SYNTHETIC SOLUTIONS INC.

Project Deliverable E: **Project Schedule and Cost**

GNG 1103 – Engineering Design

Faculty of Engineering – University of Ottawa

Team C01-1

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Abstract

In the previous deliverable, four conceptual designs were explained and used as benchmarks for the group's conceptual design. For this deliverable, the team created a project plan for the design's execution, with a Gantt chart to come with it and a risk assessment for each section of the app with its corresponding contingency plan. Lastly, the bill of material concludes the execution of the design will be free of cost.

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Introduction

Based on the collaborative concept that was designed in the last deliverable, the next steps were then taken towards creating a working recycling app that fits all the design criteria and client needs. That is why this deliverable includes an overview of the projects agreed upon design concept, plan and schedule, risk assessment, and expected cost. By creating these documents before beginning to make prototypes, this will allow the group to be able to follow a plan and reference anything easily as needed.

Design Concept

Figure 1 below shows the group design for the recycling app called Geco. Off the home page it features an image scanner which leads to an incentivization system, a mini game section with two educational games, and an information page.

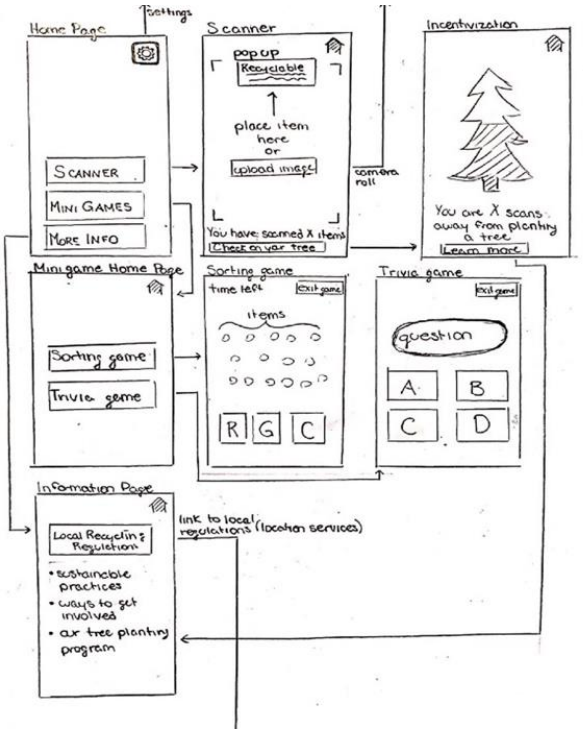

Figure 1: Design Concept

Project Plan and Schedule

Each task is assigned flexibly to account for any deterrents or obstacles that may or may not hinder the completion of the task. Dependencies are based on any previous task that affects the starting of another task and are only assigned when tasks are directly connected to one another. For example, a deliverable, which is a milestone, is dependent on all the previous tasks and has no direct dependencies; but a task such as acquiring feedback to build a prototype depends directly on the research stage. The owner of each deliverable is also responsible for submitting it.

TASK NUMBER	TASK	DEPENDENCIES	OWNER	DURATION	DUE DATE
1	Deliverable E: Project Schedule and Cost	None	Ben	Milestone	28/02/2021
2	Research and development of Unity	None	Everyone	7 days	04/03/21
3	Build Prototype I	#2	Everyone	10 days	06/03/21
4	Deliverable F: Prototype I and Customer Feedback	None	Camila	Milestone	07/03/2021
5	Client Meet 3: Prototype I Presentation	#2, #3, and #4	Everyone	1 day	12/03/2021
6	Client Feedback and iterative prototyping for Prototype II	None	Everyone	7 days	13/03/2021
7	Deliverable G: Prototype II and Customer Feedback	None	Angie	Milestone	14/03/2021
8	Iterative prototyping for Prototype II	#6	Everyone	14 days	27/03/21
9	Deliverable H: Prototype III and Customer Feedback	None	Lilly	Milestone	28/03/2021
10	Deliverable I: Design Day Presentation Material	None	Ben	Milestone	08/04/2021
11	Deliverable J: Project Presentations	None	Angie	TBD	TBD
12	Deliverable K: User Guide	None	Lilly	Milestone	11/04/2021

Table 1. Project Plan and Schedule

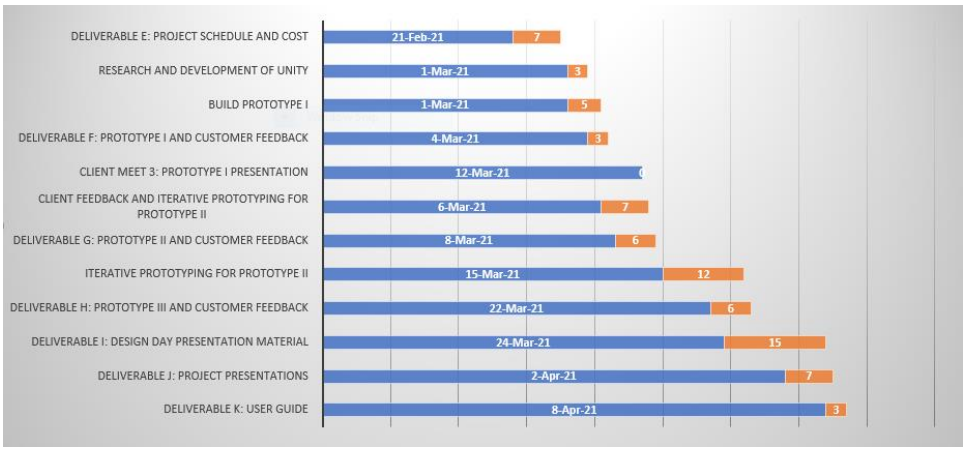

Figure 2. Gantt Chart

Risk Assessment and Contingency Plans

To plan for all case scenarios, a risk assessment was conducted for sections of the project that have the potential for problems. There are many diverse types of risks, both in the technical sense and in other areas like interpersonal matters. The risks that related to this project were categorized by probability of that risk occurring and the impact that would have on the project. A specialized contingency plan was also created for each risk. This risk assessment and contingency plans are outlined in table 1 below.

Risk	Probability	Impact	Contingency
Group Conflicts	Low	High	Solve things in a respectful, and self-reflective manner
Coding Issues	High	Moderate	Debug code and seek help if needed
Losing Files	Low	High	Use files that are shared and save automatically
Team Members Not Completing Tasks	Low	Moderate	Another member will do the task if given notice
Inability to Have Scanner Directly in App	High	Low	Have scanner open in browser
Inability to complete all the areas of the app	Moderate	High	Priority of app is the scanner

Table 1: Risk Assessment

Since the group is composed of chemical engineers, the reality is that many aspects of this project are foreign. To manage this, the group is committed to embracing the learning process and seeking help from each other and externally when needed throughout the project.

Bill of Materials

Part #	Part Name	Description	Quantity	Unit Cost	Cost (USD)	Cost (CAD)
1	AR foundation	Allows use of AR in Unity	1	Free	Free	Free
2	Teachable Machine	Image recognition software	1	Free	Free	Free
3	Logo images	Logo for App	1	Self-made	free	free
4	Unity Textures	Different textures for various objects	1	Free	Free	Free
5	Location services API	Allows use of location services in App	1	Free	Free	Free
6						
					Total	0 CAD

Table 2: Bill of Materials

Conclusion

This deliverable provides a more comprehensive analysis of the project plan and schedule. It features the newly added factors of risk analysis and contingency planning. Moreover, a bill of materials was created to demonstrate the goal of producing a free app. Overall, our team believes the project is flexibly and professionally planned out and is looking forward to an accomplished performance on Design Day.