GNG1103

University of Ottawa: Faculty of Engineering

Project Deliverable C: Design Criteria and Target Specifications

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Group 4

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Introduction

Following the client's meeting and the creation of needs and requirements requested by the client, the group determined the most important and vital requirements and the requests that are not so valued. These were identified in the last deliverable, deliverable B. By assigning each of the needs a number based on their importance and significance, the group could value certain requirements more than others. In this deliverable, the goal is to design a list of prioritized design criteria and perform technical benchmarking of three similar applications to designate target specifications. The design criteria are broken down into needs, constraints, as well as functional and non-functional requirements. All of this will allow the group to conclude what is the ideal application.

Design Criteria

Needs

#	Needs From the App	Significance (1 - not important, 10 - very important)	Difficulty (1 - easy, 10 - Very hard)	Design Criteria	Criteria
1	Encompass the simple household objects to recycle (IE: cardboard, types of metal)	10	9	Recognize basic objects	Recognise thinks like aluminum coke cans
2	High success rate of actually getting things in the right bin (around 95%)	10	9	Success rate	Have a high success rate of identifying materials
3	Needs to sort the different materials correctly	10	9	Able to identify materials	Can recognize where materials go into what bin
4	On the largest platform (IOS)	10	8	Platform	Able to function on IOS
5	Friendly User interface	9	9	Interface	It has to be easy to use and not look unappealing

6	Clarify which bin is which	9	9	Bin Laws	Clarify which bin is for what kind of recycling (IE: black bin for paper)
7	Has to have a reward for using (like a game)	8	7	Reward System	Appealing and Motivational
8	Needs built-in training	6	4	Training	How to teach users how to use the app in general
9	Needs to encourage cleaning the waste first	5	2	Reward System	Notify the user to recycle
10	The app will incorporate the use of AR or VR.	9	9	Vision System	It Will allow the user to use their camera to determine what goes where

TABLE 1.1 Needs from Design Criteria

Constraints

1. Camera availability and quality
2. Platform (IOS or Android)
3. Locational Differences (Ottawa's Laws vs Other cities laws)
4. App Size (MB? GB?)
5. Cost ($)

Functional and nonfunctional requirements

Functional Requirements	Non Functional Requirements
• App has a high success rate • Needs to recognize basic objects • Needs to use a proper camera • Needs to work on the chosen platform • User-Friendly interface	• Built-in training • Reward system • The application is set up like a game. • Calendar for your recycling schedule

TABLE 1.2 Design Criteria and Constraints

Benchmarking

When doing research of our competitors, we came across 3 different apps that offer similar features to the app that we would like to create. These three apps fulfil most of the needs created by the customer.

	Competition Applications		
Specifications	**Region of Waterloo Waste Whiz**	**Recycle Coach**	**Ottawa Collections Calendar**
Developer	**Region of Waterloo**	**Municipal Media Inc.**	**City of Ottawa**
Age Rating	4+	4+	4+
Size	69.2 MB	40.7 MB	69 MB
Platform	IOS, Android	IOS, Android	IOS, Android
Game	Sorting Game	No	No
Sorts Material	Yes	Yes	No
Explains Bin Colours	Yes	Yes	Yes
AR/VR Capabilities	No	No	No
Add-Ons	Displays collection calendar	Displays Collection calendar Displays drop off locations	Displays collection calendar Notifies about drop off locations

TABLE 2.1 Benchmarking of Recycling Sorting Apps using Design Criteria

	Competition Applications			
Specifications	**Importance**	**Region of Waterloo Waste Whiz**	**Recycle Coach**	**Ottawa Collections Calendar**
Age Rating	1	3	3	3
Size	2	1	3	2
Platform	5	3	3	3
Game	3	3	1	1
Sorts Material	5	3	3	1
Explains Bin Colours	4	3	3	3
AR/VR Capabilities	5	1	1	1
Total	n/a	61	59	47

TABLE 2.2 Benchmarking of Similar Products using Design Criteria

Conclusion

Although there are not so many applications similar to the product sought to be made, apps are comparable to the client's desires. These apps, designed by the Region of Waterloo, Municipal Media Inc., and the City of Ottawa, were benchmarked. Following this process, it was concluded that the Region of Waterloo Waste Whiz app is the optimal app on which to base our product. Thus this app designed by the Region of Waterloo will be used as the main reference in developing the application. The product to be developed is hoped to surpass a score of 61.