# Summary

Survive from Scratch is a 3D open-world RPG including NPCs, Monsters, skills, crafting, building, and a demon lord.

The primary focus of the game is fighting, but building and talking to NPCs should be enjoyable.

Plans to make the game multiplayer have been delayed because multiplayer would take a long time to implement and would not be very helpful if there are less than 100 global players.

Characters shall have a smart AI and can help you fight as NPC friends or fight you as NPC enemies.

This game shall have boss fights and challenges to give progression.

The main goal of the game is to beat the demon lord, which requires collecting keys from beating the four towers to unlock.

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# TDD Organization

This TDD is organized as follows:

Game engine is the heart of game development

Technologies describes software etc. used to create components of the game

# Game Engine

This game uses the Unity game engine. Unity is the most popular game engine, and I am familiar with it.

Features of Unity include:

* Level design – simple drag-and-drop environment creation and GameObject system allows attaching scrips instances to virtual 3d objects such as characters
* Rendering
* Physics engine
* Audio system
* Animation

Unity can compile and import C# scripts and assets of many different types.

# Technology

Many Assets, mostly 3D models and textures, were found online at the Unity Asset Store.

Level Design – Unity

3D Modelling – Blender

Image and Texture Editing – Photoshop and GIMP

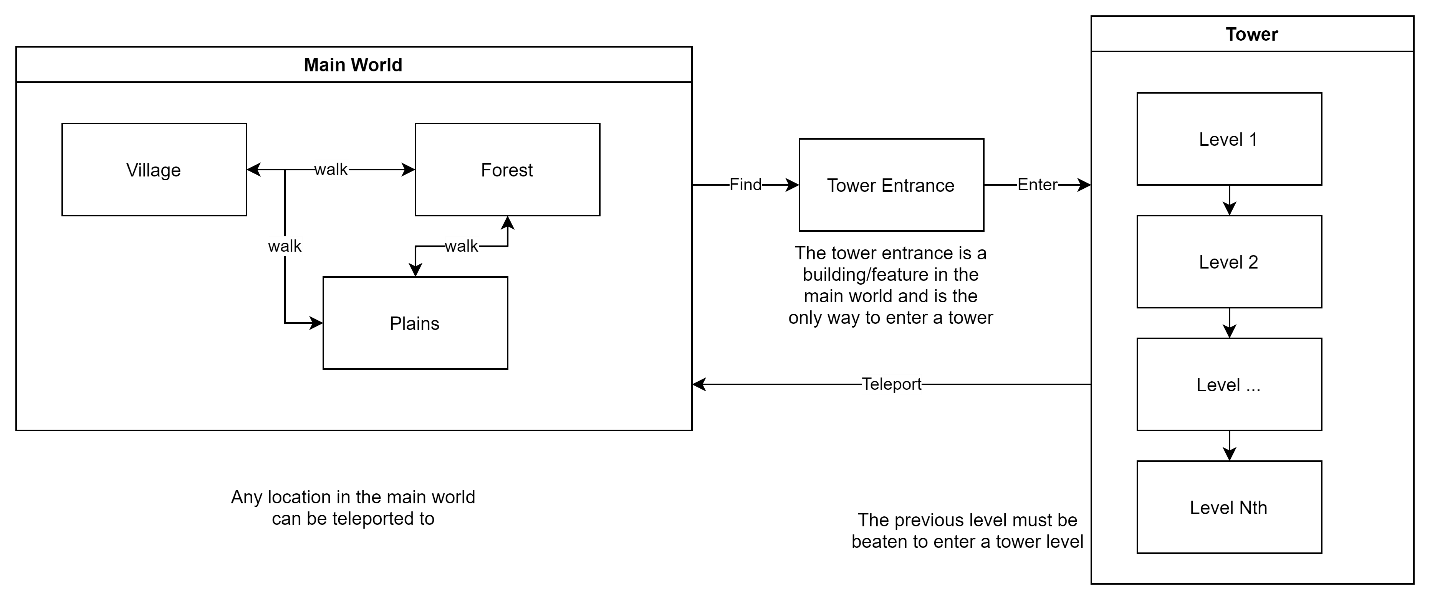
Audio Editing – Audacity

# Platforms

The main target platform for this game is Windows 10. However, the Unity game engine can build the game for many more platforms. Mac and Linux will likely be supported and updated for major updates. Because the mobile market is large, it is a possible future target. However, mobile games require lots of optimization and input design, while Mac and Linux might work with few changes.

# World Location Flowchart

The player can move and teleport between different locations as shown in the below chart. All parts of the Main World are connected “physically”; the player can walk continuously between them. Towers and their individual levels are not connected to the Main World or each other “physically”; traveling to and from them is always done through teleportation.



# Save

## Entities

Most elements in the game to be saved are classified as Entities. These include players, enemies, destroyable trees, and destroyable buildings. Each Entity is assigned an id and has Components that save. Not all entities have all types of components.

Components include:

* SaveEntity – saves the basic data like position and rotation
* Inventory – saves the items (materials, weapons, consumables, etc.) in the entity’s inventory