

**Team:** Peter Gutenko, Tarah Peltz, Audrey Randall, Chance Roberts

**Title:** The Trash Panda Dilemma

**Project Summary:** A raccoon, an opossum, and a rat want to help improve the public image of “pests” everywhere however they can. Together, their abilities make them the perfect group to gather coins for the humans that have fallen down into the sewers. In this side-scroller, platformer game, you can play as a raccoon, who is able to claw through obstacles, an opossum who can play dead in the face of foes so they leave you alone, and a rat who can squeeze into those hard to reach spaces. Gather as many coins as you can while avoiding foes, poisons, and traps.

Our system consists of two parts: the game logic and the database. The game logic system handles all of ins and outs of gameplay while the database stores information about scores.

### Project Requirements:

#### Business Requirements

ID	Requirement
BR-01	Username for high score must be an alphanumeric and not blank

#### User Requirements

ID	Requirement
UR-01	As a user, I can move forwards and backwards within a level.
UR-02	As a user, I can jump over obstacles
UR-03	As a user,I can climb up ladders
UR-04	As a user, I can pick up coins
UR-05	As a user, I can add more health to the character currently in use by picking up trash
UR-06	As a user, I can maintain my health by picking up food items specific to the character I'm currently playing.
UR-07	As a user, I can rotate through characters so I can play as the character that I will need for a

	specific scenario.
UR-08	As a user, I can view my high scores and the high scores of other players to see how I stack up.
UR-09	As a user, I can equip my characters with hats that I have found in the levels to make my characters look cuter.
UR-10	As a user, I can pause the game at any point.
UR-11	As a user, I can find a help menu if I pause the game just in case I forget how to play or I find a bug.
UR-12	As a user, I want to be able to alert the developers of any bugs that I run into so that they could potentially get fixed.
UR-13	As a user, I also want to view the leaderboard from the main menu so I can see how I stand up to the rest without playing the game.
UR-14	As a user, I want to be able to start the game from the main menu
UR-15	As a user, I want to be able to exit the game from the pause menu so I can easily stop playing.
UR-16	As a user, I want to be able to access the leaderboard from the pause menu to see how I'm doing in comparison to other players
UR-17	As a user, I want to be able to climb walls to access different parts of the areas and possible secrets.
UR-18	As a user, I want to be able to add my score to the leaderboard when I finish a game
UR-19	As a user, when I play as a rat and am inside a pipe, I can't rotate to play as other characters
UR-20	As a user, I want to avoid my enemies while I'm playing by using movements like moving forward and backward, jumping, or climbing

UR-21	As a user, I want to try to make it to the goal while I'm playing by using movements like moving forward and backward, jumping, or climbing
UR-22	As a user, I want to play as the rat sometimes, who can fit through small pipes as a special power and is the fastest character
UR-23	As a user, I want to play as the raccoon sometimes, who can claw through obstacles as a special power
UR-24	As a user, I want to play as the opossum sometimes, who can play dead when enemies approach as a special power and is the slowest character
UR-25	As a user, I want to be able to unpause the game after I have paused it
UR-26	As a user, I want to be able to pick up new hats when they randomly appear in game
UR-27	As a user, the health of my character currently in use will decrease the longer I use it
UR-28	As a user, the health of characters not currently in use will increase slowly since I'm letting the characters rest
UR-29	As a user, I can't use a character when it runs out of health

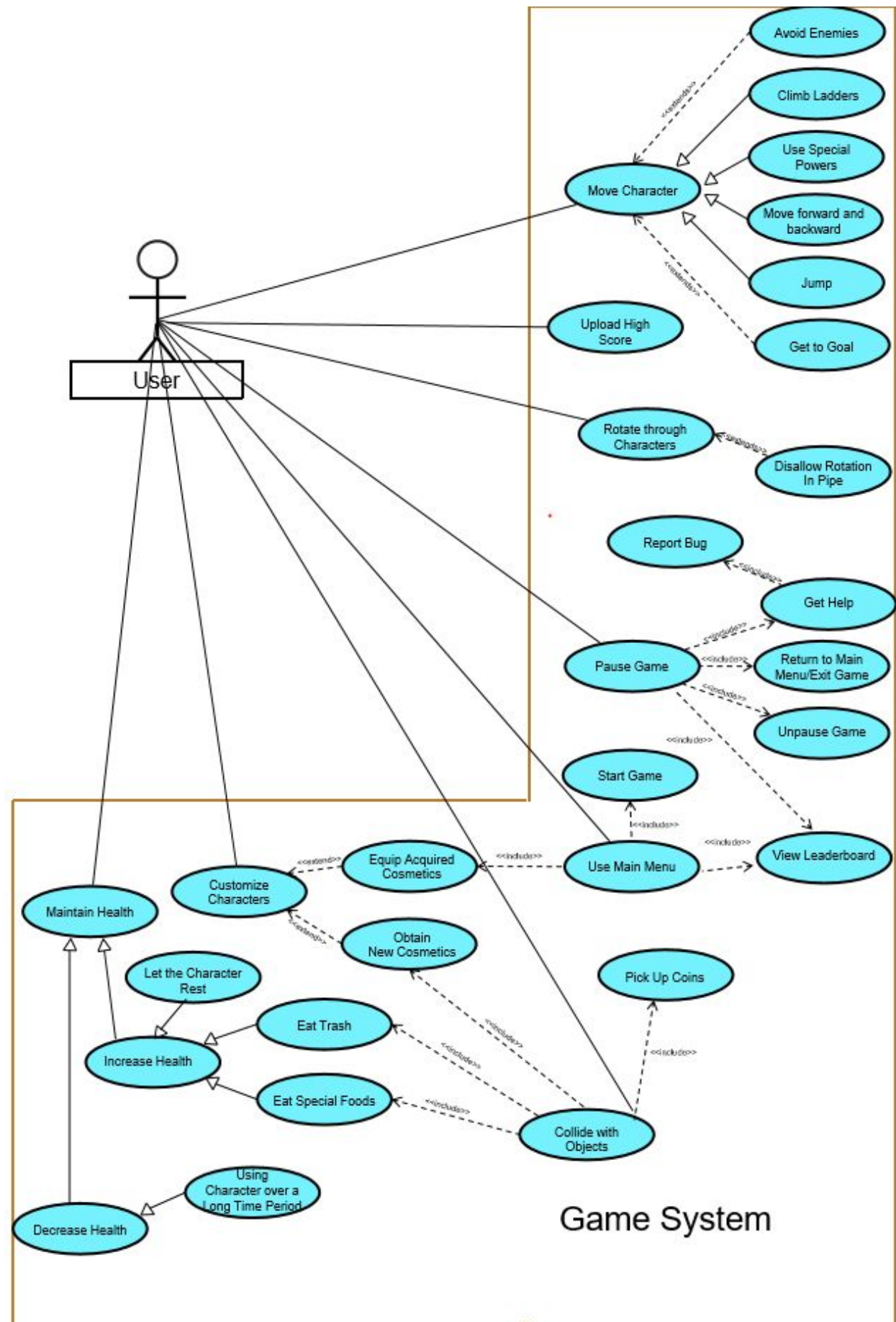
### Non-Functional Requirements

ID	Requirement
NFR-01	The game shall not drop below 60 FPS on any computer 5 years old or newer to allow our game to feel as though it is playable.

NFR-02	If the database goes down, leaderboard may not be viewed but the game itself shall still be playable.
NFR-03	Scores shall be stored locally in the case of a database issue and shall be uploaded after the database is restored

## **Use Case Diagram:**

The Use Case Diagram may be found on our GitHub with the filepath OOP-game-dev/diagrams/UseCaseDiagramFinal.pdf. The hyperlink for that is (<https://github.com/Audrey-Randall/OOP-game-dev/blob/master/diagrams/UseCaseDiagramFinal.pdf>)



**Use Case Document - Case #16:**

<b>Use Case ID:</b>	UR-16
<b>Use Case Name:</b>	View Leaderboard
<b>Description:</b>	Player can view the leaderboard from the menu

<b>Actors:</b>	User													
<b>Pre-conditions:</b>	User is in the game													
<b>Post-conditions:</b>	User has observed leaderboard													
<b>Frequency of Use:</b>	At player's discretion: unlikely to be more frequent than a few times per hour.													
<b>Flow of Events:</b>	<table><tr><th></th><th>Actor Action</th><th>System Response</th></tr><tr><td>1</td><td>Press "Esc" to Pause the Game</td><td>Game pauses and brings up the menu.</td></tr><tr><td>2</td><td>Select "Leaderboard" tab with the arrow keys</td><td>Menu highlights the "Leaderboard" tab.</td></tr><tr><td>3</td><td>Hit Enter</td><td>The Leaderboard Tab opens up, showing the leaderboard.</td></tr></table>			Actor Action	System Response	1	Press "Esc" to Pause the Game	Game pauses and brings up the menu.	2	Select "Leaderboard" tab with the arrow keys	Menu highlights the "Leaderboard" tab.	3	Hit Enter	The Leaderboard Tab opens up, showing the leaderboard.
	Actor Action	System Response												
1	Press "Esc" to Pause the Game	Game pauses and brings up the menu.												
2	Select "Leaderboard" tab with the arrow keys	Menu highlights the "Leaderboard" tab.												
3	Hit Enter	The Leaderboard Tab opens up, showing the leaderboard.												
<b>Variations:</b>	1. Game was not in progress already, skip to Step 2.													
<b>Exceptions:</b>	None													
<b>Developer Notes:</b>	None													

**Use Case Document - Case #6:**

<b>Use Case ID:</b>	UC-06
<b>Use Case Name:</b>	Maintain Health
<b>Description:</b>	Player can regain health by eating food. The player's character's health slowly decreases while being used.

<b>Actors:</b>	User		
<b>Pre-conditions:</b>	Health is not 0, but is fluctuating		
<b>Post-conditions:</b>	Health is more full		
<b>Frequency of Use:</b>	Constant		
<b>Flow of Events:</b>			
		Actor Action	System Response
	1	Presses buttons 1, 2, or 3.	Player switches to a character
	2	Player uses the character	Character's health slowly decreases over time; the two unused character's health slowly increases over time
	3	Player sees trash; Walks over to it	Player collides with trash; gets minor health increase
	4	Player uses the character	See step 2
<b>Variations:</b>	3. If the player is the raccoon, you could collide with nuts to get a major health increase.		
	3. If the player is the rat, you could collide with cheese to get a major health increase.		
	3. If the player is the possum, you could collide with berries to get a major health increase.		
<b>Exceptions:</b>	If the player's health is 0, a character is not useable for awhile until it regains health		



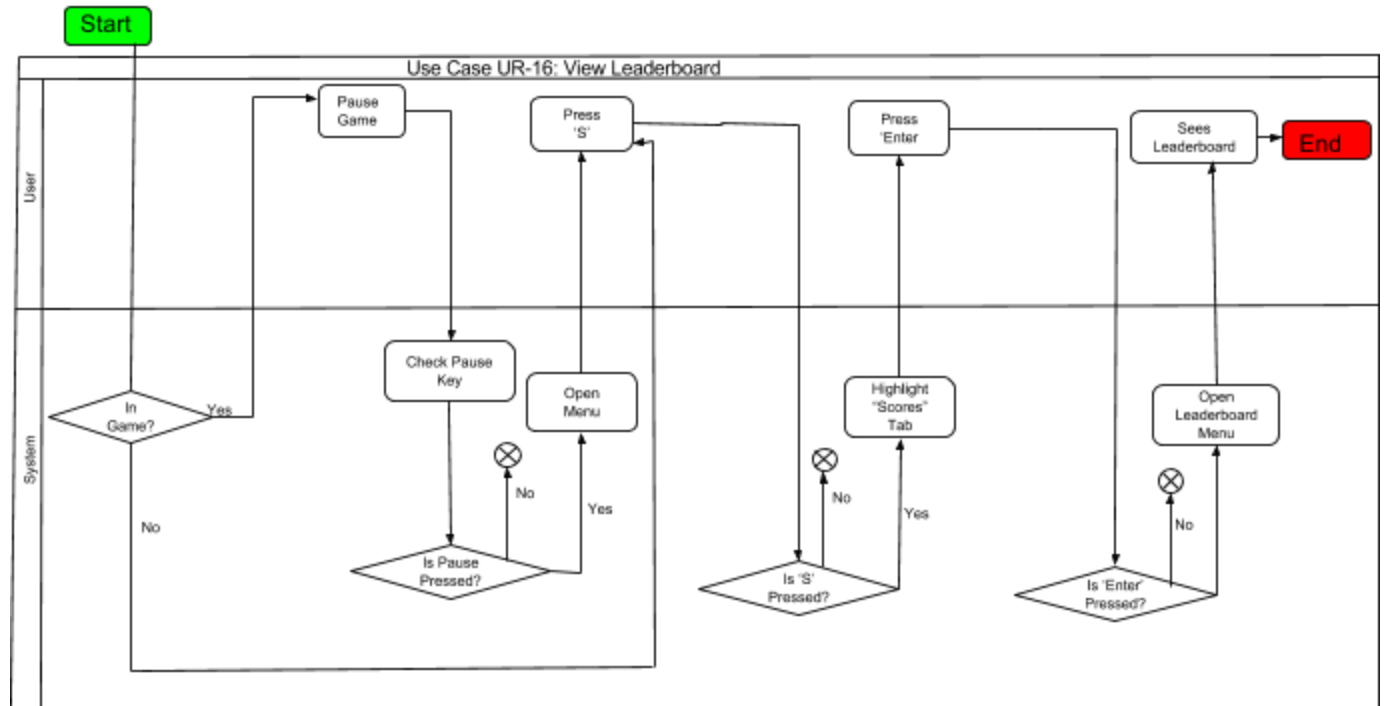
**Developer Notes:**

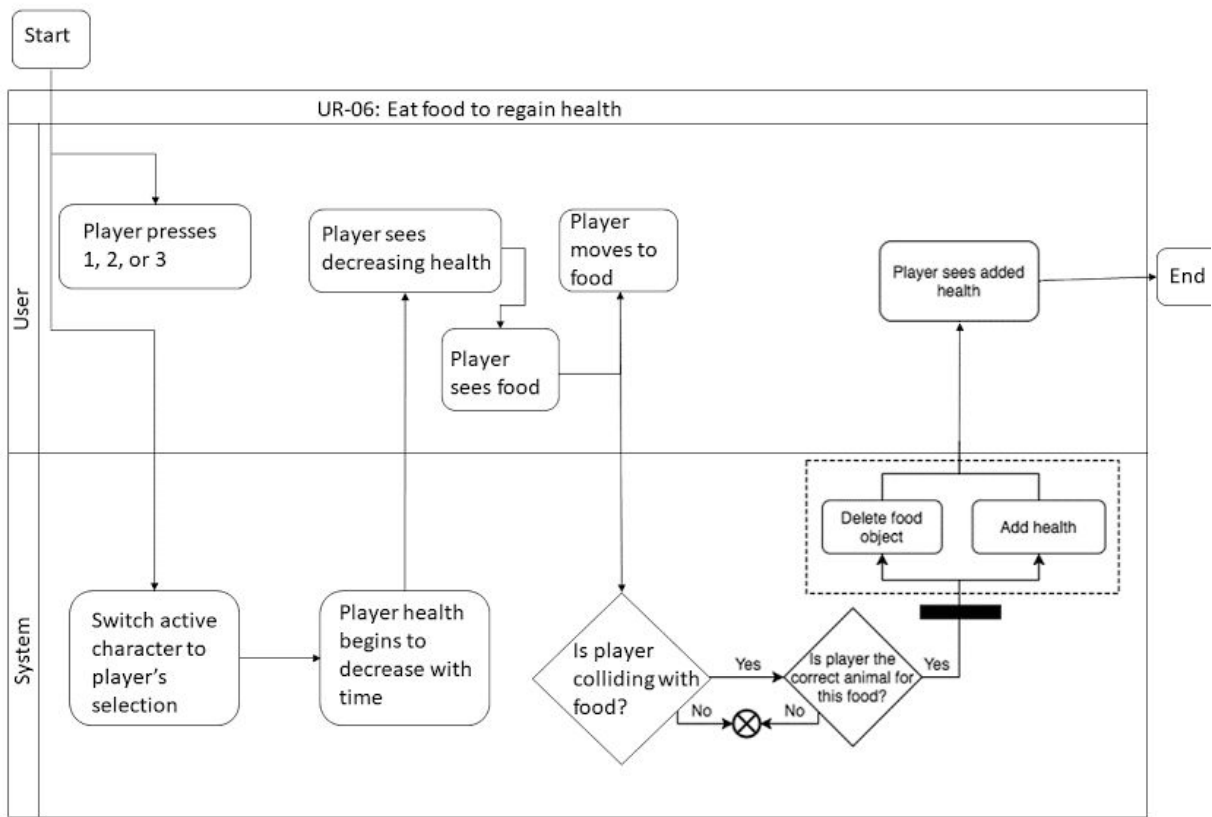
None

### Activity Diagrams:

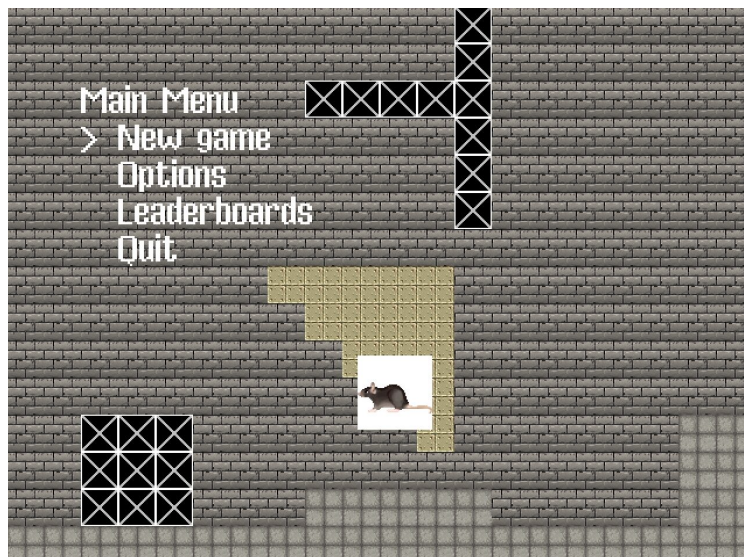
The activity diagram for UR-06 may be viewed at [OOP-game-dev/diagrams/act\\_diagram\\_6.png](#) which has the URL

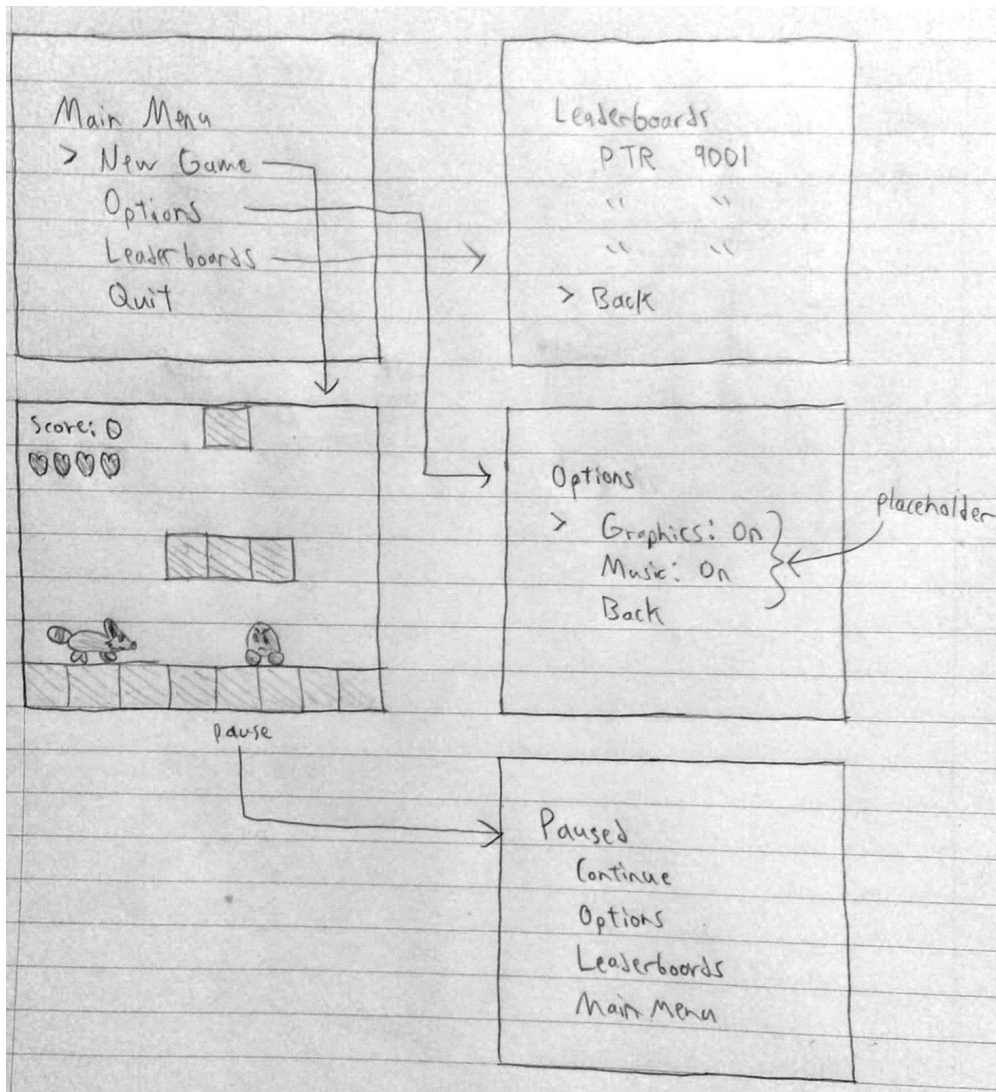
([https://github.com/Audrey-Randall/OOP-game-dev/blob/master/diagrams/act\\_diagram\\_6.png](https://github.com/Audrey-Randall/OOP-game-dev/blob/master/diagrams/act_diagram_6.png)).



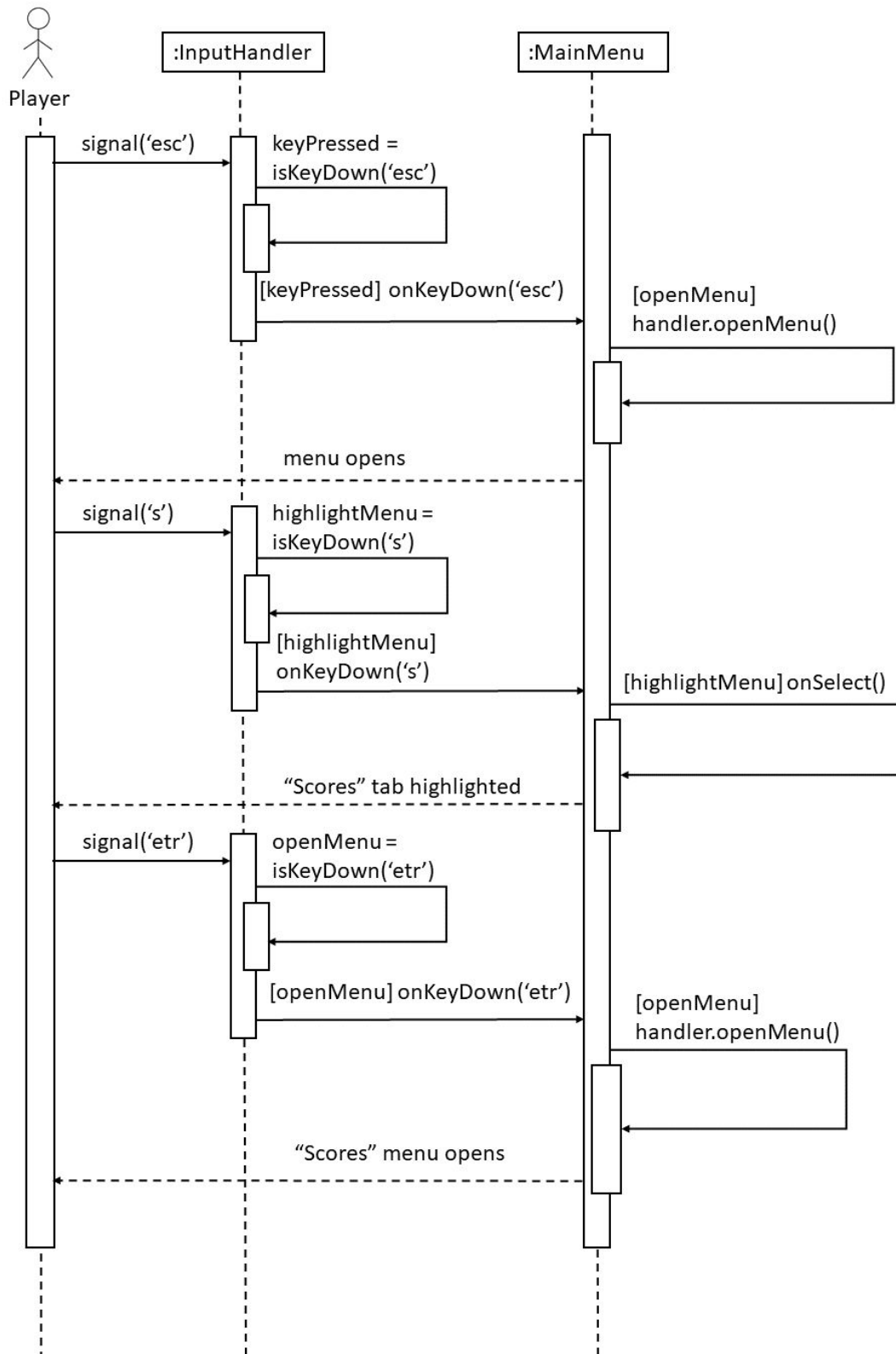


## UI Mockups:

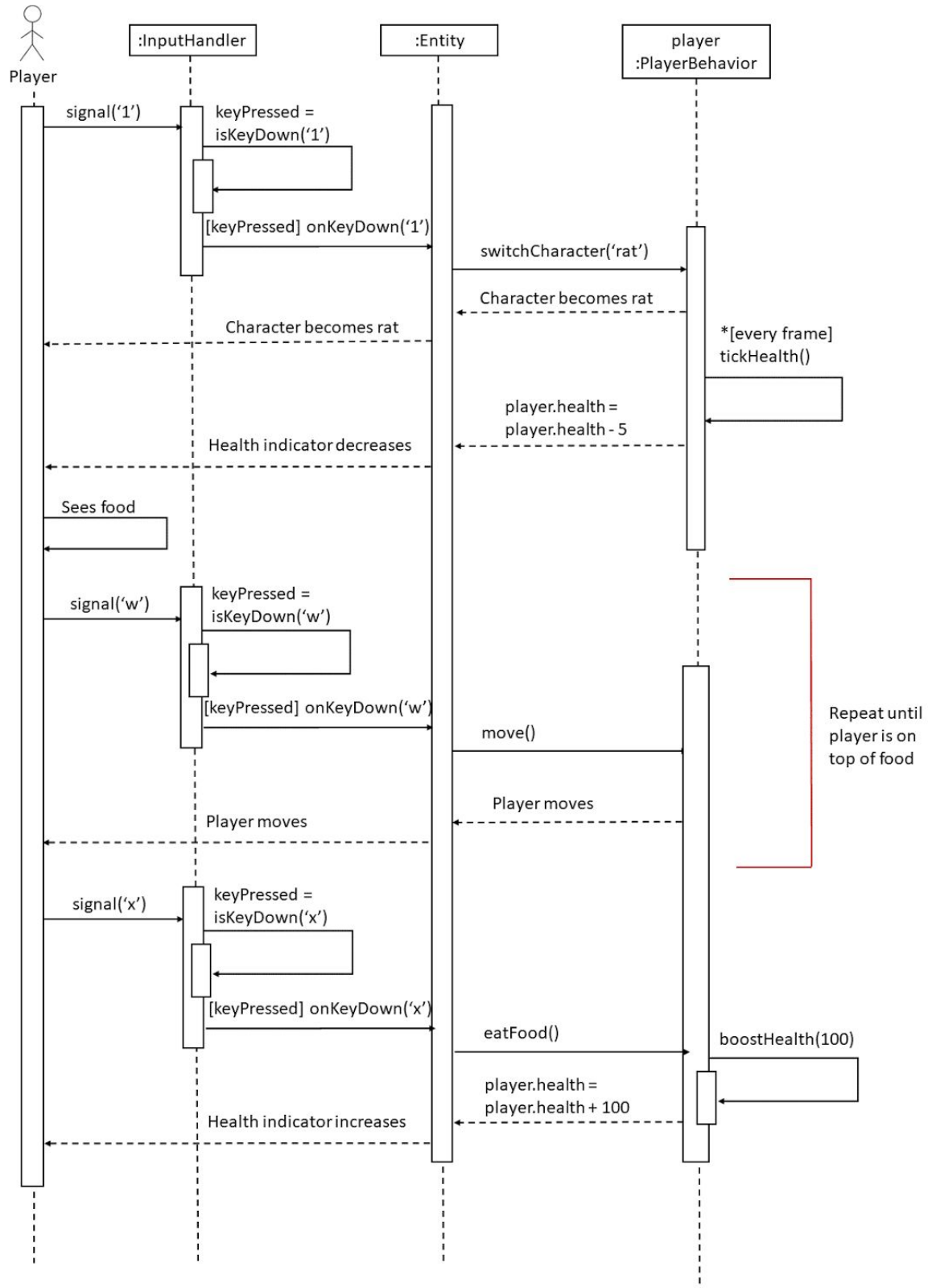




## User Interaction Sequence Diagram - Use Case #16:



## User Interaction Sequence Diagram - Use Case #6:



## **Class Diagram:**

The Class Diagram may be found on our GitHub with the filepath OOP-game-dev/diagrams/class\_diag.png. The hyperlink for that is ([https://github.com/Audrey-Randall/OOP-game-dev/blob/master/diagrams/class\\_diag.png](https://github.com/Audrey-Randall/OOP-game-dev/blob/master/diagrams/class_diag.png))

