# VR6

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# 1 The game

One player has 2 minutes to go from the start of the level to one of the 3 available finish platforms. A second player must do everything to slow the progression of the first player by triggering obstacles at distance through a tablet.

# 2 The controllers

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# 3 Applications

We built two independent applications. One for each player. The two applications communicate through the internet network.

## 3.1 Level (Host)

One application handles the HTC VIVE controllers and displays the 3D world containing the game level.

## 3.2 Minimap (Client)

The second application can be run on a tablet and displays a top-view map of the level. Through this app the second player can see player 1 location and is able to trigger the walls distantly.

## 3.3 Wall obstacles

There are two types of wall obstacles.

- Wall which once up will automatically goes down after a fixed number of seconds.
- Wall which once up can be destroy with the canons of the ship.

# 4  Networking

Here is the list of all the possible messages that can be exchanges between the host and the client.

- GetBlocks
- Block
- GetWallObstacles
- WallObstacles
- GetWallObstaclesImage
- WallObstaclesImage
- GetStartPlateforms
- StartPlateform
- GetPlateforms
- Plateform
- GetRobotPosition
- RobotPosition
- Start
- TriggerWallObstacle
- WallObstacleHasFinished
- WallObstacleHasFinished
- GameOver
- Finish

Here is an example of the structure of one message. This is the one used to send the blocks to the mini map in order to reconstruct the level.

```
public class BlockMessage : MessageBase {
        public Vector3 position;
        public Vector3 size;
        public string name;
        public string materialName;
}
```

## 4.1 Some graphical details

To make the game more dynamic and pleasant to play we added some little animations. The clouds are moving in the sky, the water is animated as well and the finish green platforms moves to add a little difficulty. There is also some distance fog to increase the depth perception. We also took some time to make sure the environment stays coherent in terms of colors and aesthetic when we downloaded the assets or created ours.

# 5 Video

The video is available here :

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# 6 Images

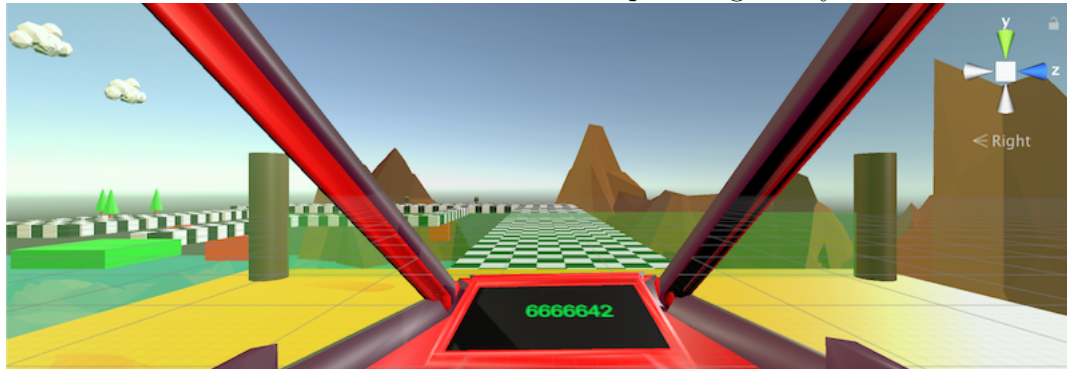FIGURE 1 – view from the cockpit designed by ourself
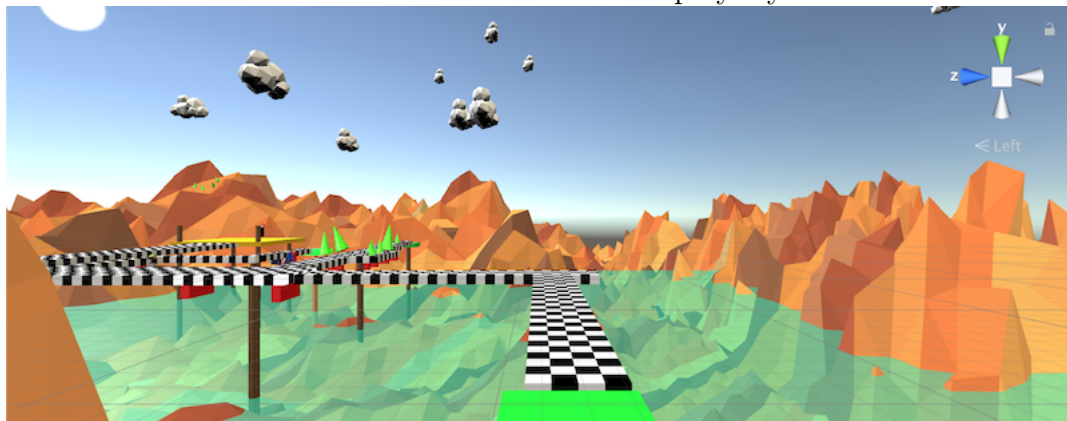


FIGURE 2 – level 1 - low poly style

FIGURE 3 – outside view of the ship piloted by player 1 with the htc vive

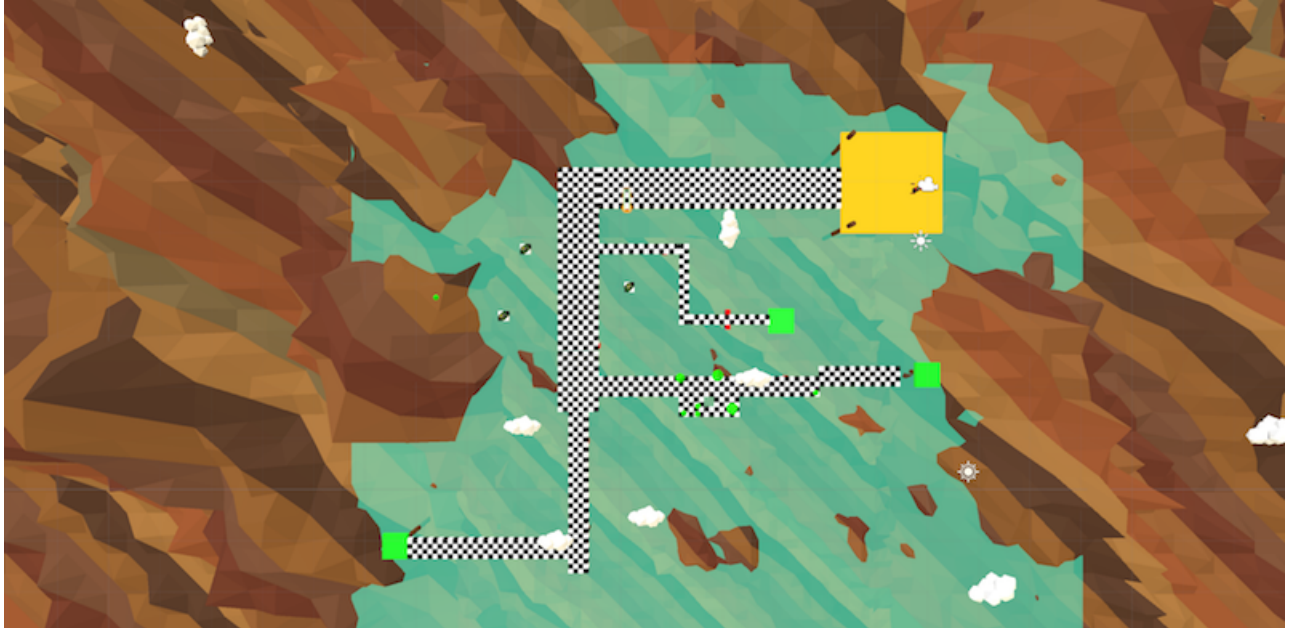FIGURE 4 – top view of level 1 - the orange platform is the start and the green ones are different finishes



FIGURE 5 – a wall triggered by player 2 with the tablet