**Snake**

**Overview:**

‘Snake’ has the player control a snake that grows in length as food is collected. Food will spawn at random locations on the screen for the player to collect, increasing the snake’s length and the player’s score.

The player must avoid colliding with the walls (defined by the screen edge) and avoid colliding with the snake’s body.

The program will be written in C++, using VisualStudio and Raylib.

**Game State**  
The following scenes will be in the project  
  Game Play (!gameover)  
  Game Over  
  
The Game Play is loaded at startup.

Game Play will load the player, spawn the food at random locations, display the controls and the player's current score.

Score and size will increase with food collision.

Game Over will occur with any collision that is not food.

Game Over will display the game over message, show the player's score, high score and a control prompt to start a new Game Play.

**Player**

Snake:

The snake will use the following data:

Vector2 position; sets the sprite's position on screen

Vector2 size; sets the size of the loaded sprite

Vector2 speed; sets the sprite's movement speed

Texture2D texture; sets the sprite's .png asset.

Controller:

The player control's will be called in UpdateGame

W,A,S,D keys will be used to set the player's direction of movement.

T key will be used to toggle an on screen grid for the player.

Collision:

Position checks will be made in UpdateGame.

Checks will determine if the player's position is:

greater than the screenWidth or screenHeight.

equal to a currently occupied position.

An occupied position can include food or player.

Snake Length:

The snake length will increase by an additional sprite when the player collides with food.

The snake length will use the player's previous position data in order to form the trail and prevent collision when adding the new sprite.

**Food**

Food will be using the following data:

Vector2 position; sets the sprite's position on screen

Vector2 size; sets the size of the loaded sprite

bool active; used as a trigger

Texture2D texture; sets the sprite's .png asset.

Active Boolean:

While true, the food will be spawned at a random unoccupied position.

The active state will change when collision with the player occurs.

Upon player collision, the food state will become false which triggers the snake length and score to increase.

Afterwards, the state will become true which will set a new on screen position for the food.

**Grid**

The grid, using a Vector2, will help determine position for all sprites and if the position is occupied or not.