

Product Requirements

Team South.N

Brief problem statement

The problem is to create a snake game that follows the rules of the classic game, where the snake gets bigger when it eats food and the game ends when the snake hits the wall or itself. The game should be user-friendly, acceptable for all ages, easy to play and as appealing as possible.

System requirements

- The game should have a simple and intuitive user interface, with a main menu.
- The game should follow the rules of the classic snake game, where the player controls the snake using the arrow keys and the snake gets bigger when it eats food.
- The game should end when the snake touches itself or a wall.
- There should be a current score tracking system displayed on the screen as well as a high score display.
- The game should be able to respond with error handling messages.
- The snake game will be made using python as a programming language, in Visual Studio Code IDE and some of the main libraries that it will contain are: pygame, sys, pygame.math, random, pygame.rect, pygame.font and time.

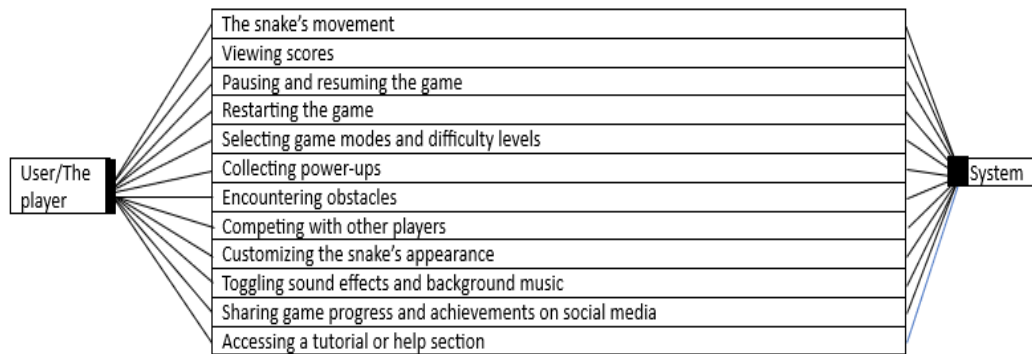
Users profile

The system can be used by anyone who will have access to the application of the game. The game is designed to be simple and suitable for all ages.

Feature requirements (user stories)

No.	User Story Name	Description	Release
1.	Game-controls	To travel around the game board, I as a player want to be able to move the snake using the arrow keys or swiping motions.	R1
2.	Game-score	I want to be able to view my high score and current score on the game screen so I can monitor my development as a player.	R1
3.	Game-break	I want to be able to take a break or attend to other affairs and then resume playing where I left off.	R1
4.	Game-restart	I want to be able to restart games that I lose so that I can try again and succeed.	R1
5.	Game-variety	As a player, I want to have a variety of game modes to pick from so that I may play the game in any way I like, whether it's in classic form, timed mode, or endless mode.	R2
6.	Game-difficulty_levels	To challenge myself and advance my talents, I want to be able to choose from a variety of difficulty levels, such as easy, medium, and hard.	R2
7.	Game-points	I want to be able to gather power-ups to improve my gameplay and score, like extra points or slow motion.	R2
8.	Game-obstacles	For the game to be more challenging and intricate, I want to be able to run into obstacles like walls or barricades.	R2
9.	Game-competition	To feel competitive and motivated, I want to be able to compete with other players, whether they are nearby or online, by comparing our scores and ranks.	R3
10.	Game-snake_look	I want to be able to alter the snake's look as a player, whether it be its color, form, or skin, to make the game more enjoyable for me.	R3
11.	Game-sounds	As a player, I want the ability to turn on and off sound effects and background music so that I can customize the audio settings to my taste.	R3
12.	Game-social_media	To showcase my abilities and compete with my friends, I want to be able to publish my gaming progress and victories on social media sites like Facebook and Twitter.	R3
13.	Game-tutorial	To understand how to play the game successfully, I as a player want to be able to access a tutorial or help section that explains the game mechanics and rules.	R3
14.	Game-tests	I want to be able to add unit tests and integration tests as a developer to make sure the game works properly and satisfies the user story requirements.	R1

Use case diagram



Use case description

Use Case Number:	UC-01
Use Case Name:	<i>Play Snake Game</i>
Overview:	<i>The purpose of this use case is to allow the user to play the classic Snake game.</i>
Actor(s):	<i>Player</i>
Pre condition(s):	<i>The player must run the code.</i> <i>The player has launched the game.</i>
Scenario Flow:	<i>Main (success) Flow:</i> <i>The game menu is displayed.</i> <i>The player selects "Play Game".</i> <i>The game board is displayed with a snake and food item.</i> <i>The player uses the arrow keys to move the snake around the game board.</i> <i>If the snake hits its own body, the game ends.</i> <i>If the snake eats the food item, it grows in size and the player scores points.</i>

Use Case Number:	UC-01
	<p><i>Steps 4-6 are repeated until the game ends.</i></p> <p><i>When the game ends, the player's score is displayed along with the option to play again or return to the menu.</i></p>
	<p><i>Alternate Flows:</i></p> <p><i>The player selects "How to Play" from the menu:</i></p> <p><i>The instructions for the game are displayed.</i></p> <p><i>The player returns to the menu.</i></p>
Post Condition:	<p><i>The player's score is displayed.</i></p> <p><i>The player can choose to play again or return to the menu.</i></p>