

NIKTOPIA project

Software technology and GUI design – 2022/1

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Description of the project

The project aims to create a basic 2D survival adventure game, that features levels guarded by bosses, tools, and resources to obtain these tools. The world consists of premade blocks that are destroyable, mobs, and some interactive items.

Game mechanics

The player should be able to move around, jump and punch, swing tools. Furthermore, a classic item bar/inventory system should be attached to the player, where they can switch/use certain tools. These tools can be found in the world or be crafted – for which resources can be mined by farming the building blocks of the world. Tools should have a certain level, each tool has it's use: how much damage they do, what materials can be broken using them.

The levels should be pre-made, guarded by bosses or objectives – furthermore, they should be positioned vertically: by defeating the gatekeepers the player opens the depths of the map for exploration and progression. For the combat against the bosses, the player is presented some options of weapons. After reaching a new level, the HP of the player resets. If the players dies during combat, they restart the level they were currently on without losing any items/resources.

Items that the character(s) can interact with are placed (or can be placed) throughout the levels, so the player may use them to further advance their equipment.

Current goal with map creation is to have each level be 53 by 30 blocks, which leaves the final project at about 6300 blocks and 4 maps. Not using built-in shapes of WPF we should be able to render all of these without serious performance issues (we think).

The game might have more computer-controlled mobs besides the bosses. These would be roaming the world freely attacking the player character if they get close enough.

Menu

The game should have a menu consisting of the following options:

- Start game

- Continue

The game will have an autosave feature. When the game is closed, and it is not completed it will save the game. This can be continued from the menu. Only the last game can be continued, no older games can be loaded.

- Exit

Visuals

We will create our own pixel art for the game. If it doesn't fit within the deadline, will just download textures from the internet. The visuals will try to resemble Terraria.

Audio

-8 bit music and sound effects

Code structure

The code structure on the backend should consist of

Logic for each entity

Modell for each entity

Textures folder for resources

Display and renderer layer

Controllers - game controller, player controller

