Basically, my project is an open-world 3D survival game. It is inspired by the well-known game called Minecraft (the basic elements are blocks). My project uses Panda3D as outside module.

The objective of the game is to survive in the world and stay way from the monsters (monkeys). Panda3D module displays the blocks and the background environment and provides feedback on the location of the models to me. (Before everything start, I made several types of blocks with different textures, the monkeys, and the background in Blender.) The background of the game is the inner surface of a sphere, the boundary of the map is confined so that the player would be able to get out of the sphere and see the sphere.

I wrote the function to rotate camera based on mouse movement, the function to move camera based on keyboard movement and the physical engine (including basic collision and gravity). Movements are made possible by updating speed vector in every frame. Collision is based on the cubic collision between models. To make monsters chasing after the player, I get the position of monster and player in every frame to move the monster.

Although the initial position of the player and the surface blocks are fixed, the place where monsters are spawned and the blocks below the surface are totally random. You can collect blocks/monsters to both hands and destroy them to gain experience. The experience gained helps you level up, increasing the player’s maximum health and magic.

When colliding with the monster, the health of player drastically decrease and a bloody end scene will gradually appear when health is under 75. This is made possible by updating the transparency of the pictures according to the health status of players. The death scene will completely appear after the player’s health drops below 0. The time that the player has survived and the level of the player will be shown.