# TP1 Game Design Document

# Game Title: "Sandbox"

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**1. Introduction**

"Sandbox" is an open-world sandbox game that allows player to explore a vast virtual world just for fun.

**2. Game Overview**

**2.1 Game Setting**

The game is set in a vast virtual world featuring simple landscape. Players will have the freedom to explore these environments and defeat all enemies.

**2.2 Key Features**

* **Bizarre World:** A world floating in the air makes player trembling.
* **Weird Enemies:** Do the enemies look familiar? 
* **Building:** There’s no building, only stairway to heaven.

**3. Gameplay**

**3.1 Core Mechanics**

* **Exploration:** Player can traverse the world by walking (***Key A/S/D/W***), jumping (***Key Spacebar***) on the floating platforms that deliver player between fixed platforms.
* **Battle:** Player can choose to fight (***Key J***) with some wooden dummy liked enemies, they will rotate and hit player but won’t do any harm to player. To fight, player must be very close to the enemy and face him.

**3.2 Behavior & Effect**

* **Move:** You are able to move in all directions, moving forward is faster than moving backward and sideward, the acceleration will make player reach a maximal speed; If no directional key is detected, the player will decelerate fast and stop moving. Player will not move through any obstacle, neither will the camera.
* **Jump:** You can jump up to at most 4.5m, it’s necessary if you want to reach as high as you can.
* **Attack:** If you are close enough to the enemy and he is in your field of view, you might want to fight with enemy, your punch will make him ***bleed***, three punches will defeat your enemy and make him ***explode***, also, you will feel that the camera is ***shaking***.
* **Hit:** When you attack your enemy, you will get hurt by the enemy as well, which means you will ***bleed*** and ***stun*** if you get too many hits.
* **Fall:** The stairways that floating in the sky is not spacial, if you don’t pay attention, you will fall from high, it won’t hurt you, but you will ***stun*** and re-climb from the beginning.
* **Victory:** Once you defeat your enemy, a ***clip of triumph music*** will play and you will ***cheer*** for the victory.

**3.4 Game Controlling**

* **Game State:** Press (not hold) ‘***G***’ to enter gameplay state, press ‘C’ to enter timeline cutscene state;
* **Game Level:** For test purpose, two empty scenes are added, all top level game objects except for the wall are set to “Don’t Destroy On Load" attribute to test if they can be brought to next level, to switch to level 2 and level 3, press ‘***N***’ or ‘***M*’***,* the difference between N and M is, N is defined in the SwitchSceneState and M is defined in GUI.

**3.5 Cut Scene and Timeline**

* **Introducing cut scene:** At the beginning of the game, you will first watch a cut scene that introduce the whole level to you.
* **Timeline:** a simple and short clip of animation produced by timeline.

Known Issues:

Unity accidentally destroyed the main character asset and some settings and scripts, so I replaced a lot of scripts including CharacterControllerStateMachine and CameraController and other important scripts, that’s why the main character moves very weird and I still have no time to debug and fix this problem.

appendix:

