PROGRAMMING THEORY OOP

Design Document

Project Brief

Overview

This project implement features for Object Oriented Design (OOP).
Intent of this project is not a game, but rather a visual tutorial on OOP and how it would work. The OOP concepts are very basic and represent a simple race car team. The team members include a driver, mechanic(s) and test driver.

The Application

Scenes

Application consists of 3 scenes

- Main Menu
- Lesson 1
- Lesson 2

Scene Navigation

- ☐ Launching the application starts with the Main Menu Scene
    - ☐ Main Menu contains a Start button that navigates the user to the Lesson 1 Scene
    - ☐ Main Menu contains a Quit button to exit/quit the application.
- ☐ Lesson 1 Scene contains navigation to Lesson 2
    - ☐ User has option to Quit; this takes user back to Main Menu.
- ☐ Lesson 2 Scene contains navigation to return to Lesson 1
    - ☐ User has option to Quit; this takes user back to Main Menu.

Player Setting

- ☐ Single Instance for application data
- ☐ Handles saving and loading Player Settings Data
- ☐ Player Data
    - ☐ Name (8 char max)
    - ☐ Racing Team Name (8 char max)

Main Menu

- ☐ Handles all navigation between scenes
- ☐ Handle changing of User Name
- ☐ Loading / Saving via Player Settings

Models and Structure

There exists models for car racing team members.

Base model is a TeamMember. Driver and Mechanic derive from TeamMember. There are two types of Drivers; Race Car driver and Test Driver.

abstract TeamMember

RacingTeam

abstract GetTask()

virtual Awake()

Mechanic : TeamMember

override GetTask()

Engine

Electrical

Alignment

Body

abstract Driver : TeamMember

MilesDriven

CanDriveManual

CanDriveAutomatic

RaceCarDriver : Driver

DriverName = PlayerSettings.UserName

RacesWon

RacesLost

GetTotalRaces()

override GetTask()

TestDriver : Driver

override GetTask()

The Scenes

Requirements of features on each scene

Main Menu

○ Show game title

○ Prompt for User Name

○ Prompt for Team Name

○ Start button to take to Lesson 1

○ Quit button to exit/quit the game

○ User Name and Team Name should be persistent through the scenes and between sessions

Lesson 1

○ Show Team Name at top of screen

○ Show Image representation of abstract Person and abstract Driver.

○ Show Description of what abstracted classes contain.

○ Lesson 2 button to take to Lesson 2

○ Quit button to take to Main Menu.

Lesson 2

○ Show Team Name at top of screen

○ Show Image representation of Driver, with user name

○ Show Image representation of some Mechanics with their different skills

○ Show Image representation of Test Driver

○ Lesson 1 button to take to Lesson 1

○ Quit button to take to Main Menu.

○ Do some interactions with Driver, Mechanic, and Test Driver