Golf Hero

By Just Some Randos

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Description

Our software is being designed in Unity for Windows machines. It is programmed in C# and organized using the MVC model. Our game is inspired by mini-golf with an abstract spin. This document contains in depth details of our software design and decisions.

Table of Contents

CRC Cards

ArrowController
● Reflect direction camera is facing ● Keep arrow ahead of the ball

BallCamController
● Camera follows the ball ● Camera move based on mouse position ● Camera zoom with mouse wheel ● Hide objects in way of the camera

CollisionTrigger
● Change collision layer of ball to fall in the hole

HitBallBehaviour
● Apply a force to the ball with left mouse click ● Adjust the power applied to the ball with the number keys (TEMPORARY) ● Hide arrow while in motion ● Only allow shooting when stopped

HoleTrigger
● Detect when the ball is in the hole ● Load the next scene

MinimapIconBehaviour
● Keep the 2D minimap in place

Classes added for Sprint 2

CloudMovement
● Move clouds based on wind direction

PMMController
● Ingame menu ● Pause the game ● Resume the game ● Reset the current stage

WindText
● Display wind direction and speed on the HUD

BallSpawner (*Multiplayer*)
● Spawn player ball ● Keep track of all balls in play ● Keep track of spawn point

PlayerController (*Multiplayer*)
● Perform server setup ● Allow local player input ● Request ball spawner ● Request player shot ● Request reset of ball ● Hide arrow from nonlocal players

Software Architecture

Expected System(s)

- Our project is expected to run within a desktop environment (e.g. Windows), where the user is able to provide input using their keyboard and mouse and output is able to be sent and displayed on their screen(s) attached to their computer.

Dealing with Errors & Exceptions

- Unity's game engine will handle most errors/exceptions which occur during the run-time of the game.
- For user errors (e.g. User providing a display name which contains invalid characters), an in-game dialogue will appear informing the player of the error and how they should fix it.

Diagram Information

- Using Unity, our project's architecture is made up of mostly components.
- The view (which the player sees) is the current scene (menu, level, etc.) that they are on.
- The model are the game objects/prefabs. This includes all objects found in either of the scenes.
- The controller are the scripts which are part of the game objects within the model.
- The only models shown are those that are associated with a script in order to show the design process behind each class and the reason for their connections

Diagram

View

Scenes

TrialCourse

MainGame_Level1

Model

Objects & Prefabs

Player
- Ball
  - Ball Icon
- Camera

Stage
- Hole
  - Collision Trigger
- Hole
  - Hole Icon
- Bottom Trigger

Canvas
- Wind

Controller

Scripts

ArrowController

+ arrowTransform: Transform
+ ballTransform : Transform
+ camTransform : Transform

+ Arrow points where camera is facing
+ Position arrow in front of the ball

BallCamController

+ target : Transform

+ Camera follows the ball
+ Camera moves based on mouse position
+ Camera zooms with mouse wheel
+ Hide objects in way of camera

CollisionTrigger

+ Change collision layer of ball when in hole

HitBallBehaviour

+ arrow : GameObject

+ Apply force to the ball with left click
+ Adjust power applied to ball with number keys
+ Hide arrow while in motion
+ Only allow shooting when stopped

HoleTrigger

+ Detect when ball is in hole
+ Load Next Scene

MinimapIconBehaviour

+ Keep the 2D minimap in place

WindText

+ Display wind direction/speed

PMMController

+ Ingame menu
+ Pause game
+ Resume game
+ Reset current stage

BallSpawner

+ Spawn player ball
+ Keep track of all balls
+ Keep track of spawn point

PlayerController

+ Perform server setup
+ Allow local player input
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