# CS408: Incremental and Regression Testing

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1.1

The light blue boxes represent each individual module
The thin lines are vaguely which scene manages which
The thicker ones indicate input/output
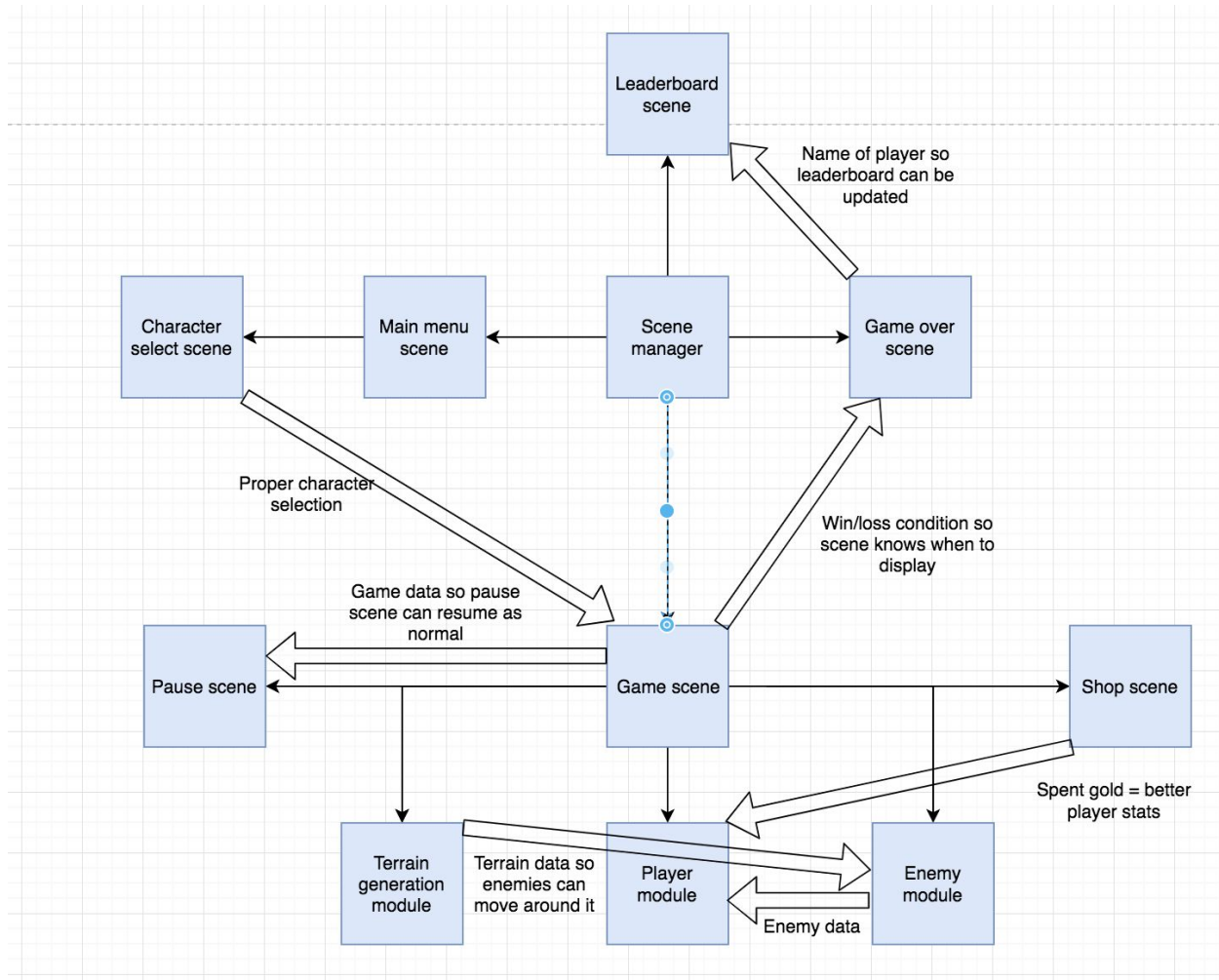
1.2
We choose to use the bottom-up testing method because each team member developed some specific functions related to the game. Test conditions are easier to create for each of us since we are testing a unit that we are responsible for. In addition, test results are easier to observe in this way.

2. Incremental and Regression Testing

Module	Player module

Incremental Testing

Defect No.	Description	Severity	How To Correct
1	Abilities for new player didn't interact well with new enemy	2	Change the way they were coded (was previously copied from old code)
2	New character could walk out of bounds	2	Add out-of-world collision to new character

Regression Testing

Defect No.	Description	Severity	How To Correct
1	Wrong sprite is displayed for character after choosing character.	3	Update characterChoosen variable to properly save correct sprite name.

module	Enemy module

Incremental Testing

Defect No.	Description	Severity	How To Correct
1	New enemies fireball didn't go towards the players direction	2	Alter the fireball code (was previously copied from the players own fireball)
2	Adding the new enemy cause the old enemies to not collide well with terrain	2	Alter the pathfinding algorithm

Regression Testing

Defect No.	Description	Severity	How To Correct
1	Enemies would not move toward new character	2	Use follow code from original character and implement it with the new character.

Module	Terrain generation module

Incremental Testing

Defect No.	Description	Severity	How To Correct
1	Terrain could not be placed beyond a certain X value on the terrain grid.	3	Edited the terrain grid to have a more extensive X axis for terrain placement.

Regression Testing

Defect No.	Description	Severity	How To Correct
1	When new enemy type was added, enemies didn't collide well with terrain	2	Tweak the enemy pathfinding algorithm to accompany the new enemy size
2	When screen size was changed, terrain couldn't be added in certain places	2	Alter the method used for creating terrain objects in the world

Module	Pause Scene

Incremental Testing

Defect No.	Description	Severity	How To Correct
1	Pause scene button would overlap with shop button when hovered over and wouldn't correctly pause the game.	2	Make the image for the pause button bloom less so it doesn't interfere with the shop button.

Regression Testing

Defect No.	Description	Severity	How To Correct
1	Changing the bloom size affected how big the the image appeared on screen making it hard to see.	3	Reset the image size for pause button after the pause button has been un-hovered.

Module	Shop scene

Incremental Testing

Defect No.	Description	Severity	How To Correct
1	When making max health cap so a shop item can be bought to increase it, hp would display negative after enemy hits player	3	Correctly update the hp in the game file.
2	When Q dmg increase was bought the max amount of times an invalid price was displayed instead of SOLD immediately after buying	3	Added a statement in to the bought code changing the text to SOLD

Regression Testing

Defect No.	Description	Severity	How To Correct
1	When adding the max health variable the potion could increment the health over max health	3	Added in if statement to set the hp to max health if it was going to be over it.
2	The SOLD statement would get changed back after opening the shop again	3	Added an if statement after initial creation of text to change it to SOLD if bought 3 times

Module	Main menu

Incremental Testing

Defect No.	Description	Severity	How To Correct
1	Main Menu leader sprite wouldn't interact with mouse hover	3	Change sprite physics to be interactive with Phaser
2	Main Menu wouldn't reset after a game ended	3	Deleted the scene after scene change to game or leaderboard then restarted after returning to main menu
3			

Regression Testing

Defect No.	Description	Severity	How To Correct
1	When changing the back button in the leaderboard scene, it would not redirect back to the menu	1	Code for redirecting was deleted while changing the button sprite. Readded code for redirection.

Module	Character select

Incremental Testing

Defect No.	Description	Severity	How To Correct
1	When selecting a character, the same character is chosen no matter the choice.	2	Add new function to check and save in a global var which character is chosen.

| 2 | Character select scene is entirely skipped when advancing from the main menu | 2 | Redirect where the menu sends the player (send to character select scene). |

Regression Testing

Defect No.	Description	Severity	How To Correct
1	When adding the HUD for the abilities, it change the selected character to the specific character HUD	2	Made new separate variables for the HUD display to disconnect it from the character sprite value.
2			

Module	Game over scene

Incremental Testing

Defect No.	Description	Severity	How To Correct
1	When restarting game the game over scene would cause the game scene to crash	2	Completely delete the game scene instead of just stopping and restarting
2	When game over scene is displayed the game information scene overlay is still there	2	Remove game info scene before displaying the game over scene
3	When going back to Main Menu from the Game Over scene caused the Main Menu to crash	2	Completely delete the main menu scene instead of just

			stopping and restarting

Regression Testing

Defect No.	Description	Severity	How To Correct
1	When correcting game scene crash problem it caused the game to crash because some variables were not properly initialized	1	each time the scene is redrawn manually initialize all vital variables
2	When correcting the game information overlay problem caused game information to be false on the following game	3	Reset game info when initializing the next game
3	When correcting the main menu crash it caused the next game scene to crash when character was touched by enemy	2	Delete the game scene and reset all variables when a new game is started

Module	Leaderboard scene

Incremental Testing

Defect No.	Description	Severity	How To Correct
1	Merge conflict resulted in the back button not being the correct sprite	3	Undo merge conflict, redo it correctly
2	When leaderboard was merged, main menu couldn't reach the leaderboard scene	2	Add a leaderboard button to the main menu (oversight)

Regression Testing

Defect No.	Description	Severity	How To Correct
1	When too many names were added from the game over scene, the list of names would overflow	2	Add a global constant that limits the amount of names we pull from the database
2	When new names were added from the game over scene, the order of names wasn't sorted properly	2	Gave the sorting algorithm a comparing function