

Testing Plan

Unit Testing

- Floor Switch
 - Test turning a switch on and off
- Bow
 - Test that you can build bow
 - Test that durability is correct
 - Test bow durability has decreased
 - Test bow is broken when durability reaches 0
- Door
 - Test locking and unlocking
- Sword
 - Test sword is added to the inventory when collected
 - Test that durability of sword matches the configuration file
 - Test that durability of the sword decreases accurately
 - Test sword is “broken” when durability reaches 0
- Shield
 - Test building a shield – with 2 wood and 1 treasure
 - Test building a shield – with 2 wood and 1 key
 - Test shield durability
 - Test shield durability decreasing after using
 - Test shield “broken” when durability reaches 0
- Bomb
 - Test Bomb is in an unused state when created
 - Test bomb has a used state
 - Test different radius of bomb detonation
 - 0 = only detonate on the spot
- Door
 - Test always in a locked state when created

Integration Testing

- Floor Switch – boulder
 - Test that boulders can be used to turn switches on and off
 - Test that other than boulders other entities are unable to turn switches on and off
- Player
 - Test Attack Power increases with weapons
 - Test damage taken lessens with shield
- Enemies
 - Test Attack power decreases when player has shield
- Spawners
 - Test spawners can be blocked by boulder
- Potions
 - Test potions can be stacked
- Key-Door
 - Doors are locked and can only be unlocked by the associated key

System-Unit Testing via controller

- Collectables
 - Test that collectable entities can be picked up
 - Potions, bombs, treasures, wood, sword

- Bow
 - Test that bow is removed from inventory after being broken
- Shield
 - Test that shield is removed from inventory after being broken
- Sword
 - Test sword is removed from inventory after being broken
- Mercenary
 - Test mercenary movement
 - Test mercenary battles player and then mercenary dies
 - Test mercenary battles player and then player dies
 - Test mercenary successfully bribed and follows player
 - Test mercenary unsuccessfully bribed
- Portal
 - Test basic teleport successful
 - Test complex teleport with multiple surrounding portals
- Potions
 - Test that once potion is used it is no longer in inventory
 - Test that once potion is used, Player status changes
 - Testing potions can queue up
- Zombies
 - Test single zombie movement and distance that it travelled
 - Test multiple zombie movement and distance that it travelled
- Zombie Toast Spawner
 - Testing the zombie spawn rate along with accuracy → whether a zombie is spawned or not
 - Test that a blocked spawner would result in no zombies getting spawned
 - Test zombies spawning from multiple zombie toast spawners
 - Test that zombies are spawned, and those zombies have correct movement behaviour
- Spider
 - Test that a spider spawns / doesn't spawn, according to spider_spawn_rate
 - Test spider position and movement after one tick
 - Test spider's full circular path
 - Test spider movement when its path is blocked by 2 boulders
 - Test spider's movement when it's blocked by a boulder on each side of the circular path
 - Test spider movement after its path after an obstructing boulder has been removed
 - Test spider spawn rate, by varying config files
- Door
 - Test doors can be unlocked with a key
 - Test without key door remains locked
 - Test incorrect key cannot unlock door
 - Test door remains open after unlocking
- Key
 - Test player cannot pick up more than one key
 - Test key disappears after used
 - Test after key is used can pick up another key
- Battles
 - Test player vs spider
 - Test player vs zombie
 - Test player is killed
 - Test player vs multiple spiders
 - Test spider is killed and removed from inventory
 - Test player with sword vs spider
 - Test player with shield vs spider

- Test player with bow vs Spider
- Test player with sword, bow and shield vs spider
- Test all weapons used and broken
- Test ally increases player's points

System-Integration Testing via controller

- Movement – obstacle
 - Test Player cannot move through walls
- Portal – Inventory
 - Test player can collect treasure after teleporting on top of it
- Battles – Potion
 - Test that when a Player drinks a potion and then becomes invincible, when they battle enemies (e.g., Zombies), all battles are won instantly
 - Test that when invincible potion is active, no battles can occur, despite encountering enemies
- Zombie – Boulder – Walls
 - Test zombie movement when they encounter obstacles such as boulders and walls
- Weapons – inventory
 - Test that a broken sword is removed from inventory
- Spider – Obstacle (Boulder)
 - Test that spider movement is restricted when spawned under a boulder
 - Test that spiders reverse when encountering a boulder
 - Test that spiders are stuck when wedged between two boulders
 - Test that after being stuck between two boulders, if one of them is removed the spider will go back to a full path
- Bomb – Boulder – Switch
 - Test when boulder is on top of switch and a used bomb is located cardinally adjacent, the bomb will detonate, and remove all adjacent entities except player
 - Test that an inactive switch will not trigger a bomb, even when a used bomb is placed adjacent
- Bomb
 - When detonate, destroys everything within the radius specified, except for player

Useability Tests via Front-end

Creating different configurations and dungeons for different tests

- Bomb
 - Place bomb where there is a variety of entities