Final Report

The story:

- The player is jumping on randomly placed tree stumps (front/right/left with straight angle) in a forest.
- The path is generated dynamically.
- If the player misses a platform, the avatar will fall; game over.
- The player can change how far they jump. If the player jumps too low or too high, they miss and fall to the ground.

Features:

- Shading and Lighting of the objects in the scene
- Collision detection: whether avatar touched the platform edge without landing on it
- Physics simulation: animating projectile motion of the jumping avatar
- Implemented skybox for background
- Normal Texture Mapping/Bump Mapping for trees and surroundings
- Tree stump use randomly selected texture to increase aesthetics
- Randomly placed trees/background to increase interactivity
- Smooth transition of camera from stump to stump
- Zig-zagging of jump course in the X and Z axis
- Camera follows the avatar smoothly
- Animation of avatar preparing to jump
- Optimizations made for playability of game

How to play the game interactively?

- Press and hold “j” to jump, jump distance proportional to duration of key press
- Goal is to jump on as many blocks as possible
- Game is over and restarts when you don’t land on a block, after 5 seconds.