# PaddlePals

## Team G01-2

### Deliverable E: Scheduling and Cost

### Engineering Design GNG1101


Team Members:

| | | | |
|---|---|---|---|
| Faith Harmath | 300316328 | Zahra Alavi | 300259587 |
| Connor Mackillop | 300231023 | Marissa Ruth | 300220560 |
| Layane El Merini | 300288563 | | |

Faculty of Engineering


October 23rd, 2022

*ABSTRACT*

*The purpose of the project is to develop a digital replica of a recorded paddle ball match which is accessible through a computer application. In the previous deliverable, conceptual designs were presented outlining possible ideas for the layout of the application. It was decided that a team/group design should be composed containing ideas from each member for the best results. This deliverable will cover the financial aspects of the design, the project's task outline and the project's risks as well as ways to remediate them.*

# Table of Contents



**List of Figures**



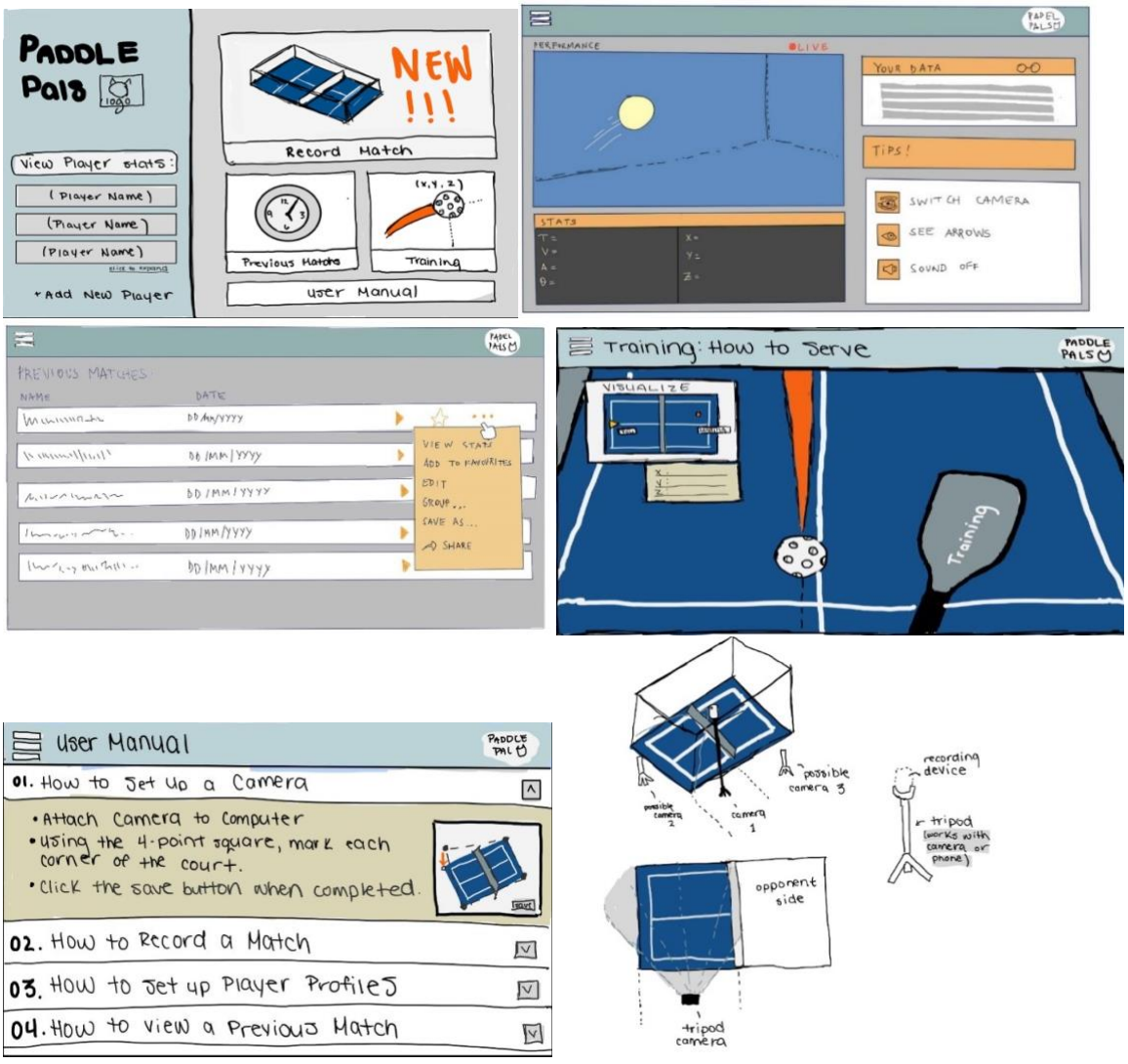
**List of Tables**

# 1. Introduction

In the previous deliverable, a final conceptual design for the application was determined. The final design was chosen according to the design criteria and benchmarking information of the project, ensuring to fit the clients' needs. This design was presented to the client, and it was approved after making changes to the position of the camera. It is our current goal to determine the cost of producing this design along with all its features. The budget for the project is $50.00 CAD. Through analyzing the features for each component of the project, a list of materials will be made to fit the budget requirements. A list of limitations for the design will also be presented, the purpose of this is to prepare for the initial prototyping phase. A scheduling plan for each prototype will also be decided which will analyze the quality and feasibility of the design, this will be used to progressively improve the design.

# 2. Conceptual Design

Figure 1-6: Final Design



## 3. Project Schedule Outline

Table 1: Task Outline

| Number | Task | Dependencies | Owner | Duration | Due date |
|---|---|---|---|---|---|
| 1 | Deliverable E: Project Plan and Cost Estimate | None | Everyone | Milestone | 2022-10-23 |
| 2 | Research on development of application | None | Everyone | 10 days | 2022-11-01 |
| 3 | Build Prototype 1 | 2 | Everyone | 8 days | 2022-11-06 |
| 4 | Deliverable F: Build Prototype 1 | None | Everyone | Milestone | 2022-11-06 |
| 5 | Client Meet 3: Prototype 1 Presentation | 2 and 3 | Everyone | 1 day | 2022-11-08 |
| 6 | Build Prototype 2 | 5 | Everyone | 5 days | 2022-11-13 |
| 7 | Deliverable G: Build Prototype 2 and customer feedback | None | Everyone | Milestone | 2022-11-13 |
| 8 | Build Prototype 3 with customer feedback | None | Everyone | 2 weeks | 2022-11-27 |
| 9 | Deliverable H: Prototype 3 and customer feedback | None | Everyone | Milestone | 2022-11-27 |
| 10 | Deliverable I: Design Day Presentation Material | None | Everyone | Milestone | 2022-11-30 |
| 11 | Deliverable J: Project Presentations | None | Everyone | Milestone | 2022-11- |
| 12 | Deliverable K: User and Product Manual | None | Everyone | Milestone | 2022-12-7 |

Figure 7: Gantt Chart

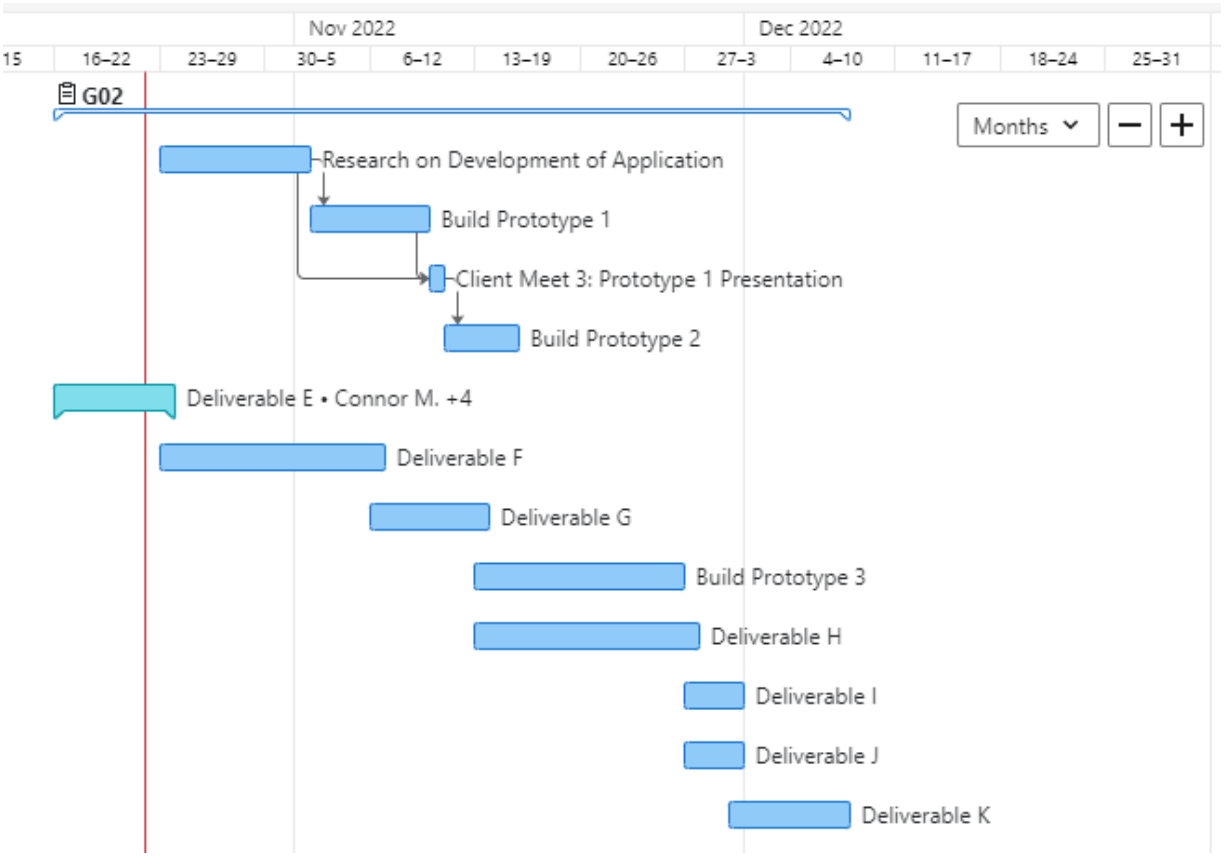
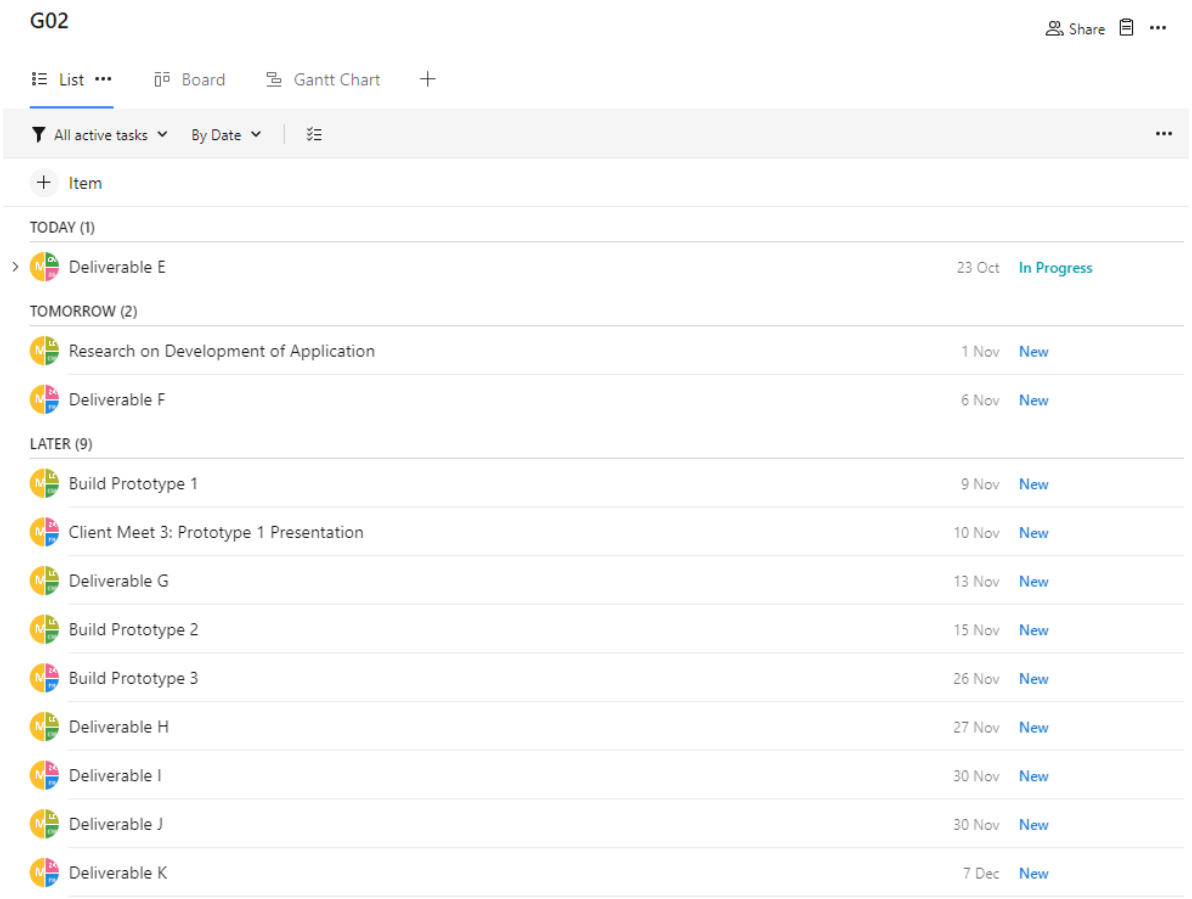


Figure 8: Full Task List



## 4. Project Risks

Table 2: Project Risks

| Risks | Probability | Impact | Contingency |
|---|---|---|---|
| Tasks are not completed on time | Low | High | Creating a task list and communicating with all group members on how much time each member is willing to contribute to the project. |
| Coding issues and/or other technology issues between unity and python | High | Moderate | Research solutions to presented issues from online or peers and ask the TA for help. |
| Conflicts develop between team members | Low | High | Team members give attention to the issue and find a fair solution to fix the conflict. |
| The final project is not as accurate or advanced as the goal | Moderate | Moderate | The team members will try their very best and not be disappointed if the project is not completed to their own expectations. |
| Financial Risks (rising cost of material/equipment, unrealistic budget) | Low | Moderate | Team members will research less expensive ways to perform desired tasks. |
| Strategic Risks (strategies chosen to complete a project) | Moderate | High | The team will not rely on only one strategy if the first one does not end up working. We will think of multiple strategies to go about our project. |
| Performance Risk (unclear & unexpected expectation for deliverables) | Moderate | High | As previously stated, the team will come up with various alternatives to our ideas and keep brainstorming together |

## 5. Bill of Materials

Table 3: Bill of Materials

| Part # | Part Name | Description | Quantity | Unit Cost | Cost (USD) | Cost (CAD) |
|---|---|---|---|---|---|---|
| 1 | Camera Stand/Mount | A tall camera stand allowing for high viewing angles of the gameplay. (x3) | 3 | $19.99 | $49.69 | $67.77 |
| 2 | Unity (2022.1.19f1) Unity Hub (3.3.0) | This program will be used to create the virtual game environment. | 1 | Free | Free | Free |
| 3 | Camera | A phone camera will be used for our application recordings. We all already have a phone camera. | 3 | Free | Free | Free |
| 4 | Python (ver. 3.9.13) | Allows for development of a code for ball tracking. | 1 | Free | Free | Free |
| 5 | VS Code (1.72.2) | Integrated Development Environment (IDE), used to organize and run code. | 1 | Free | Free | Free |
| TOTAL | | | | | | $67.77 |

Reference for Part 1:

https://www.amazon.ca/UBeesize-Wireless-Perfect-Recording-Streaming/dp/B09PH9PNYY/ref=sr_1_6?gclid=CjwKCAjwzNOaBhAcEiwAD7Tb6IJmni7sS4g8pPivxCp4ex3sLfmRC6-uTIIkktQoT18KMgiLX1CtQhoCsM4QAvD_BwE&hvadid=208383585058&hvdev=c&hvlocphy=9000668&hvnetw=g&hvqmt=e&hvrand=3669465495637452838&hvtargid=kwd-309860597278&hydadcr=1504_9454476&keywords=tripod+with+phone&qid=1666536426&qu=eyJxc2MiOiIwLjAwIiwicXNhIjoiMC4wMCIsInFzcCI6IjAuMDAifQ%3D%3D&sr=8-6

## 6. Conclusion

This document is based on the previous conceptual designs and feedback from the client. It outlines the parts needed and estimated cost to advance to the prototyping and testing phase of the Paddle Pals application. The estimated cost of this project is approximately $70 based on the best camera mount we could find to fit the scope of the project.