Junior Programmer: Programming Theory (OOP applications).

Project brief

Application concept

Overview

In this project, I will implement OOP concepts in a educational application. The application show shapes and information about them. The user points and clicks on a colored shape and the information is displayed in a panel.

My Task checklist

Version Control

✔ implements version control management by branches.

Scene management

✔ Create transitions between two scenes
✔ Configure buttons so the user can control those transitions.
✔ Configure a button to exit the application

Inheritance

✔ Create a new type of shapes from a base shape.

Polymorphism

✔ Implements variations of the bases method in child Classes.

Abstraction

✔ Refactor to reduce duplicate code and improve reusability.

Encapsulation

✔ Use getters and setters to protect data from misuse.

Unity project overview

The application

Scene in the project

There are two scenes in the unity project:
- Title screen scene
- Shape selection scene

User interactions

The user needs to be able to:
- Launch the shape selection scenes from the title screen scene
- Return to the title screen scene from the shape selection scene
- Exit the app
- Change his/her name in the title screen scene

The shape selection scene

In this scene there are three shapes with different colors. There is also a panel that display information.

Basic functionality

When the user selects a shape, the panel show information about it, as well how calculate its area.

Provided scripts

The project comes with eight scripts which are completely written. The scripts can always be improved.

Shape.cs

This is an abstract class. Contains basics behavior and abstract methods for shapes management (also how display the info).

CubeShape.cs, CylinderShape.cs and Sphere.cs

This classes are child of shape. They are specific implementations and contain specific information that the panel will display. They implement all abstract methods of "Shape.cs".

AppPreferences.cs

This class is a Singleton class. It's used for sharing information between the scenes.