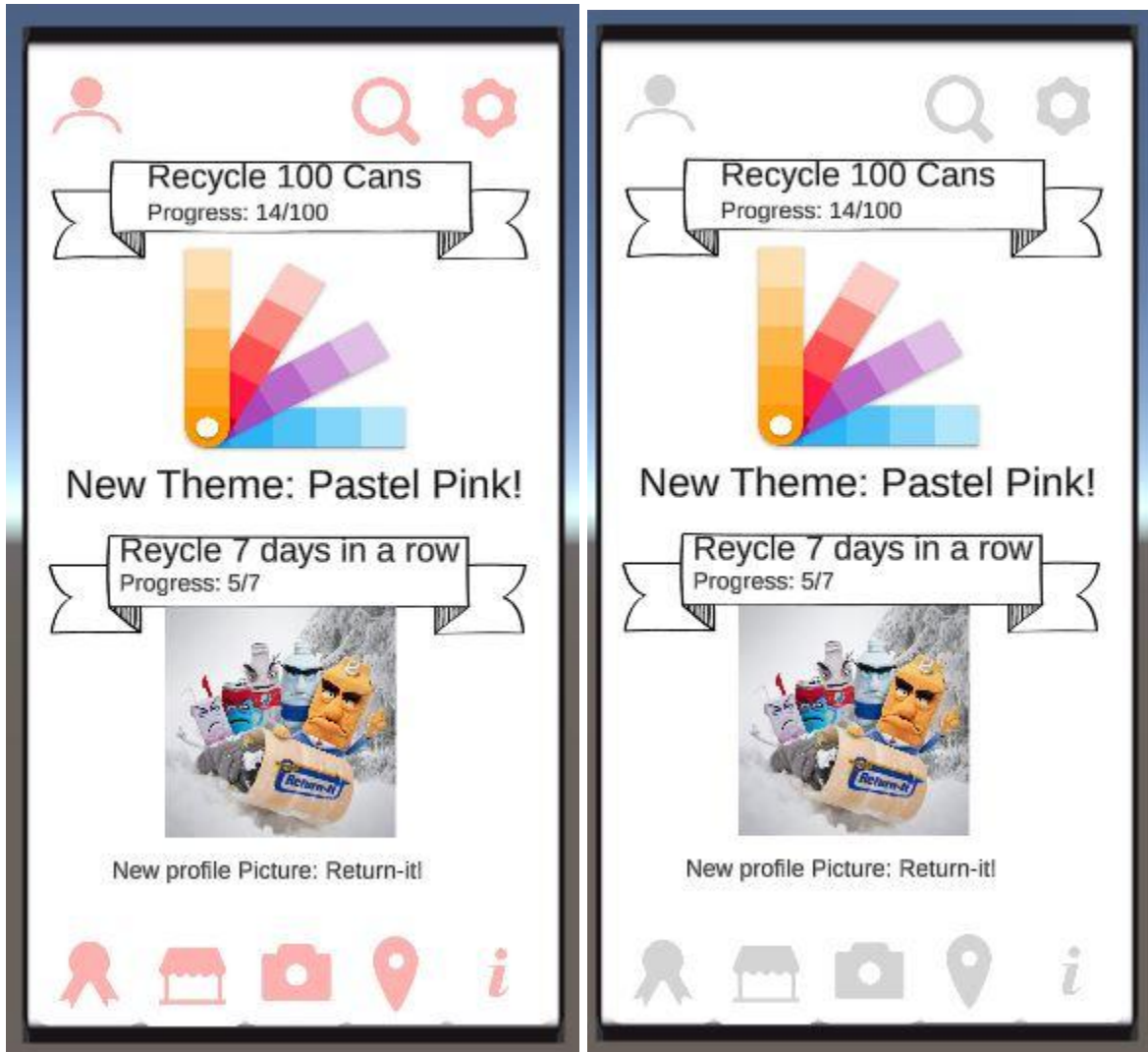
The premise of our project design, in its segmented form, was toured before the 68-person audience, as narrated by group member Cole Schieman. The major components were briefly – yet competently – explained, consisting of the item scanning and the recycling facility locating. Most importantly, Schieman demonstrated the uniqueness in this app – what sets this design apart from that of the many other groups. The encouragement for recycling shall reside in the playfulness of a game: A “Pokemon Go”-inspired interaction between the users and their environment. When the app has been opened, with the camera in view of an object, the user will be prompted by an optional screen (scene) to transport a virtual representation of that same object into the rightful receptacle. With a swipe of the finger from the user, the targeted object, as a caricature in the lower left corner, can be thrown into a bin in the upper right corner. Accuracy matters. Interest in the app may therefore stem from the creative design of the caricatural representations of the various recyclable materials, as well as from the capability of the user to level up these characters upon repeated collections and earn rewards by reaching milestones, like managing to “capture” 100 cans. The app embraces the gamer attributes of competitiveness and addictively collecting items. Schieman displayed the concepts for the app with screenshots from the Unity program, overlaid with smartly chosen descriptions.

The client Mr. Bouchard was brief with his comments. Given the constraint of 5 minutes, wherein the presentation for the group’s app was expected to carry for 2-3 min and the remainder for feedback, and the demand on the audience’s attention through the repetition in hearing the proposals from all groups on the same one project, Mr. Bouchard was understandably brief. He spoke of intrigue in the “Pokemon Go”-like design but concern over the group’s ability to finish it by the deadline. Group member Cole Schieman assured the client that such a risk was unlikely. Overall, the group netted a positive response: “Looking forward to seeing that,” Mr. Bouchard concluded.

3. Prototype II

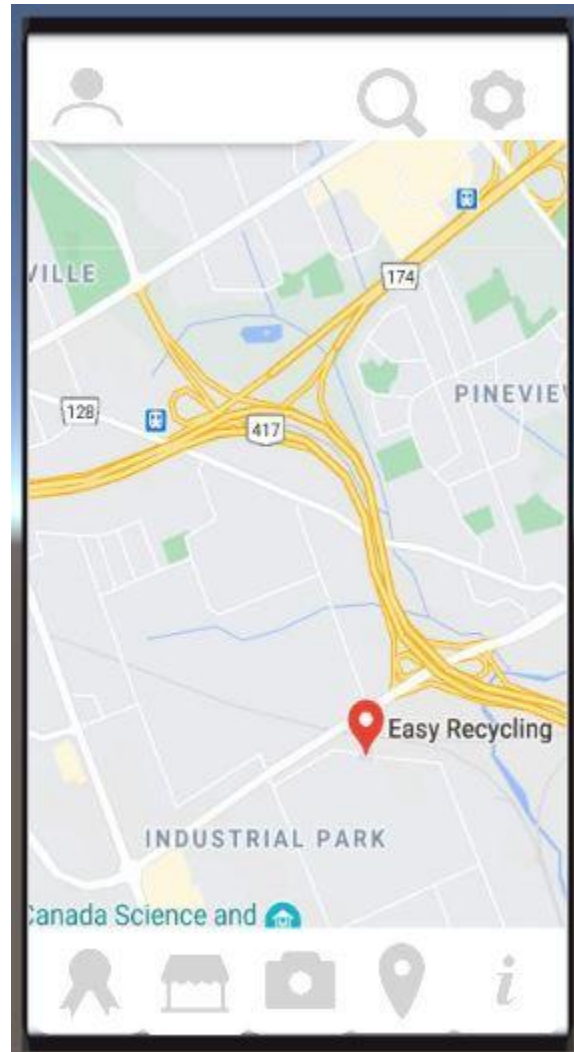
3.1 Rewards

The rewards page showcases challenges and achievements for users to complete. Upon completion of these challenges users are given a reward as shown below. These rewards are customization features such as new themes, icons, and special effects.



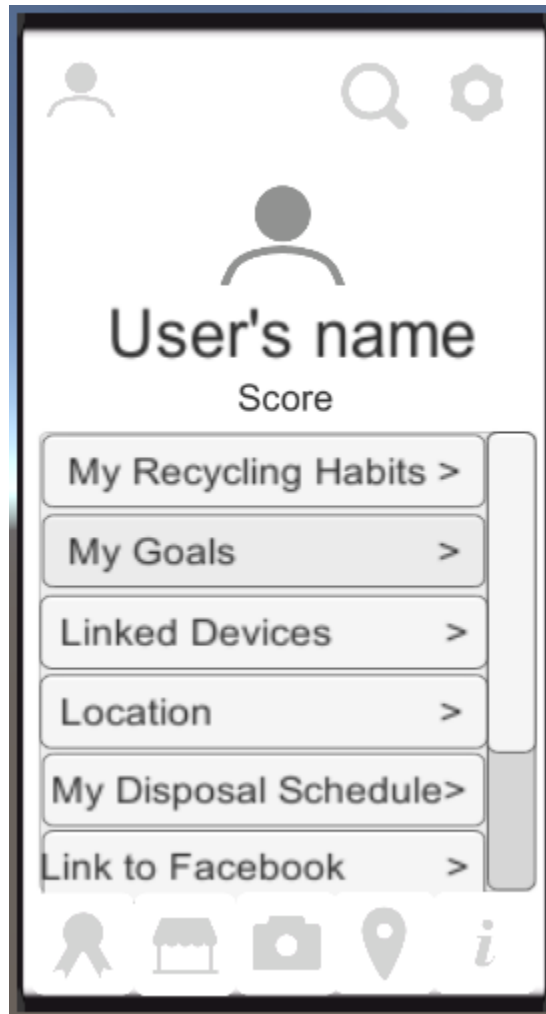
3.2 Map

This feature allows users to find any nearby recycling facilities or recycle bins in an easy to use map feature. We are hoping to add a pop-up feature that informs users of hours and other practical knowledge when they click on the location.



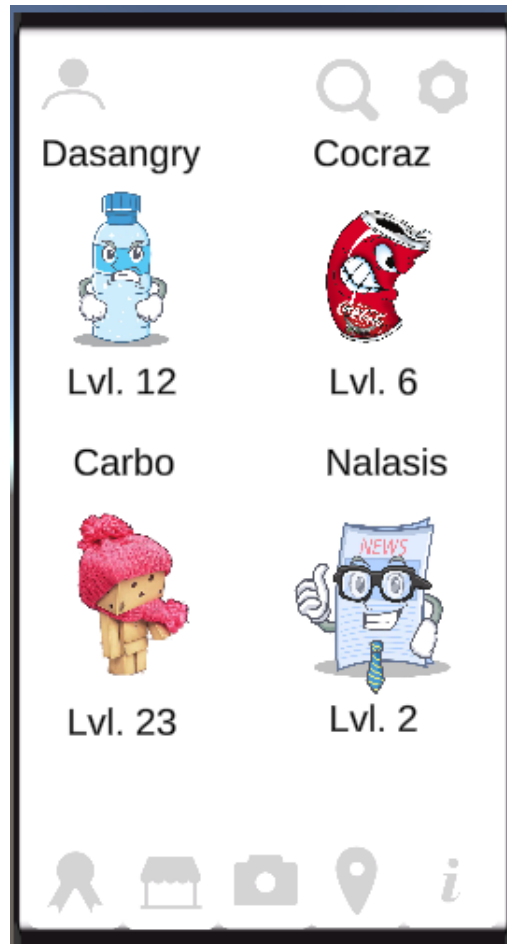
3.3 Profile

The profile feature allows users to link devices, view their habits and their goals, as well as all customization features.



3.4 Character page

This page showcases the characters unlocked through the game feature. As you unlock more characters, the page fills and you are able to swipe downwards.



4. Feedback and Results

During the subsequent laboratory session, a meeting with the teaching assistants was held: They wished to view the progress that the group had accomplished with the design project, in the scope of the Unity program. An intermediate model, set between prototype I and prototype II, was analyzed – the item scanning function and accuracy, map design, settings page, and game interface had been adjusted since the presentation, for the easing of use and for better aesthetics. The teaching assistant Ebin managed a thorough housekeeping of the design on a technical level, ensuring scenes and buttons were active and accessible. His help was most welcome. As recommended by the teaching assistants, upon the conclusion of the meeting, the addressed technical issues were repaired by group members Melissa Helm and Cole Schieman in that present week. Now, the wind in the sails is stronger and the waters are less choppy.

5. Analysis

While our expectations for prototype I were a little high, the one week extension on prototype II allowed us to not only fulfill our intentions for the first prototype but also create and refine all the desired scenes. For the camera scene, we were able to align the camera properly and scan multi-target items. A few buttons in the profile and settings scenes are now functional and open the desired URLs. By prototype III, we would like to have all the buttons functioning, though we realize that some may be more sophisticated than permissible by our given deadlines. We have also developed the map scene where the University of Ottawa campus map is displayed and location icons are displayed where recycling and disposal facilities are located. The icons are buttons that will, in prototype III, open information about the accurate locations and available bins. We spent a decent amount of time on the game scene but it has not come together as quickly as we had hoped. So far, we have developed game unique characters and scenes that allow the user to navigate through them. Since there are only two team members working on the app development, the process has been very time consuming. So far each member has worked on their own scenes but for prototype III, the enhancement of the game scene and map scene will be shared amongst both members.

6. Next Steps

For the final prototype, we will work on expanding our image recognition database as well as the item specific pop up information planes. The planes will be refined by adding supplementary information such as which components need to be broken down or removed from the item intended for recycling. In addition, we will work on the game scenes and its accessibility from various locations within the application. For instance, when a user scans an item, we hope to include a button that allows them to head straight to the game to simulate the proper disposal of the recyclable. We would really like to have a fully functioning game that consists of more than a couple levels but with time restraints this may have to be a future development. The map scene is mostly complete but we would like to make it more accurate by adding additional recycling location icons. Last but not least, we would like to expand the rewards scene. This would include but is not limited to additional goals and incentives as well as perfecting the scanned item count. These improvements would allow us to meet not only the clients needs but also his desires.

7. Conclusion

In conclusion, our second prototype was built following a specific plan and has turned out quite well. Although we struggled with our first prototype we managed to turn it into something we can be proud of. As we push towards our final prototype, we hope to improve our current feature and raise our application to the next level. We plan on taking peer and user feedback into consideration to make the best app possible.