

DIABLO

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Introduction

Diablo-- is multi-themed, singleplayer dungeon crawler created with Unity. It was created at The Ohio State University for the Game Capstone. The goal of the game is to destroy your enemies, see them driven before you, and to hear the lamentations of their women. The actual goal is to traverse various dungeons, collecting wealth and growing stronger.

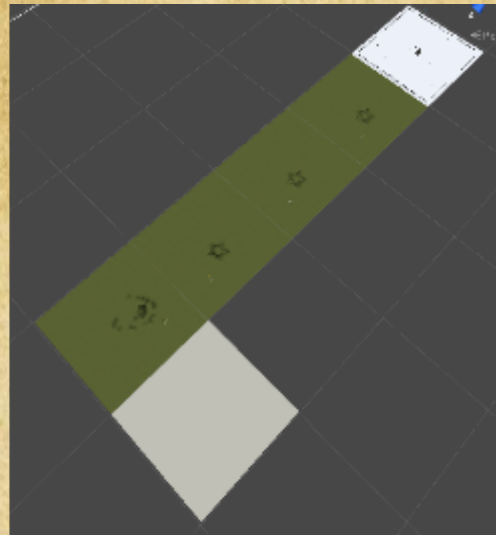
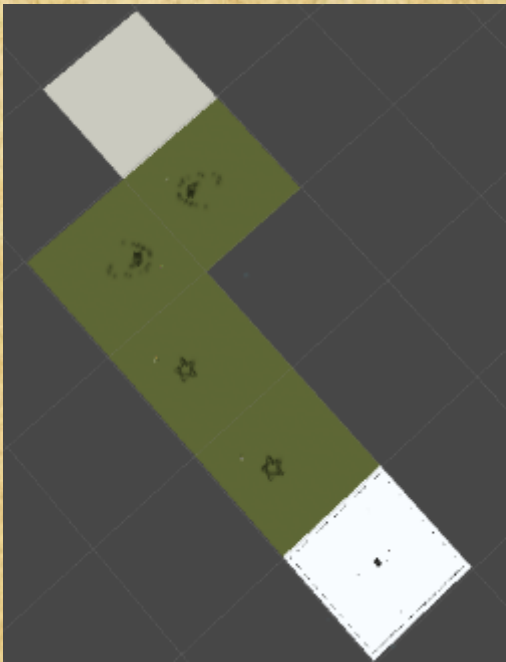
Rules of the Game

Victory Condition

The victory condition is most straightforward, adventurer; kill the final boss to win the game. The means you employ to dispatch the boss are your prerogative. The only real requirement is that to advance through the game, you complete certain mandatory quests to usher you to your enemy.

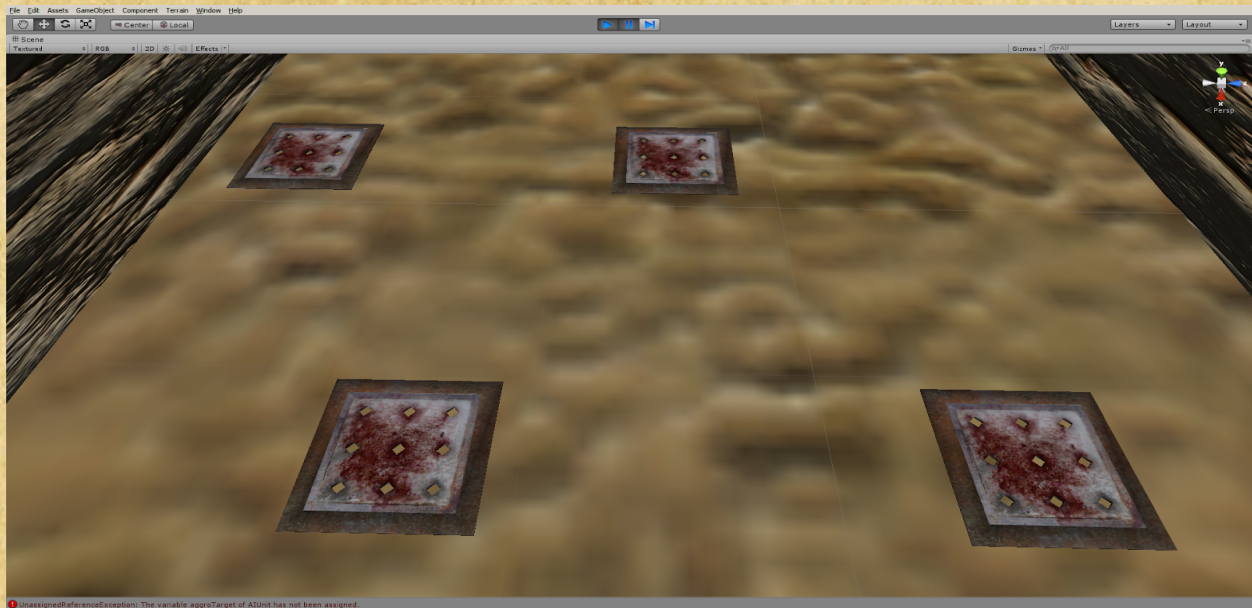
Map

Each map is generated from a set of predefined tiles. A tile is a JSON file which has a reference to its tile data, and metadata such as locations where tiles can attach to each other, and locations where enemies can spawn. The tile data is a prefabricated art asset with terrain, objects, scripted entities, and anything else which might belong in the level. Generally, a map is generated by creating a JSON tree structure describing the connections between each tile. The JSON tree can then be parsed and instantiated in the world. The town level, for example, is generated by taking the town tile as the root of the tree. Then, a countryside tile is attached as a child node of the town tile. Two more random countryside tiles are chained as children to the first country tile, and finally the graveyard is attached as a child of the last countryside tile. Two examples of maps generated by a similar process are shown below.



The level may change each new game, but the tiles each level is made of will not. Each map will be based around an area theme (so the first set of levels will be heavily resemble Diablo aesthetically). Furthermore, enemies and traps will spawn in the level so you should be wary of them, traveller.

Enemies will be described in detail later, but just know that traps deal a lot of damage and they look like this:



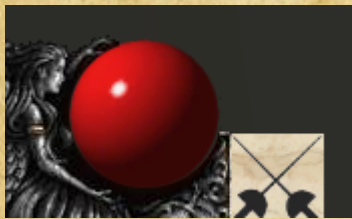
Using Your Hero

Default Controls

WASD to move. Left-click performs your primary attack. Right-click performs your secondary attack. You must bind each button to an attack before you can use them. The \bar{I} key opens your inventory, and the \bar{K} key opens your skill tree. The icons next to the health and mana icons allow you the player to select a specific attack to bind to the left and right mouse buttons.

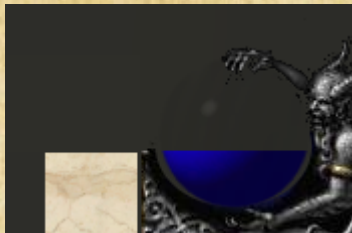
Health

Your health represents your life force. If you run out, you die. Your health is shown in the red orb at the bottom left. Health does not regenerate and the only way to restore it is by using potions. You should be highly wary of your hitpoints because most potions do not instantaneously restore health.



Mana

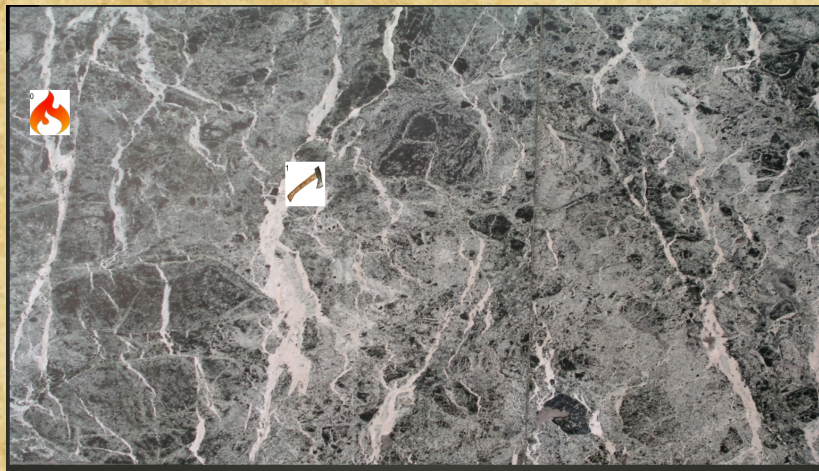
Your mana represents how much magical energy you have to expend. Every spell you cast reduces how much mana you have left, but fear not, it regenerates gradually over time. It is displayed in the blue orb at the bottom right:



Abilities

Abilities are special skills that a hero can perform, usually at the cost of mana. For example, should you choose to be a barbarian, you start with the ability to magically create and throw an axe to destroy any foes who get in its way.

The picture below is the skill tree implementation that allows for assigning of requirements to level up an ability as a well as a state pattern to call a commit on the pattern. The skill tree has a collection of textures, requirements, and abilities placed in a dictionary. The player can then level up by simply clicking on any icon on that menu to increase an ability skill. The call stack checks the dictionary to see that all the necessary requirements are fulfilled.



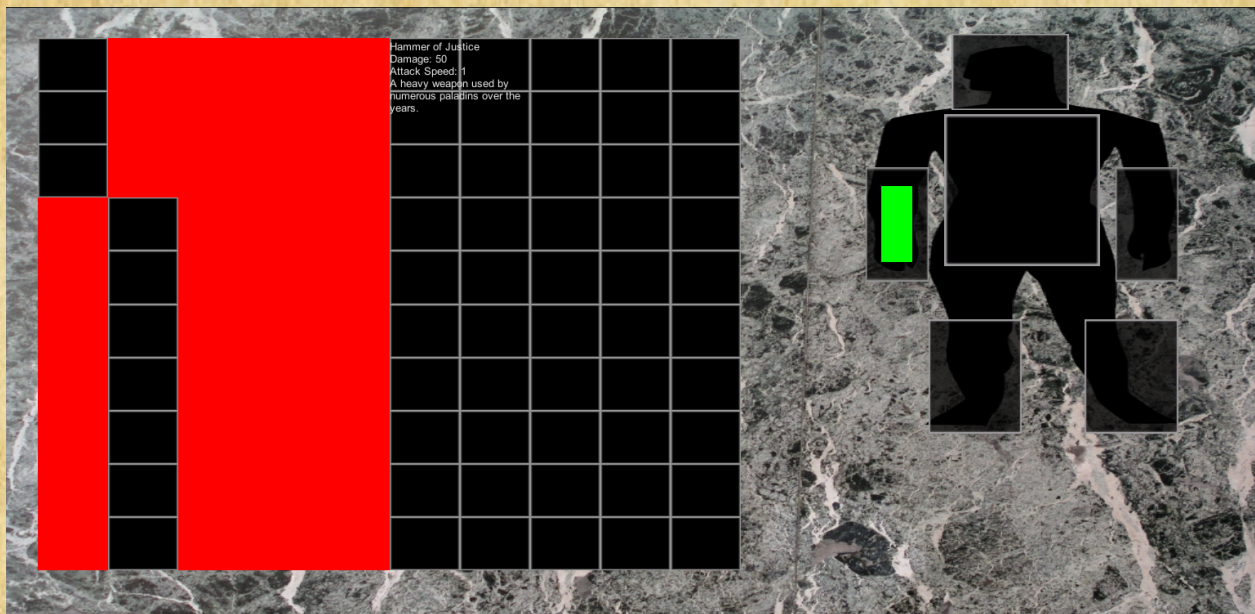
Death

Death comes to everyone, traveller; yours just came a little sooner. When you hero enters this state, there is no way to leave this state.

Item Mechanics

Inventory

Your inventory is where you can access the items you are carrying. You are allotted a 10 by 10 grid space to place items, and each item takes up a certain amount of space. For instance a hammer could take up 3x10 (pictured below) in your inventory. Furthermore, you can equip items into the item slots on your character.



Equipping Items

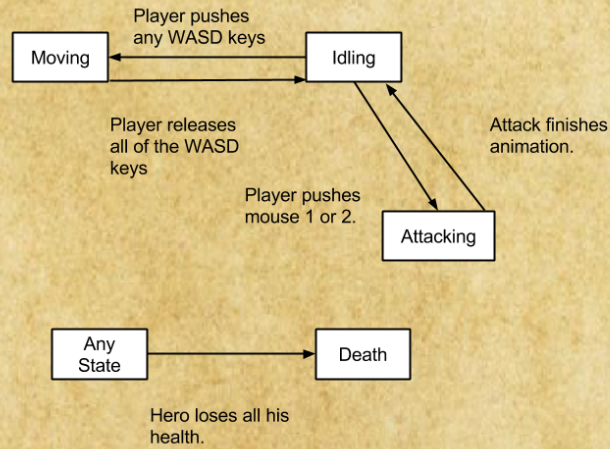
Equipping items changes the actions that your hero can perform; equipping a weapon allows your hero to use that weapon to attack. Another possible example of something a hero could equip would be a ring; a ring could add a unique effect to the hero ranging from temporary invisibility to permanent hitpoint regeneration. One of the most important starting items that you will receive will be a rusty dagger. Equipping this item gives your hero access to a low damage attack.

Bufs

Definition

Bufs are effects that apply to a character in the game. The available effects range from increasing the attack speed of a character to giving damage over a period of time. Some abilities allow for the removal of buffs. A specific buff that you will see is the Berserk ability on the Barbarian. You will see his size increase, attack speed increase, and movement speed increase for a time.

Heroes

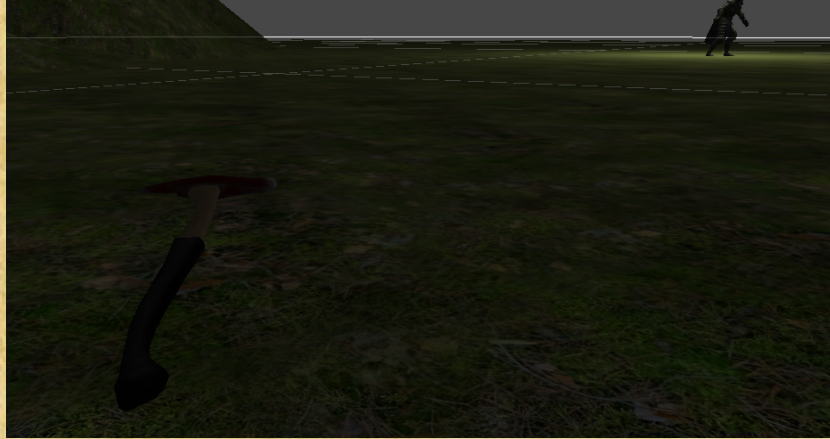


Barbarian



Barbarians are the most direct player class when it comes to dealing with enemies. Barbarians have a small mana pool, but large vitality and strength bonuses as compared to other classes. Their skills are more oriented to controlling large crowds of enemies.

Axe Throw



The axe throw is an early skill for the barbarian that, when used, penetrates multiple targets. It has a high mana cost (it scales with the level) but each successive level causes 50 more damage on hit. The projectile expires after a little time has passed.

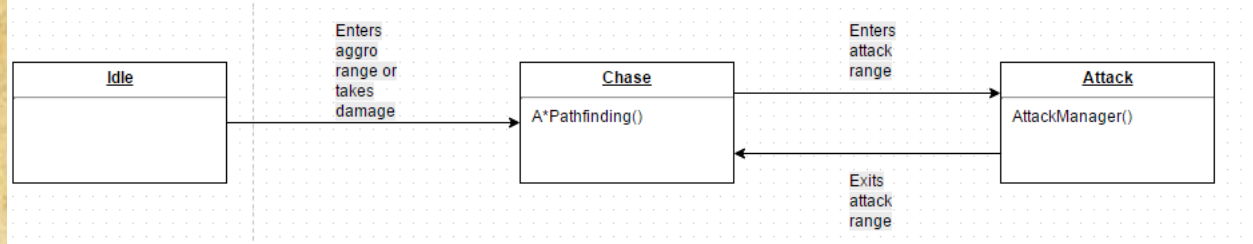
Berserker Rage



This skill causes the barbarian to gain attack speed and movement speed for a small amount of time. Each level in this skill causes the hero to move 10% faster and attack 5% faster. This is represented by the above icon in the skill tree and in game.

Enemies

State Diagram



Skeletons



Skeletons are the basic enemy unit found in the area surrounding the town and graveyard. They come in 4 types stylistically but only have 2 different classes. Each class has one ability and all classes have a small health pool.

Mage Skeleton

The mage skeleton is purple and wears a wizard hat. They have the ability to revive their fallen skeletal comrades with a moderate cooldown after each revive.

Combat Skeletons

All other skeletons are combat skeletons. They carry weapons and do a small amount of damage when in range of the player.

Trolls



Trolls are a more powerful enemy unit than the skeletons. They have two attacks which both hit for more damage and have a slightly larger health pool.

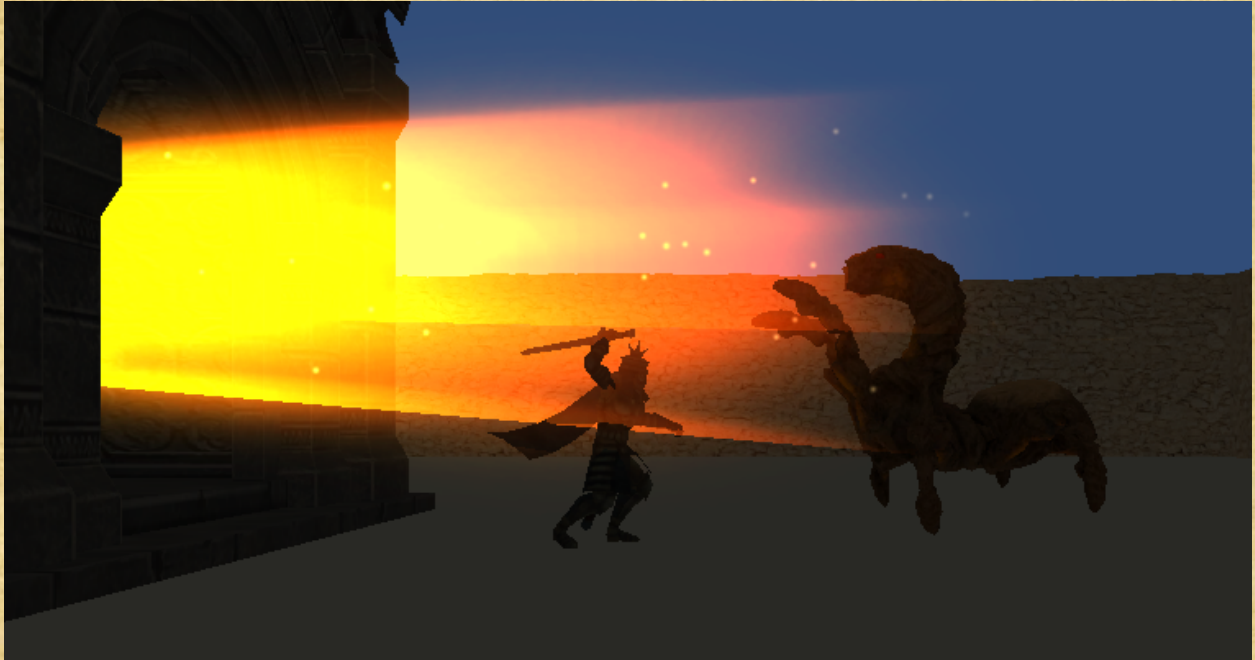
Jump Punch

The jump punch is the basic troll attack and does twice the damage of a skeleton attack.

Double Punch

Double punch is a more powerful attack that does 3 times the damage of the skeletons over 2 intervals.

Cave Worm



The Cave Worm is another single attack enemy that hunts the player while they are in the maze. They have slightly larger health pool than the troll.

Attack

The Cave Worm's attack does the same damage as the Troll's double punch but all at one time.

Demon



The demon is the boss of the game. He has 3 powerful attacks and a very large health pool making him very hard to kill. Attacks are chosen by a random number generator with roughly equal probability.

Swipe

This attack does 10 times the damage of the skeletons' attacks if the player is targeted and within range.

Pound

Pound is the weakest of the demon's attacks, doing about 5 times the damage of the skeletons. It is an area attack with an effect showing the area affected.

Scream/Rain Fire

This is a damage over time attack. It only damages the player if they walk through the fire that is dropped during rain fire and triggered by the demon's scream. The amount of damage is variable depending on when the player enters the fire and ticks for 5 times the damage of the skeleton every second for up to 10 seconds.

Items

Consumables

Consumable items are items that have a limited number of uses. This is represented as a charge count. When the item is used, the charge count is decreased. When an item's charge count reaches zero, it is rendered unusable and disappears from your inventory. An example of a consumable is a health potion that restores hitpoints to the user.

Equipment Items

_____ Equipment items allow for users to equip them and use them over the course of the game. Equipment items might have various effects that they can apply (frost damage or fire damage for example), and can only be used by being equipped to certain slots. Weapons generally go in the left and right hand slots, while armor goes on the body slot, for example. Equipment items come in a wide variation of stats meaning that their cooldown, damage, and effects are randomly generated, potentially with huge variance.