FG22GP_ALL Jan 2023 Assignment

The goal of this assignment is to create a Unity editor tool for an asteroid game that utilizes ScriptableObjects and the Unity editor UI.
(After some feedback from students we added this option) - If you feel it's simpler to make your own asteroid game from scratch and you have the time to do both do that, but that part won't be graded, the assignment is the tool and the tool integration to the game. That's why showing that you can add a new tool to an unfamiliar game project is more a realistic task, because often you get into an existing project and will be asked to make a tool for it or work on the existing tools.
The tool should allow for manipulation of various aspects of the game, such as incoming direction, rotation speeds, damage, and appearance of the asteroids, as well as different states of operation for the ship. You might need to change the game code and introduce ScriptableObjects to hold the games parameters that the tool can change.
To complete the assignment, you should design and implement the tool, following best practices for using ScriptableObjects in Unity, document their work, and reflect on the advantages and challenges of using the chosen UI system and ScriptableObjects in the project.
ScriptableObjects are a powerful tool in Unity that allows for the storage of data that can be shared between multiple objects in a scene, or between multiple scenes. They are useful for storing data that is not tied to a specific game object, but that can be accessed and modified by multiple components or scripts.
In this assignment, one way to use ScriptableObjects is to create a ScriptableObject class to represent the data of the game, and then create instances of the ScriptableObject and populate the fields with the appropriate data. The tool should also be content-aware and only show the options for the selected objects in the scene.
The final submission of the project should be made available on a GitHub repository, where the teacher can provide feedback and guidance throughout the development process. In addition, you should present the tool to the class and talk about the challenges and solutions they encountered, and reflect on their experiences working on the assignment.
Don´t hesitate to reach out to your teacher for help if you need it.

To receive a passing grade (G) in the course, students must successfully implement the tool and demonstrate an understanding of the benefits and limitations of using ScriptableObjects in Unity projects. They must also be able to present and explain their work in a clear and concise manner.

To receive a VG (Very Good) grade in this assignment, the student should not only meet the requirements for a passing grade (G), but also go above and beyond in terms of their implementation and understanding of ScriptableObjects and Unity editor tools. Here are a few ways You could achieve this, **at least three of these**:

- Utilize advanced features of Unity editor tools, such as custom inspectors or editors, to enhance the user experience and make the tool more powerful and efficient.
- Incorporate error handling, undo/redo functionality, and other best practices to improve the robustness and reliability of the tool.
- Create additional functionality or expand on the existing functionality to make the tool more useful and versatile.
- Reflect on the process of creating the tool and provide insightful and thoughtful feedback on how the use of ScriptableObjects and Unity editor tools impacted the development process.
- Create a well-organized and easy-to-use interface, making sure that all functionalities are intuitive and easy to find
- Add functionality to the tool which makes it more reusable, like exposing methods or properties to the user that are not hard-coded.
- Show evidence of user testing and iteration based on feedback.
- Make the tool a Unity package so it can be easily shared with others, document the package and all of its functions in an easy-to-understand way.
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By meeting these criteria, the student will have demonstrated a strong understanding of ScriptableObjects and Unity editor tools, and have created a highly polished and effective tool for the asteroid game.