Design Criteria & Target Specifications

DELIVERABLE C

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1.0 Intro

Highlighted in this document are the design criteria in the table list format based on deliverable B's interpreted needs. This list includes the prioritized design criteria's, functional and non-functional requirements as well as constraints. Included in the document is also a brief section on technical benchmarking used in this project. The technical benchmarking will be a small specifications table that analyzes the app and design specifications while integrating general analytics.

2.0 Design Criteria

	Need	Design Criteria	Functional/Non-Function
Price	The app will be free	Low Cost $ (# of Sponsors, # of Ads) Available for free (Users)	**Non-Function**
	The app will have subscriptions and with these subscriptions will be the option to receive incentives.	Promotion (Sponsor) Discount (Sponsor) Giveaways (Sponsor)	**Non-Function**
	Our mission is to increase recycling and you are free to subscribe in promoting us and helping the fight against global warming.	Available for free (Users) Increase Recycling Increase recycling education	**Function**
Goal	We identify success by the increasing of recycling through our in app progress report.	Ability Tracking recycling Data on the rate of recycling per person (comparison)	**Function**
	To reduce the misplacement of unrecyclable material.	Simplify recycling Eliminate memorization Educate	**Non-Function**
Compatibility	The app will be as accessible as possible, cross platform is the goal	Compatible with as many platforms as possible Bilingual	**Function**
	We will prioritize the platform with the most users, to be most effective.	iOS platform compatible	**Function**
Target Consumer	The recycling industry targets house holds, for the time being that is the target.	Target the biggest demographic	**Function**
Location	We will start locally in Ottawa and expand with time.	Pilot in Ottawa	**Function**
Innovation	Our goal is to introduce a new app that is not in the market.	Innovative	**Non-Function**
User Friendly	One of the main keys of success is the ease of use where anyone with access to the app can use it.	Simplicity Accessible everywhere	**Function**
	Our key corner stone is simplicity for use	User Friendly	**Function**
Accuracy	We achieve to reach 95% detectability which is the most you can achieve without error.	Level of accuracy of recycling	**Function**
Performance	A back end system will be implemented to track consumer progress.	Accurate data gathering	**Function**

	The app uses your smart phone or tablet camera to scan the object.	Requires a smart device	**Non-Function**
Education/ informativity	Our application uses games to educate our consumers more about recycling.	Engaging Enjoyable to use	**Function**
Configuration	The recyclable material will be held up to your phone camera to scan. If the object does not scan you can always scan the recycling symbol at the bottom of most plastics. Once the product is scanned, it will indicate to with a green or red light indicating if it is recyclable or not.	User Friendly Simple Instruction Speed (T) Reliability Accuracy	**Function**
Engagement	We will attract many consumers through apps and games making it fun for our users.	Retention	**Function**

3.0 Technical Benchmarking

The app will be developed mainly through the Unity program. Unity is a popular game engine that is free to most users. Its primary purpose is to design and develop games but has many other features, such as, in this case, app design. [1]

Unity offers the option of rapid development to assist with quickly building an app and requiring less coding. It also allows android testing to see how your app will behave before finalizing it. Unity will be used to integrate cross-platform as it allows users to convert their apps to iOS or Windows base with little ease. Nongame apps are quickly developed through the canvas features and building interactivity efficiently. [2]

To determine if Unity is the proper program for the app to be developed, it is compared to different competitors. This can help determine the pros and cons of each program and give a better understanding of the better software. We decided to compare Unity against Godot, and Maya.

The following tables will be color coded in order to distinguish its importance for the design phase.

Importance Legend	1	2	3	4	5

Specification	Importance	Scale	Unity	Godot [3]	Maya [4]
Open Source	2	Yes or No	Yes	Yes	No
Price	3	CAD	FREE	FREE	$205/month
Operating System Compatibility	4	Systems Compatible with	Windows MacOS Linux	Windows MacOS Linux	Windows MacOS Linux
2D and 3D	3	2D or 3D	Both	Both	3D
Phone compatibility	4	Type of Phones	iOS Android	iOS Android	None
Learning Curve	5	Hard (1) – Easy (5)	5	5	2
User Friendly	4	1-5	5	4	3
Code Language Diversity	4	1-5	5	5	1
Industry Usage	2	1-5	4	2	5
TOTALS			44	41	20

By following the criteria of our importance scale, it can be determined that Unity is the best software to be used in order to satisfy our needs in developing the app.

4.0 Target Specifications

Design Specifications	Relation (=, < or >)	Value	Units	Verification Method	Importance
Functional Requirements					
1. Ability Tracking recycling	=	1-5	N/A	Test	4
2. iOS platform compatible	=		iOS	Test	4
3. Pilot in Ottawa	=	Yes	Ottawa	Test	5
4. Simplicity	>	4	N/A	Test	5
5. Level of accuracy of recycling	>	Yes	Percent	Test	4
Constraints					
1. Requires a smart device	<	Yes	N/A	Test	3
2. Speed (T)	<	Yes	Time	Analysis	3
3. Available for free (Users)	=	Yes	$	Estimate	3
4. Accessible everywhere	=	Yes	Cloud/Online	Test	3
Non-Functional Requirements					
1. Incentives	<	Yes	$	Estimate	2
2. Data on the rate of recycling per person (comparison)	=	Yes	N/A	Test	4
3. Simplify recycling	=	5	N/A	Test	5
4. Innovative	<	Yes	N/A	Test	3
5. User Friendly	<	Yes	N/A	Test	5
6. Reliability	=	4	N/A	Test	4
7. Educate	>	5	N/A	Test	5

5.0 Conclusion

To conclude, the design criteria are developed to analyze design solutions and design goals while ensuring all needs are interpreted with a corresponding design criterion. The table is used as a guide during essential project milestones or meetings to keep track and ensure design criteria are still intact. The benchmarking allowed us to evaluate the Unity app as the sole competitor between all development programs as it delivers the most efficient and fast development processes. The specifications tables allow coordinating design criteria with the Unity app to ensure it meets the high importance criteria.

6.0 References

[1] What is Unity 3D & what is it used for? (2019, March 14). Retrieved February 07, 2021, from https://conceptartempire.com/what-is-unity/

[2] What is Unity 3D & what is it used for? (2019, March 14). Retrieved February 07, 2021, from https://conceptartempire.com/what-is-unity/

[3] Godot Feature (2021). Retrieved February 07, 2021, https://godotengine.org/features

[4] Maya Autodesk (2021) Retrieved February 07, 2021, https://www.autodesk.com/products/maya/overview?term=1-YEAR&support=null#0