

# Testing Material

## Test: Enemy\_AttackType

### **Id:Enemy\_AttackType\_1.0**

*Description:* Tests that when an enemy with AttackType = TOUCH touches the player an amount of health equal to TouchDamage is removed from the player.

*Related Requirement:* 5.4 “If melee enemies touch the player character, the player character will receive damage based on the type of enemy.”

*Category:* Functional, Dynamic, GreyBox

*Status:* PASS

**Test:** Moved player into enemy with AttackType = Touch. The player received damage equal to TouchDamage.



Before Collision



After Collision

**Result:** Test Passed. No action required.

### **Id:Enemy\_AttackType\_1.1**

*Description:* Tests that when an enemy with AttackType = RANGE touches the player an amount of health equal to Projectile.damage is removed from the player.

*Related Requirement:* 5.6 “If a player character touches a projectile shot by an enemy, the player character will receive damage.”

*Category:* Functional, Dynamic, GreyBox

*Status:* PASS

**Test:** Moved player into enemy Projectile. The player received damage equal to Projectile.damage.



Before Collision



After Collision

**Result:** Test passed. No action required.

## Test: Enemy\_MovementType

### **Id:Enemy\_MovementType\_1.0**

*Description:* Tests that an enemy with MovementType = STATIC doesn't move.

*Related Requirement:* 5.5 “Ranged enemies may move, and will shoot projectiles at the player character.”

*Category:* Functional, Dynamic, GreyBox

*Status:* PASS

**Test:** Walk around a room with enemies. Some move randomly, some follow the player, and some do not move. Due to their static nature, screenshots do not show this, and have been omitted accordingly.

**Results:** Test passed. No action required.

### **Id:Enemy\_MovementType\_1.1**

*Description:* Tests that an enemy with MovementType = RANDOM moves randomly.

*Related Requirement:* 5.5 “Ranged enemies may move, and will shoot projectiles at the player character.”

*Category:* Functional, Dynamic, GreyBox

*Status:* PASS

**Test:** Walk around a room with enemies. Some move randomly, some follow the player, and some do not move. Due to their static nature, screenshots do not show this, and have been omitted accordingly.

**Results:** Test passed. No action required.

### **Id:Enemy\_MovementType\_1.2**

*Description:* Tests that an enemy with MovementType = FOLLOW follows the player.

*Related Requirement:* 5.5 “Ranged enemies may move, and will shoot projectiles at the player character.”

*Category:* Functional, Dynamic, GreyBox

*Status:* PASS

**Test:** Walk around a room with an enemies. Some move randomly, some follow the player, and some do not move. Due to their static nature, screenshots do not show this, and have been omitted accordingly.

**Results:** Test passed. No action required.

## Test: Enemy\_EnemyShotType

### **Id:Enemy\_EnemyShotType\_1.0**

*Description:* Tests that an enemy with EnemyShotType = SINGLE\_MOVEMENT shoots in the direction of the enemy's motion.

*Related Requirement:* 5.5 “Ranged enemies may move, and will shoot projectiles at the player character.”

**Category:** Functional, Dynamic, GreyBox

**Status:** PASS

**Test:** Some enemies do shoot in the direction of their motion. Due to their static nature, screenshots do not show this, and have been omitted accordingly.

**Results:** Test passed. No action required.

#### **Id:Enemy\_EnemyShotType\_1.1**

*Description:* Tests that an enemy with EnemyShotType = SINGLE\_TOWARDS\_PLAYER shoots in the direction of the Player.

*Related Requirement:* 5.5 “Ranged enemies may move, and will shoot projectiles at the player character.”

**Category:** Functional, Dynamic, GreyBox

**Status:** PASS

**Test:** Some enemies do shoot in the direction of their motion. Due to their static nature, screenshots do not show this, and have been omitted accordingly.

**Results:** Test passed. No action required.

#### **Id:Enemy\_EnemyShotType\_1.2**

*Description:* Tests that an enemy with EnemyShotType = TRIPLE\_TOWARDS\_PLAYER shoots three projectiles in the direction of the Player.

*Related Requirement:* 5.5 “Ranged enemies may move, and will shoot projectiles at the player character.”

**Category:** Functional, Dynamic, GreyBox

**Status:** Pass

**Test:** Bosses that have this shot type do fire three projectiles in the direction of the player. Due to their static nature, screenshots do not show this, and have been omitted accordingly.

**Results:** Test passed. No action required.

## Test: PlayerCharacter\_PlayerShotType

#### **Id:PlayerCharacter\_PlayerShotType\_1.0**

*Description:* Tests that a Player with PlayerShotType = SINGLE shoots a single projectile in the direction of the arrow key pressed.

*Related Requirement:* 1.1 “The player character will have a ranged attack.”

**Category:** Functional, Dynamic, GreyBox

**Status:** PASS

**Test:** Press an arrow key in the game while the Player has PlayerShotType = SINGLE, a single projectile is projected in the direction of the arrow key pressed.

**Results:** Test passed. No action required.

### **Id:PlayerCharacter\_PlayerShotType\_1.1**

*Description:* Tests that a Player with PlayerShotType = TRIPLE shoots three projectiles in a spread around the direction of the arrow key pressed.

*Related Requirement:* 1.1 “The player character will have a ranged attack.”

*Category:* Functional, Dynamic, GreyBox

*Status:* PASS

**Test:** Press an arrow key in the game while the Player has PlayerShotType = TRIPLE, three projectiles are projected in a spread around the direction of the arrow key pressed.

**Results:** Test passed. No action required.

### **Test: PlayerCharacter\_attackInterval**

#### **Id:PlayerCharacter\_attackInterval\_1.0**

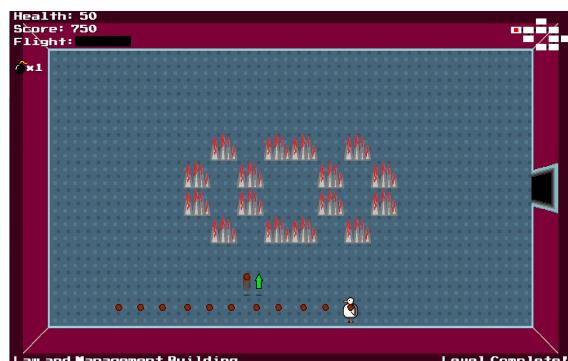
*Description:* Tests that the rate of fire pickup actually changes attackInterval and that the game behaves accordingly (rate of fire increases).

*Related Requirement:* 1.1 “The player character will have a ranged attack.”

*Category:* Functional, Dynamic, GreyBox

*Status:* PASS

**Test:** Walk into the Rate of Fire pickup. Rate of fire increases



Rate of fire before pickup



Rate of fire after pickup

**Results:** Test passed. No action required.

### **Test: Obstacle\_Damage**

#### **Id: Obstacle\_Damage\_1.0**

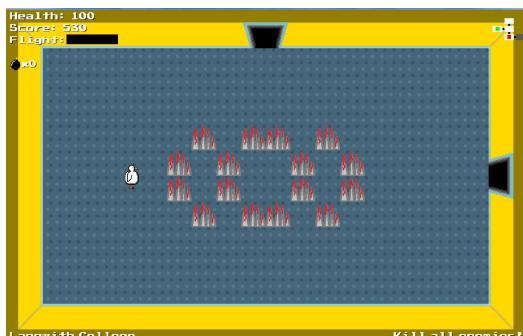
*Description:* Tests that damaging obstacles remove an amount of health equal to touchDamage from the player.

*Related Requirement:* 5.2 “The game must contain at least one random obstacle.”

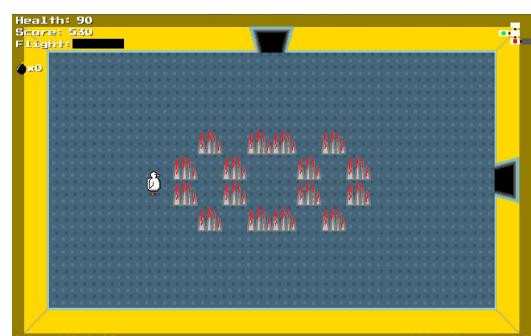
*Category:* Functional, Dynamic, GreyBox

*Status:* PASS

**Test:** Walk into a damaging obstacle. Health decreases by amount touchDamage and duck sprite flashed.



Before Collision



After Collision

**Results:** Test passed. No action required.

#### **Id: Obstacle\_Damage\_1.1**

*Description:* Tests that damaging obstacles do not damage enemies

*Related Requirement:* 5.2 “The game must contain at least one random obstacle.”

*Category:* Functional, Dynamic, GreyBox

*Status:* PASS

**Test:** Enter a room containing damaging obstacles and enemies. Enemies do not take damage when colliding with damaging obstacles..

**Results:** Test passed. No action required.

#### **Id: Pause\_Menu\_0.1**

*Description:* Tests that if “P” is pressed, the game is paused and if pressed again, the game becomes unpause.

*Related Requirement:* 16 “The user must be able to pause the game”.

*Category:* Functional, Dynamic, Black-Box

*Status:* PASS



Before pressing “P”

After pressing “P”

**Results:** Test passed, no further action required.

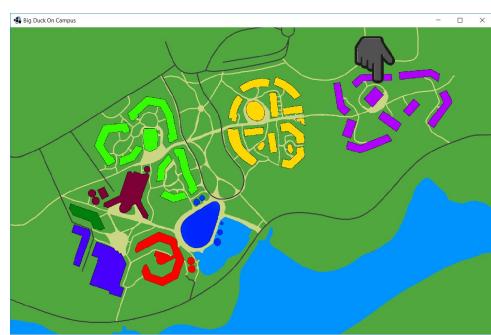
**Id:** Quit\_Game\_0.1

**Description:** When “P” is pressed, the game menu appears and the user can go to the level selector, then press “Esc” twice to quit the game.

**Related Requirement:** 16.1 The user must be able to quit the pause menu

**Category:** Functional, Dynamic, Black-Box

**Status:** PASS



After pressing “P”

After pressing “Levels”



After pressing “Esc”

**Results:** Test passed, no further action needed.

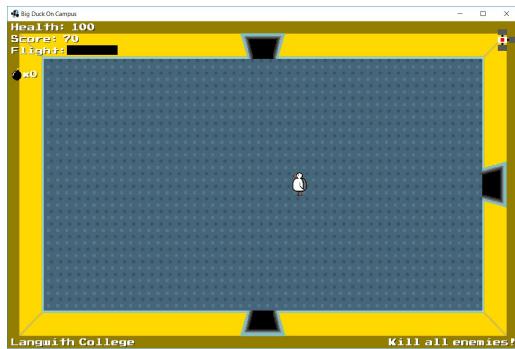
**Id: Game\_Map\_0.1**

*Description:* Tests that a level clarifies the level the player is in.

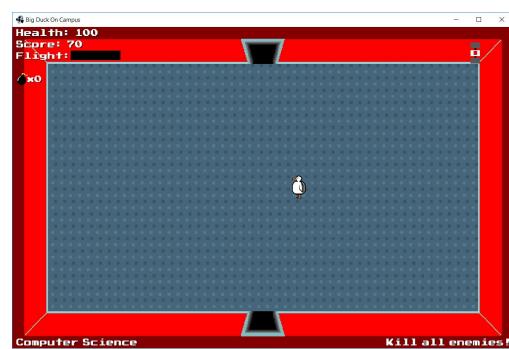
*Related Requirement:* 4.2 “The GUI must show the location of the player within the University”.

*Category:* Functional, Dynamic, Black-Box

*Status:* PASS



Langwith College Level



Computer Science Level

**Results:** Test passed, no further action needed.

**Id: Game\_Map\_1.1**

*Description:* Tests that once a level has been completed it cannot be replayed again.

*Related Requirement:* 4.2 “The GUI must show the location of the player within the University”.

*Category:* Functional, Dynamic, Black-Box

*Status:* PASS



Level before completing



Level after completing

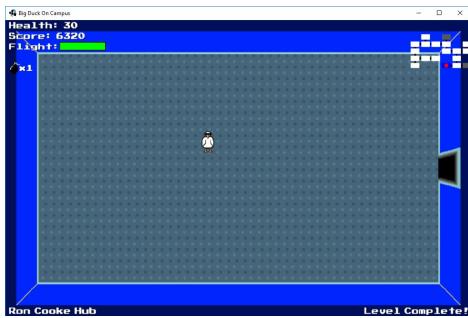
**Id: End\_Game\_0.1**

*Description:* Tests if the game ends once every area has been completed.

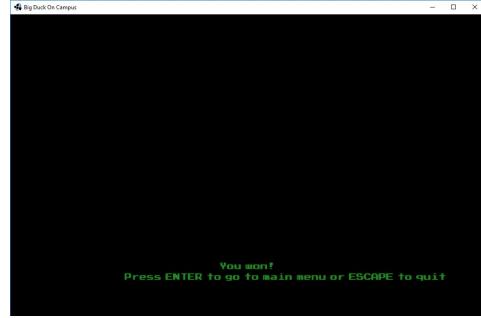
*Related Requirement:* 10 “The game must end when every area of the university has been conquered or the player has run out of health”.

*Category:* Functional, Dynamic

*Status:* PASS



End of final boss battle



Winning screen after completing the game

**Id: End\_Game\_1.1**

*Description:* Tests if the game ends once the player runs out of health

*Related Requirement:* 10 “The game must end when every area of the university has been conquered or the player has run out of health”.

*Category:* Functional, Dynamic

*Status:* PASS



Player with 10 health, about to die



After death, game over screen

**Id: Save\_Game\_0.1**

*Description:* Tests if the game can be saved by the player.

*Related Requirement:* 2 “The game must be able to save its state and load it at a later point in time, resuming from where it was saved”.

*Category:* Functional, Dynamic, Black-Box

*Status:* PASS



**Pause Menu (Not saved)**



**Pause Menu (Saved)**

**Results:** Test passed, no further action needed.

**Id: Save\_Game\_1.1**

**Description:** Tests if the a previous save can be loaded by the player.

**Related Requirement:** 2 “The game must be able to save its state and load it at a later point in time, resuming from where it was saved”.

**Category:** Functional, Dynamic, Black-Box

**Status:** PASS



**Main Menu  
(Selecting Load)**



**Loading Save Menu**

**Id: Save\_Game\_1.2**

**Description:** Tests if starting a new game correctly creates or overwrites saves.

**Related Requirement:** 2 “The game must be able to save its state and load it at a later point in time, resuming from where it was saved”.

**Category:** Functional, Dynamic, Grey Box

**Status:** PASS

When 4 saves already exist:

**Expected:** save\_0.json increases in size as it is overwritten

**Before:** All files 1KB, contain single word ‘empty’.

Name	Date modified	Type	Size
save_0.json	16/02/2016 14:36	JSON File	1 KB
save_1.json	16/02/2016 14:37	JSON File	1 KB
save_2.json	16/02/2016 14:37	JSON File	1 KB
save_3.json	16/02/2016 14:37	JSON File	1 KB

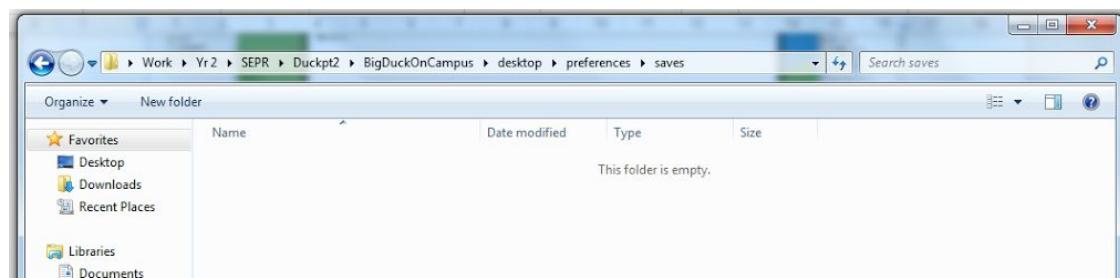
**After:** save\_0.json, the one automatically overwritten when launching a New Game, has been overwritten and now contains the save data, hence it is now over 400 kb.

Name	Date modified	Type	Size
save_0.json	16/02/2016 14:39	JSON File	465 KB
save_1.json	16/02/2016 14:37	JSON File	1 KB
save_2.json	16/02/2016 14:37	JSON File	1 KB
save_3.json	16/02/2016 14:37	JSON File	1 KB

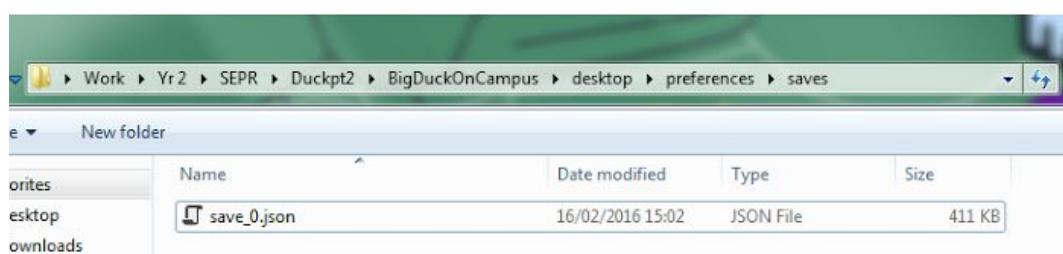
When 0 saves already exist:

**Expected:** Create a new file called 'save\_0.json'

**Before:** The saves folder is empty as there are currently no saves.



**After:** save\_0.json has been created.



When one save already exists:

**Expected:** Create a new file called 'save\_1.json'

**Before:** One savegame already exists, I replaced the contents with the string 'empty' to make it stand out from the new savegame by having a size of 1KB.

**After:** save\_1.json has been created.

	Name	Date modified	Type	Size
	save_0.json	16/02/2016 15:05	JSON File	1 KB

When 2 saves already exist:

**Expected:** Create a new file called 'save\_2.json'

**Before:** Edited the existing files to be 1KB for comparison

	Name	Date modified	Type	Size
	save_0.json	16/02/2016 15:05	JSON File	1 KB
	save_1.json	16/02/2016 15:14	JSON File	1 KB

**After:** save\_2.json has been created.

	Name	Date modified	Type	Size
	save_0.json	16/02/2016 15:05	JSON File	1 KB
	save_1.json	16/02/2016 15:14	JSON File	1 KB
	save_2.json	16/02/2016 15:15	JSON File	389 KB

When 3 saves already exist:

**Expected:** Create a new file named 'save\_3.json'

**Before:** Edited the existing files to be 1KB for comparison

Work > Yr2 > SEPR > Duckpt2 > BigDuckOnCampus > desktop > preferences > saves				
	Name	Date modified	Type	Size
rites				
sktop	save_0.json	16/02/2016 15:05	JSON File	1 KB
wnloads	save_1.json	16/02/2016 15:14	JSON File	1 KB
cent Places	save_2.json	16/02/2016 15:17	JSON File	1 KB

**After:** save\_3.json has been created.

Work > Yr2 > SEPR > Duckpt2 > BigDuckOnCampus > desktop > preferences > saves				
	Name	Date modified	Type	Size
rites				
sktop	save_0.json	16/02/2016 15:05	JSON File	1 KB
wnloads	save_1.json	16/02/2016 15:14	JSON File	1 KB
cent Places	save_2.json	16/02/2016 15:17	JSON File	1 KB
aries	save_3.json	16/02/2016 15:17	JSON File	421 KB

### **Id: Load\_Game\_1.0**

**Description:** Tests if saved games show up correctly for loading.

**Related Requirement:** 2 “The game must be able to save its state and load it at a later point in time, resuming from where it was saved”.

**Category:** Functional, Dynamic, Black Box

**Status:** PASS

If no saved games exist:

**Expected:** No saves available for loading in the gui.

**Actual:**



If saved games exist:

**Expected:** 2 Existing save games show up (2 save games had been created)

**Actual:**



Test success, saves available for loading.

### **Id: Load\_Game\_1.1**

*Description:* Tests whether loading a previously saved game loads your progress.

*Related Requirement:* 2 “The game must be able to save its state and load it at a later point in time, resuming from where it was saved”.

*Category:* Functional, Dynamic, Black Box

*Status:* **PASS**

**Expected:** Save should have a completed Constantine. Score should be 400, as this is the score I had achieved at the point of saving.

**Actual:** Constantine was completed, player score was 400. Screenshots have been omitted as it was difficult to capture a screenshot that demonstrated this.

### **Id: Settings\_Button\_1.0**

*Description:* Tests if the settings screen loads properly

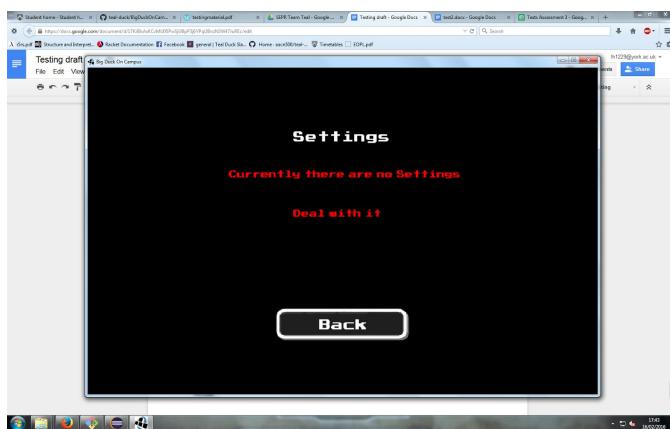
*Related Requirement:*

*Category:* Functional, Dynamic, Black Box

*Status:* **PASS**

**Expected:** Screen stating that settings have yet to be incorporated.

**Actual:**



### **Id: Enemy\_Type\_1.0**

*Description:* Tests that the 2 major distinct enemy types are Melee and Ranged.

*Related Requirement:* 5.3, "Enemies will be either melee or ranged."

*Category:* Functional, Dynamic, Black Box

*Status:* PASS



Both dealt melee damage, the green shirted enemy was also capable of firing projectiles.

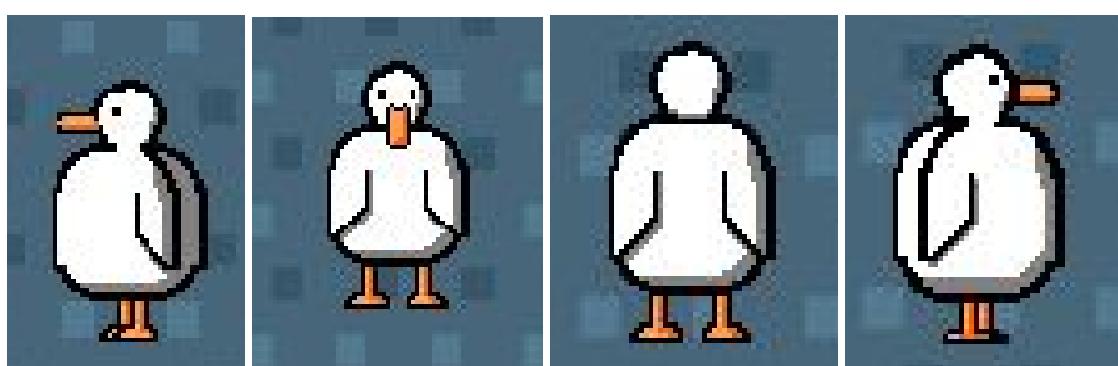
### **Id: Sprite\_Direction\_1.0**

*Description:* Tests that the Duck sprite will face in the direction of movement.

*Related Requirement:*

*Category:* Functional, Dynamic, Black Box

*Status:* PASS



Left motion

Downwards motion

Upwards motion

Right motion

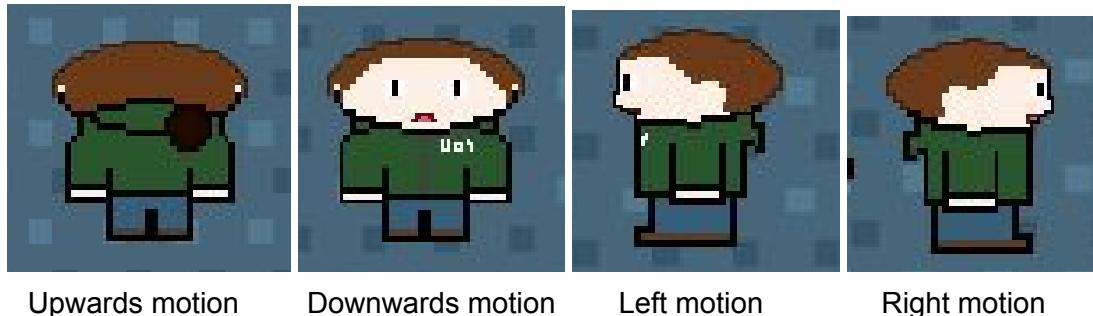
**Id: Sprite\_Direction\_1.1**

*Description:* Tests that the Ranged Enemy sprite will face in the direction of movement.

*Related Requirement:*

*Category:* Functional, Dynamic, Black Box

*Status:* PASS



Upwards motion

Downwards motion

Left motion

Right motion

**Id: Sprite\_Direction\_1.2**

*Description:* Tests that the Melee Enemy sprite will face in the direction of movement.

*Related Requirement:*

*Category:* Functional, Dynamic, Black Box

*Status:* PASS



Left motion

Right motion

Downwards motion

Upwards motion

**Id: Sprite\_Direction\_1.3**

*Description:* Tests that the Swimming Duck sprite will face in the direction of movement.

*Related Requirement:*

*Category:* Functional, Dynamic, Black Box

*Status:* PASS



Right motion

Upwards motion

Left motion

Downwards motion

### **Id: Doors\_Open\_1.0**

*Description:* Tests that the Doors open when all enemies have been killed.

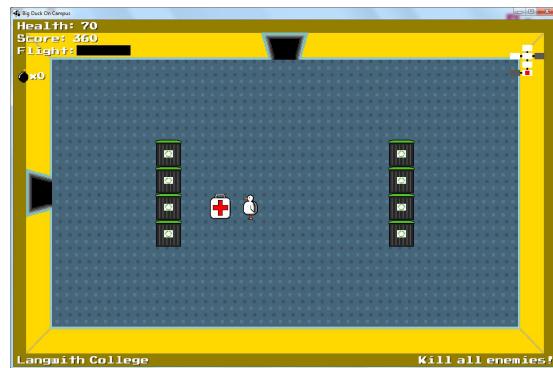
*Related Requirement:* 5.3, “Enemies will be either melee or ranged.”

*Category:* Functional, Dynamic, Black Box

*Status:* PASS



**Id:**



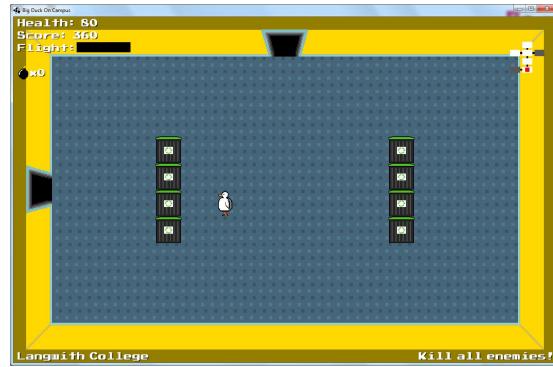
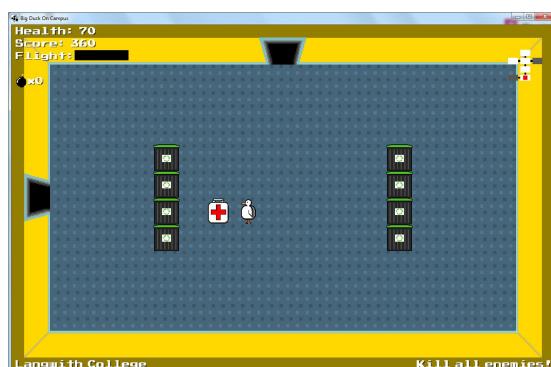
### **Health\_Pickup\_1.0**

*Description:* Tests that Player Health increases when a health pickup is collected.

*Related Requirement:* 8.2, “The player must have at least 6 other abilities which can be obtained during gameplay.”

*Category:* Functional, Dynamic, Black Box

*Status:* PASS



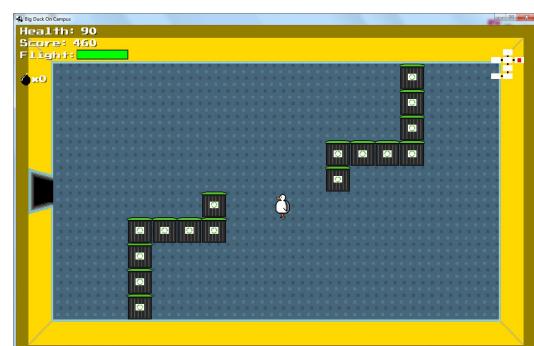
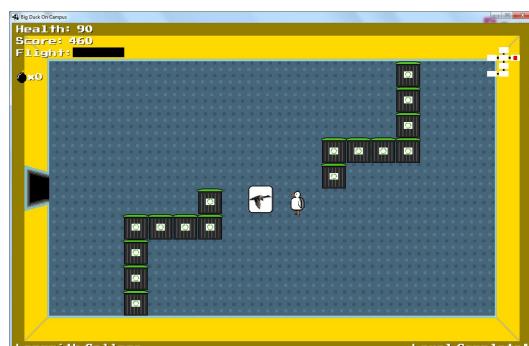
### **Id: Flight\_Pickup\_1.0**

*Description:* Tests that Player gains Flight Ability when flight pickup is collected.

*Related Requirement:* 8.2, “8.2. The player must have at least 6 other abilities which can be obtained during gameplay.”

*Category:* Functional, Dynamic, Black Box

*Status:* PASS



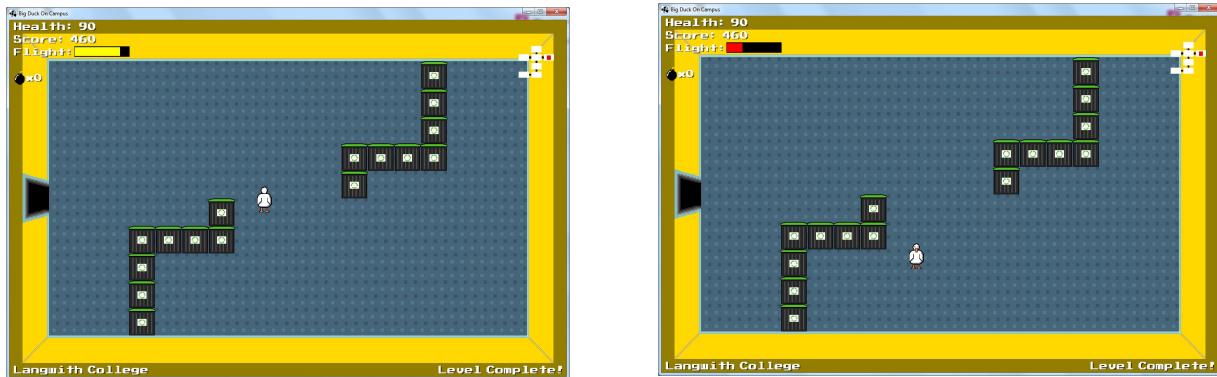
## **Id: Flight\_Pickup\_1.0**

*Description:* Tests that Player flight bar drains when flight is used.

*Related Requirement:* 8.2, "8.2. The player must have at least 6 other abilities which can be obtained during gameplay."

*Category:* Functional, Dynamic, Black Box

*Status:* PASS



## **Id: Boss\_Door\_Eyes\_1.0**

*Description:* Tests that the red eyes on the Boss Room door are removed after the defeat of the Boss.

*Related Requirement:* 18, "The game must make all dangers visible."

*Category:* Functional, Dynamic, Black Box

*Status:* PASS



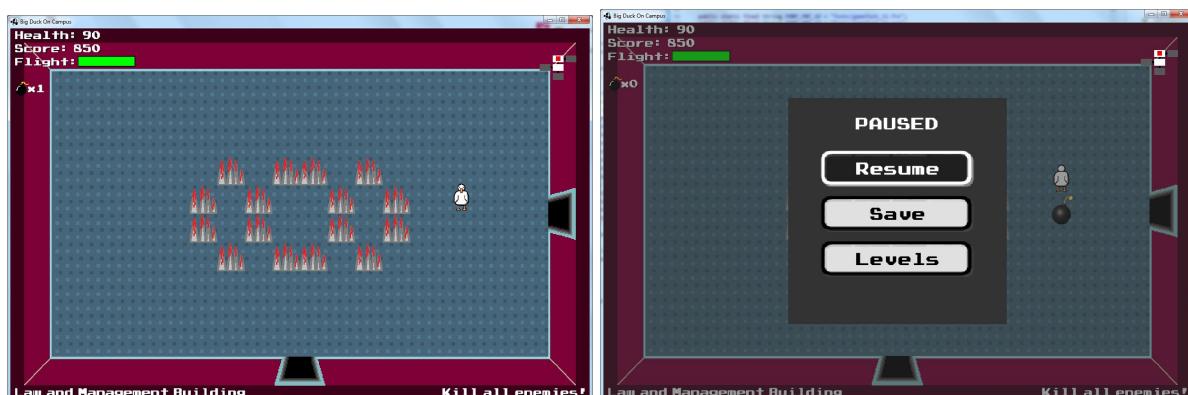
## **Id: Bomb\_Test\_1.0**

*Description:* Tests that pressing the 'E' key will deploy a bomb.

*Related Requirement:* 8, "The player must have several special abilities."

*Category:* Functional, Dynamic, Black Box

*Status:* PASS



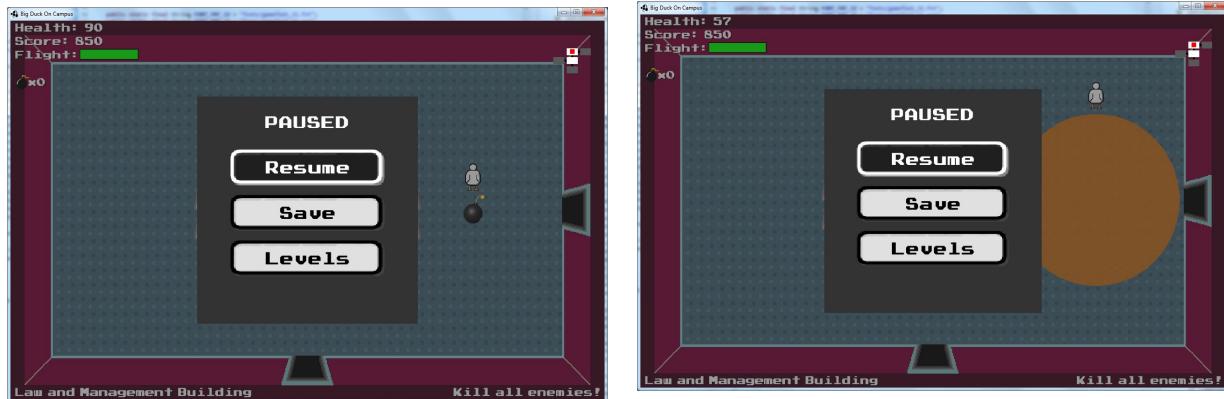
## **Id: Bomb\_Test\_1.1**

*Description:* Tests that the bomb will explode after a time delay, causing knockback and damage, and that the blast radius is visible.

*Related Requirement:* 8, “The player must have several special abilities.”

*Category:* Functional, Dynamic, Black Box

*Status:* PASS



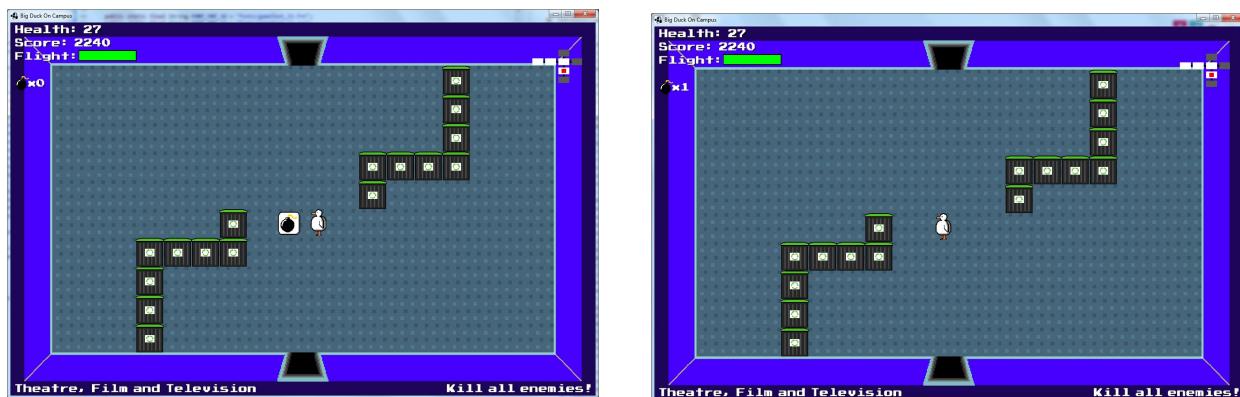
## **Id: Bomb\_Test\_1.2**

*Description:* Tests that the bomb counter increments when a bomb is picked up.

*Related Requirement:* 8, “The player must have several special abilities.”

*Category:* Functional, Dynamic, Black Box

*Status:* PASS



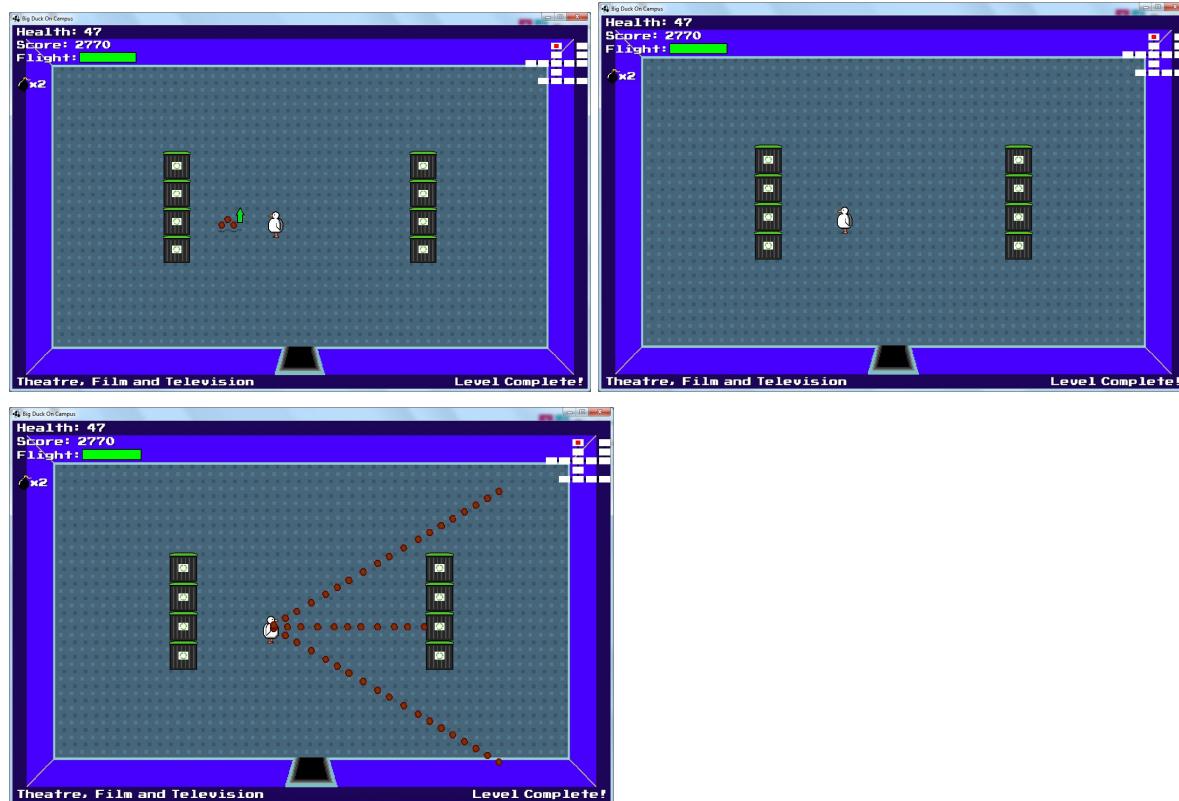
## **Id: Triple\_Shot\_1.0**

*Description:* Tests that the Triple Shot pickup can be picked up, and changes the projectile type.

*Related Requirement:* 8, “The player must have several special abilities.”

*Category:* Functional, Dynamic, Black Box

*Status:* PASS



## **Id: Flamethrower\_Test\_1.0**

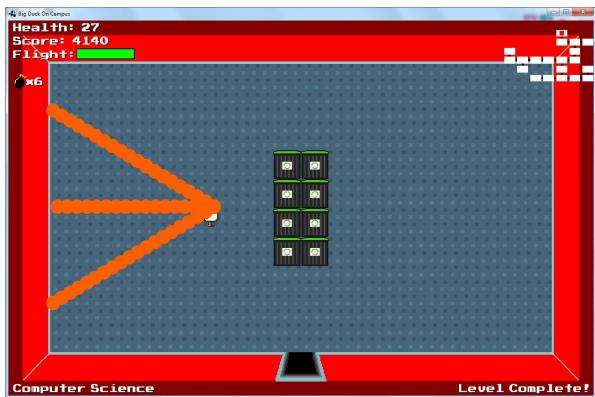
*Description:* Tests that the Flamethrower pickup can be picked up, and changes the projectile type.

*Related Requirement:* 8, “The player must have several special abilities.”

*Category:* Functional, Dynamic, Black Box

*Status:* PASS





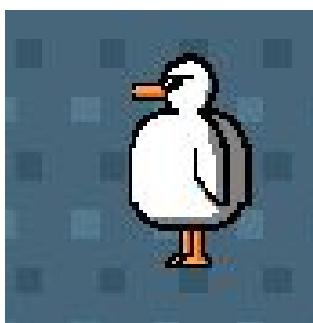
### **Id: Sunglasses\_Test\_1.0**

*Description:* Tests that the Sunglasses pickup can be picked up, and changes the Duck sprite to be wearing Sunglasses.

*Related Requirement:* 8, "The player must have several special abilities."

*Category:* Functional, Dynamic, Black Box

*Status:* PASS



Left motion



Right motion



Downwards motion

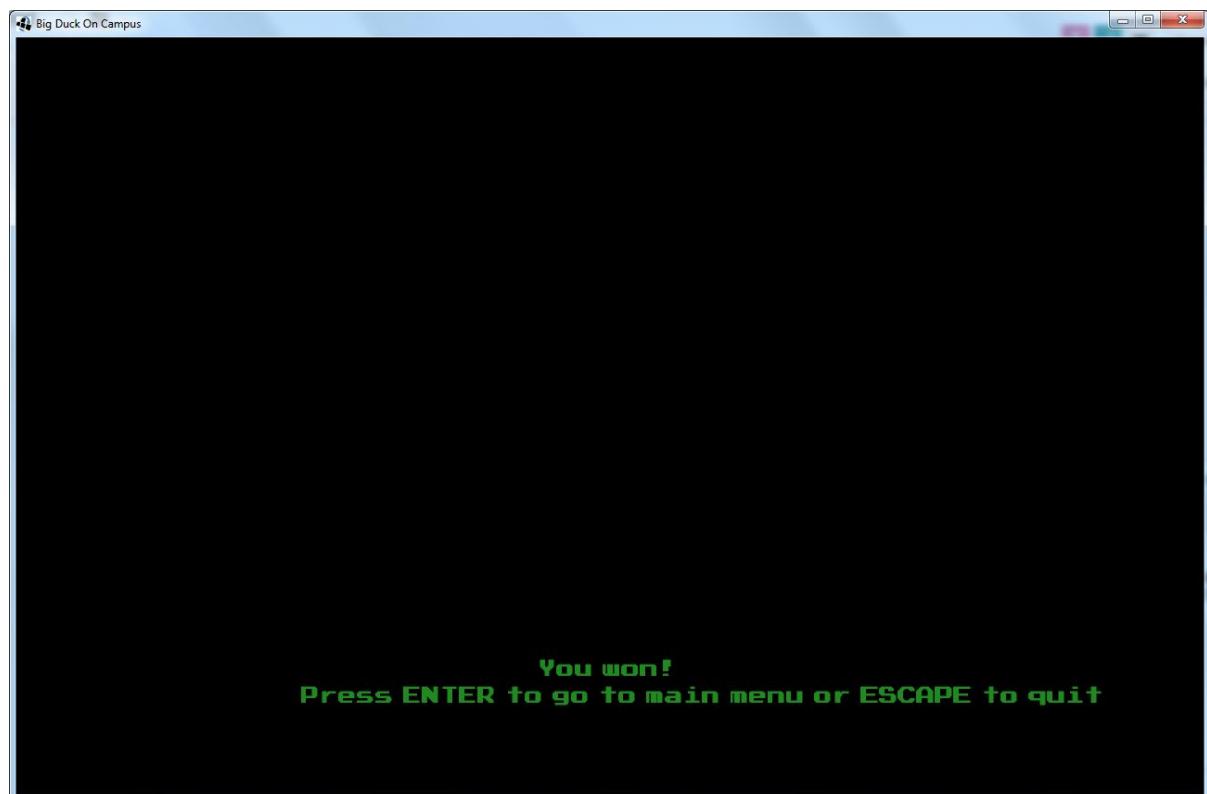
**Id: Win\_Condition\_1.0**

*Description:* Tests that the Win screen correctly displays after successfully completing all objectives.

*Related Requirement:* 10, “The game must end when every area of the university has been conquered or the player has run out of health.”

*Category:* Functional, Dynamic, Black Box

*Status:* **PASS**



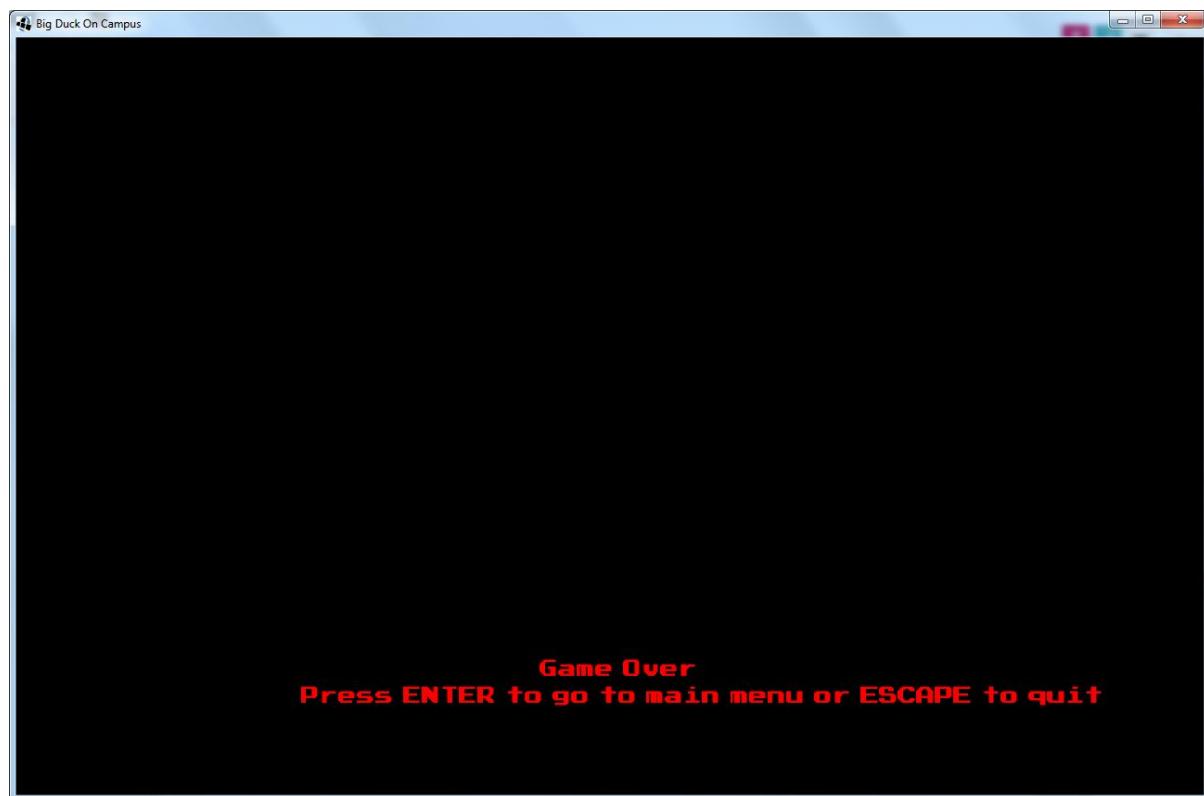
### **Id: Lose\_Condition\_1.0**

*Description:* Tests that the Game Over screen correctly displays after failing to complete a level or objective alive.

*Related Requirement:* 10, “The game must end when every area of the university has been conquered or the player has run out of health.”

*Category:* Functional, Dynamic, Black Box

*Status:* **PASS**



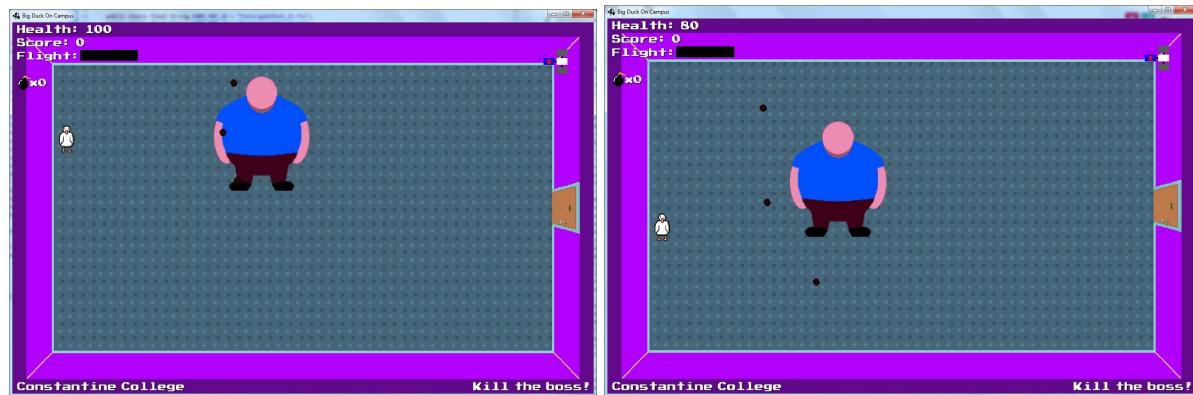
### **Id: Player\_Take\_Damage\_1.0**

*Description:* Tests that the player takes damage from enemy melee contact

*Related Requirement:* 5, “The game must present at least 5 obstacles, which may be physical obstacles or enemies.”

*Category:* Functional, Dynamic, Black Box

*Status:* **PASS**



Before melee contact

After melee contact

### **Id: Player\_Take\_Damage\_1.1**

*Description:* Tests that the player takes damage from enemy projectile contact

*Related Requirement:* 5, “The game must present at least 5 obstacles, which may be physical obstacles or enemies.”

*Category:* Functional, Dynamic, Black Box

*Status:* **PASS**



Before projectile contact

After projectile contact