

# Obsidian Ark

## Team 27 Incremental Testing and Regression Testing

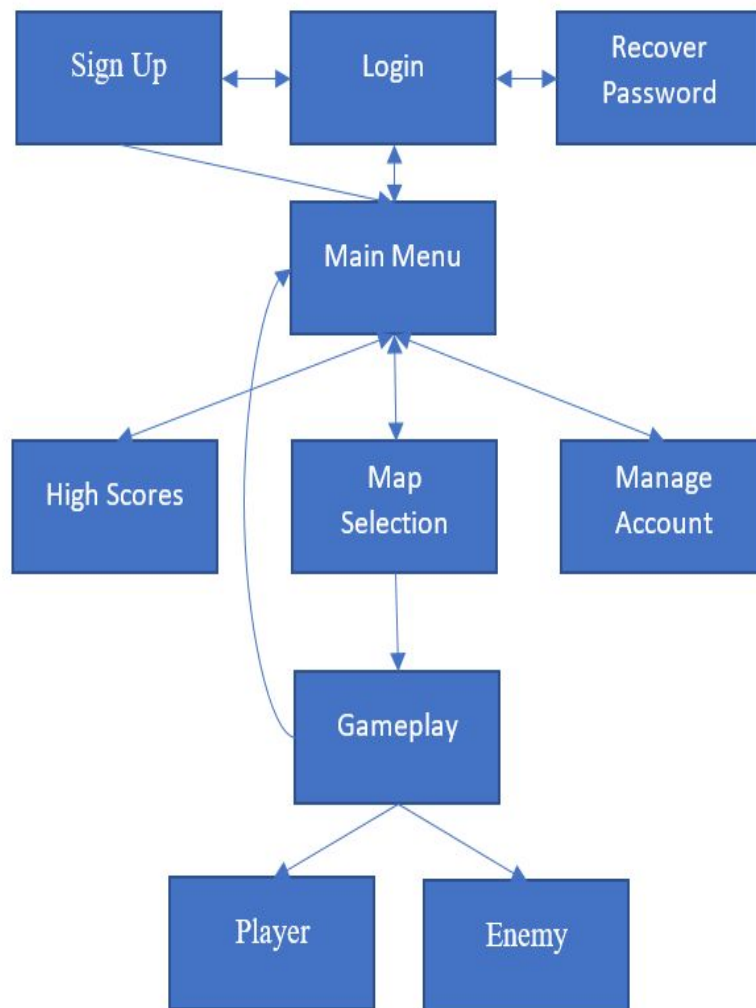
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### 1.

## Component Classification

### 1.1

#### Component Diagram



## Component Details

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### Login

- Is called by the main menu component and recover password component.
  - Calls the main menu component, sign up, and the recover Password component.
  - Gets username and password and checks database for user.
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### Sign Up

- Is called by the login component
  - Calls the main menu and login component
  - Gets new username and password and creates a new account in the database
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### Recover Password

- Is called by the login component.
  - Calls the login component.
  - Gets user email and sends information to reset password.
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### Main Menu

- Is called by the login, high scores, map selection, manage account components, and gameplay components.
  - Calls the login, high scores, map selection, and manage account components.
  - Gets the button the user presses and calls correct component
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### High Scores

- Is called by the main menu component.
  - Calls the main menu component.
  - Gets all scores from database and displays them
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### Manage Account

- Is called by the main menu component.
  - Calls the main menu component.
  - Gets new information from user and updates database
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### Map Selection

- Is called by the main menu component.
  - Calls the main menu component and the gameplay component.
  - Gets the map the user selects and loads that map
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## **Gameplay**

- Is called by the map selection component.
  - Calls the main menu, player, and enemy component.
  - Gets locations of players and enemies and updates map accordingly
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## **Player**

- Is called by the gameplay component.
  - Gets user control input and moves character/attacks accordingly
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## **Enemy**

- Is called by the gameplay component.
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## **1.2**

### **Incremental Testing Form**

We followed a top-down incremental testing procedure for our app. Since we were building a game, we wanted to test each component from the start, as if we were users progressing through the app's UI and gameplay. The primary game states branched off from one central state (Menu), which made it easier to understand the flow of the app and which components interact with each other. Finally, the primary gameplay was tested in a similar fashion - the player and enemy components were called from the gameplay component. Due to the parent/child nature of our components, we decided that a top-down testing procedure would be the best choice for the app.

## 2.

### Incremental and Regression Testing

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#### Module: Sign Up Component

##### Incremental Testing

Defect No.	Description	Severity	Solution
1	User could enter the game without creating an account	3	Check the login state before update to new state

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#### Module: Main Menu Component

##### Incremental Testing

Defect No.	Description	Severity	Solution
1	Menu music keeps playing after exiting menu.	1	Add stop function for music whenever game switches away from menu state

##### Regression Testing

Defect No.	Description	Severity	Solution
1	The asset of gameover still remains after returning to main menu	4	Add a clear function after gameover

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#### Module: High Score Component

##### Incremental Testing

Defect No.	Description	Severity	Solution
1	Global highscore and local highscore mass up together	2	Store and update two type of scores seperately
2	mLab Mongo cloud was incompatible with node driver	3	Revert to previous mongo driver version
3	Local highscores were resulting in duplicate database entries	1	Implement update checks inside Mongo post requests

### Regression Testing

Defect No.	Description	Severity	Solution
1	Failed to get global highscore crashes the game	1	Display nothing if fails
2	Socket data could not be send through Mongo client connection	3	Implement callback functions inside Mongo function
3	Highscore component had mixed visuals	1	Clear existing data cache before drawing new text to the component

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### Module: Map Selection Component

### Incremental Testing

Defect No.	Description	Severity	Solution
1	Selected map preview was sometimes partially obscured behind un-selected map previews	1	Bring selected map preview to top after changing map selections

2	Maps were not completely hidden off screen when the selection state started	2	Initialize maps not meant to be seen outside of the camera
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### Regression Testing

Defect No.	Description	Severity	Solution
1	Map failed to reset to forest1 when exiting gameplay.	3	Have map selection automatically be forest1 every time menu state starts

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## Module: Gameplay Component

### Incremental Testing

Defect No.	Description	Severity	Solution
1	Notification text shows after picking up a powerup never disappear	3	Set a timer for the text
2	mp3 music files is not supported by some browser	3	Add .ogg audio file option for browser
3	Powerups would stack on top of each other	2	Set a respawn timer
4	Powerups would not despawn after player had acquired maximum amount allowed	3	Destroyed item altogether once limit was hit
5	Player continued moving after dying	1	Set player velocities to 0 upon death
6	Player could continue attacking when paused	2	Add check for paused when attacking

### Regression Testing

Defect No.	Description	Severity	Solution
1	Unable to get foreground layer display in front of player	3	Create an object layer for foreground instead of tile layer
2	Player sprite too big to traverse map	3	Resize and shifted player sprite body to encompass only the player's feet
3	Player collision with powerup sprite would crash the game	3	Changed Phaser type of powerup item

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### Module: Player Component

### Incremental Testing

Defect No.	Description	Severity	Solution
1	Player sometimes spawn at location is not included in player spawn tile layer	3	create a player object layer in map to identify available spawn location
2	player speed faster when moving diagonally	1	Use unit vector calculations to normalize speed in all directions
3	Player cannot use special attack after cold down	4	Track the timer of sp attack and update the state once timer reach 0

### Regression Testing

Defect	Description	Severity	Solution
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No.			
1	Ammo sometimes not auto reload if switch to melee weapon when in a state of empty ammo	4	Also do ammo check when equipping melee weapons

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## Module: Enemy Component

### Incremental Testing

Defect No.	Description	Severity	Solution
1	Mobs could pick up powerups	2	Bound collision interaction to player sprite
2	Mobs shared same map limitations as player	2	Gave mobs ability to cross any sprite

### Regression Testing

Defect No.	Description	Severity	Solution
1	Mobs continuously attack player when in contact.	2	Added attack cooldown timer for mob attacks
2	Mobs take continuous damage from player	2	Added invincibility cooldown timer for mobs