Project Charter Document

# General Information

Project Name: 2-D interactive game Project Number: PR232399

Requestor Name: Joe Spurway Date of Request: January 24, 2022

Requestor Contact information: [jspur720@mtroyal.ca](mailto:jspur720@mtroyal.ca)

## Project Overview

This project aims to fulfill the functional and documentational progress of a 2-D 9-hole mini-golf game [Mini Golf] from a top-down perspective. Mini Golf provides the user with the ability to control the angle of a putting ball (char ‘A’ or ‘D’) and power of their shot (char ‘W’ or ‘S’) and take their shot by pressing the enter key ( char ‘LF’ ) . To signify the angle's position changing relative to the ball, a directional line will be used that implies the direction the ball will travel. Following this, we will use a graphical power bar to visualize the output power of the shot. Obstacles are placed on the map in the form of surface terrain changes and portals/redirects. Surface terrain changes, changing the speed of the ball lowering the power of the moving ball. Portals teleport the ball to another area on the map. The ball leaves the portal with the same power and angle that it entered the portal with. The perspective of the game takes a bird’s eye view of course, where the user can see the whole map and all its features to accurately calculate their next shot. The goal of the game is to get the user’s ball into the putting-hole at a defined position on the map in the least amount of turns possible. The reason this project is being undertaken stems from the term capstone project of Computing Machinery II course at MRU, as a high-level time estimate we aim to be completed by April 14th.

## PROJECT OBJECTIVES

These projects' objectives are to implement this assembly language game first within a C programming language framework and then convert it into assembly language. This will increase the likelihood of successful completion as translation from C to 68k is much easier than writing directly to Assembly language. Each implementation will have for fulfill testing criteria outlined in product testing.

## REQUIREMENT

The projects must satisfy the following general requirements:

* Games must be based on animated, monochrome, 2-D graphics.
* Games must be interactive, with near-instant (“real time”) feedback to user input events.
* Both 1-player and 2-player versions must be specified.
* Games must include sound effects and music.
* Basic game play must involve user input from the keyboard. Optionally, mouse input may also be used for some user input during game play. Mouse input will be mandatory for a welcome “splash screen” in a later stage, but this can be ignored initially.
* The core game-play rules and graphics should be kept relatively simple! If extra elements are desired, it must be possible to add them only after the core game is working.

## BUSINESS JUSTIFICATION

This project is needed to fulfill a capstone project within the Mount Royal University degree requirements for my chosen major. The project aims to expand my knowledge of combinational and sequential digital logic design, focusing on its application to the creation of modern computing machinery. This includes hardware interfacing to peripheral devices, and programming techniques for asynchronous and real-time machine input/output. From a ROI perspective this project offers great benefits to all involved, not limited to myself.

## RESOURCE COSTS AND ESTIMATES

At key milestones we will reassess resource allocation and costs. As of right now, we see no foreseeable additional costs outside of project labor completion time.

## ROLES AND RESPONSIBILITY

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| Name | Role | Responsibility | Signatures |
| Joe Spurway | Project Manager | Co-ordinate project timeline and resource management - assist with implementation | J. Spurway |
| Soren Bradley | Tech Lead/  Functional Manager | Help design, implement, and test all aspects of the game’s development |  |
| Paul Pospisil | Instructor/Project Sponsor | Assist in high-level guidance of game development life cycle |  |
| Steve Kalmar | TA/ Knowledge Supplier | Assist in lower level, more persistent issues. |  |
| Jordan Pratt | TA/ Knowledge Supplier | Assist in lower level, more persistent issues. |  |
| Library | Study Space/ Knowledge Supplier | Provide a safe, clean space to convene when vertical, COVID safe, communication isn’t an option. Assist with research as needed. |  |
| IT Department | Software access | Provide access to and assistance to relevant software needed for the project. |  |

## ATTACHMENTS

Attached within the Project Charter Folder is a detailed game specification that outlines in more detail the functional components of the game.