CAR GAME PROTOTYPE DOCUMENTATION

NOTES: The game has been developed with UNITY 2019.4.9f LTS. No third-party libraries or packages are used.

Architecture

Main gameplay structure is controlled by managers. The initialization phase is carried out by Managers class. It sets up main managers concurrently.

EventManager can be used to subscribe and notify events.

MissionManager stores current level data and handles MissionEvents such as start of a new wave, ending of a wave etc.

ObjectManager is used to retrieve various objects and their creation.

MovementController catches button events and triggers input events using button events.

SceneController is responsible for loading new levels additively.

Level class contains level data namely obstacles and entrance/exit points along with car specific attributes such as car speed, car rotation speed.

Game will be launched in PersistentScene. This scene contains all essential objects such as Managers. Levels are contained in scenes such that each scene is unloaded and new one is loaded additively upon finishing levels.

Level Editor

The game has simple level editor which can be used in two ways. One is via editor window and the other via level object's editor.

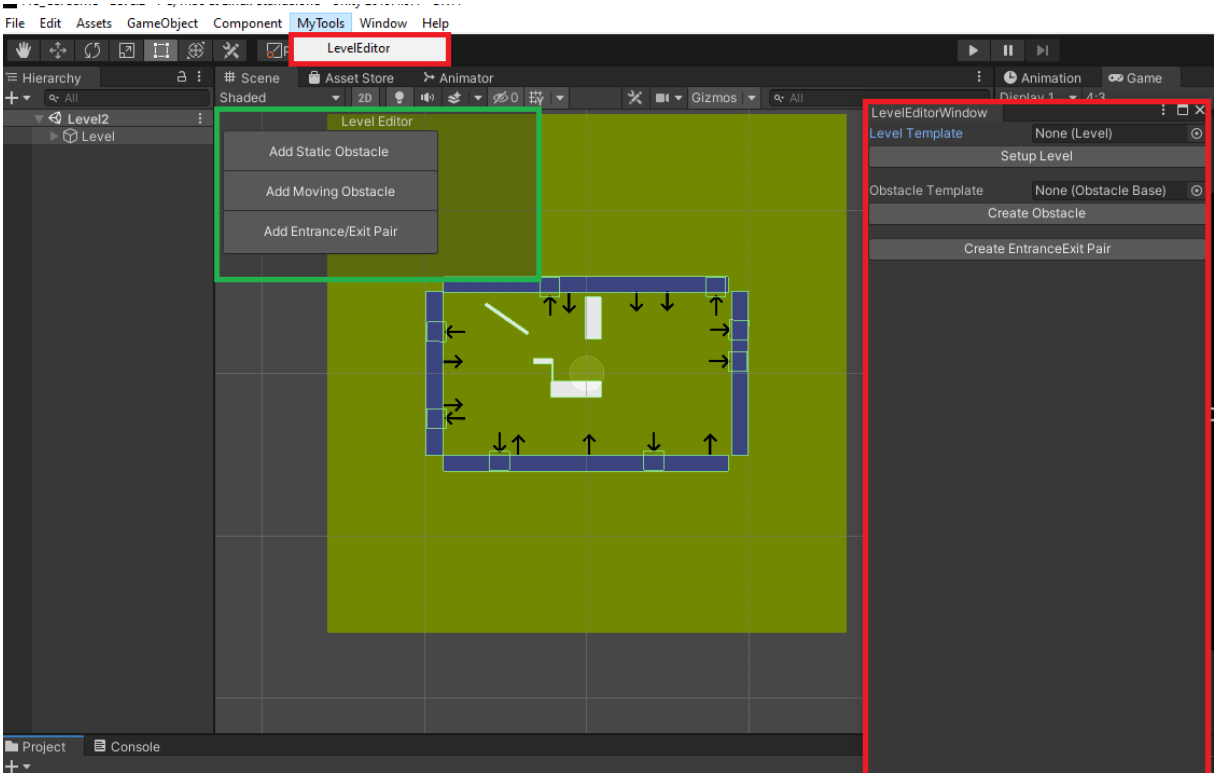
For the editor window, a level can be built in a scene using Setup Level button. If you supply a prefab this will be built otherwise default level is constructed. It is better to use level prefab since some slots may be null by default.

In the same manner, obstacles can be created by supplying prefabs into the slot.

For GUI level editing using buttons new obstacles and entrance/exit points can be added. There is no selection for prefabs, that is, default ones will be put in.

After creating a level add an entry to the SceneData array of SceneController. The new level's name and its finish end waves (e.g x, x + 7). (SceneController component is attached to the Managers gameobject which is in the PersistentScene)

Base Resolution is 1600x900. Game runs independent of game resolution but while editing it should be 1600x900 for correct UI resizing.

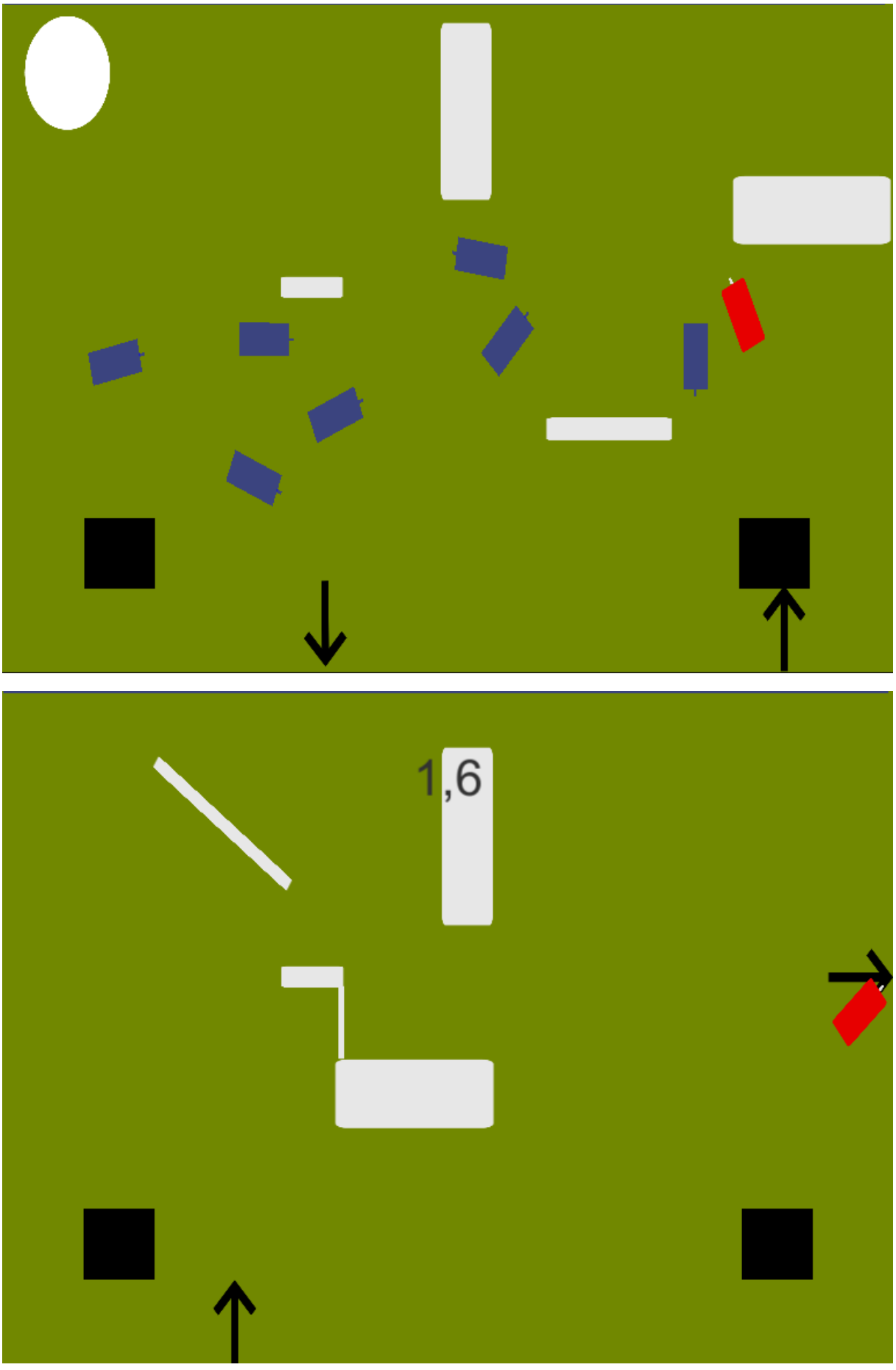


Game Play

Level1 will be loaded automatically. Red car represents the current player car and the blue transparent ones represent the previous play copies of the player. Objective is to move to the exit point, the arrow pointing outwards. When arrived to this point, the game will freeze and timer starts when timer ends new wave is prepared. If player bumps into blue cars or obstacles wave will be reset.

Black squares can be used to steer the car. They are here for visualization. For mobile build opaque image can be omitted.

There are initially two levels for the game. Each level contains 8 waves. Car speed attributes are dependent on the level, they will be set when a level is loaded.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