

# Snaky

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Github link: <https://github.com/Apelia-Ion/Snake-Matrix-Game>

Presentation link: <https://youtu.be/my22mCqNTcY>

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## Backstory:

The Snake game has a long and storied history, with roots dating back to the 1970s. The original Snake game was developed by Nokia for their early mobile phones, and it quickly became a worldwide phenomenon.

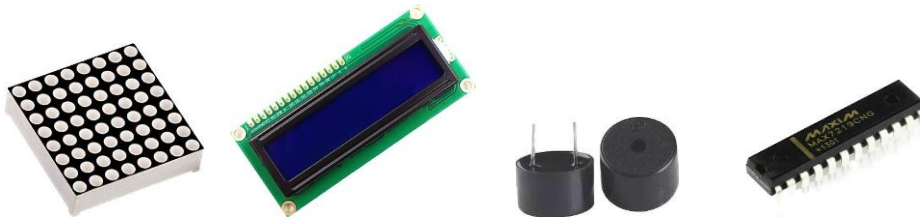
Although it would seem to be a boring, simple game, The Snake game holds its charm well and is still very entertaining to play.

I chose to implement this classic game because I knew it won't fail to bring joy to the players.

## Used Components:

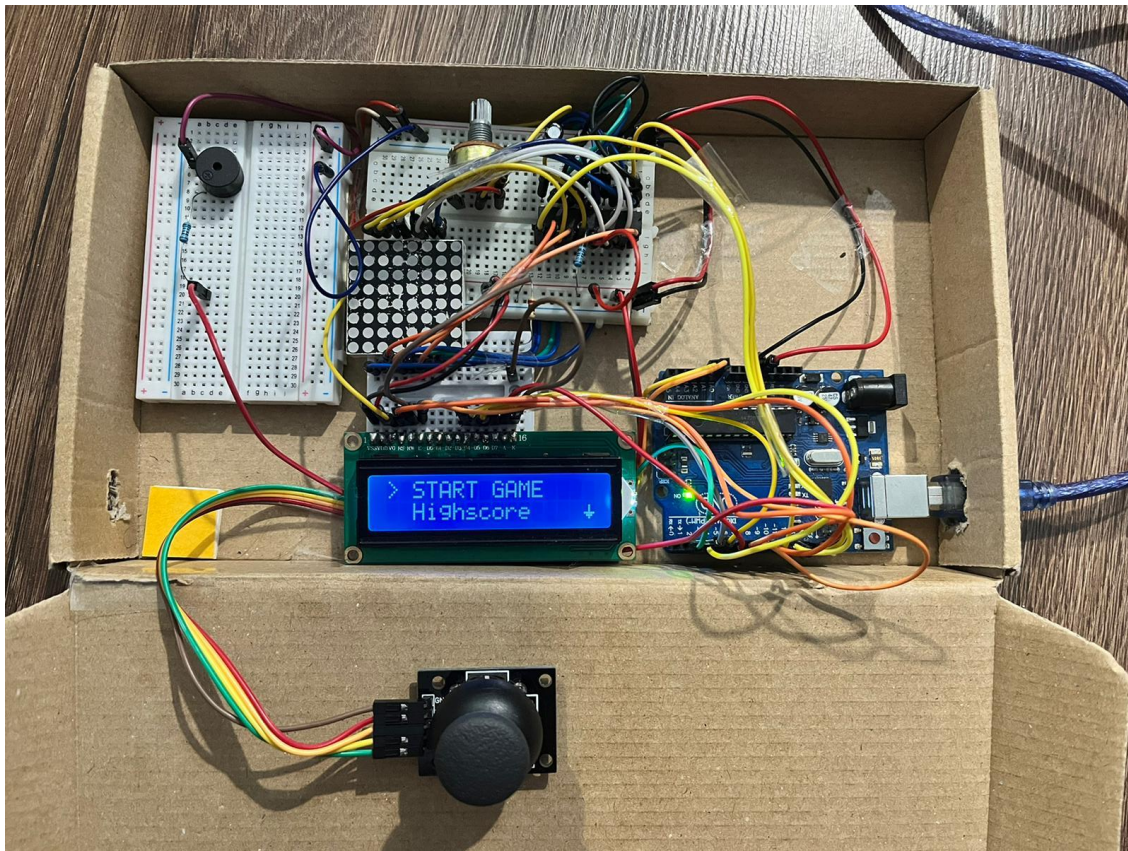
For the project, I used the following pieces of hardware: an Arduino board, an 8x8 LED matrix, a 16x2 LCD, a buzzer, and a MAX7219 Driver to tie them all together.





After connecting the pieces in the right way, as presented in the image below, I wrote the code for the game menu and, respectively for the game itself.

#### Setup:



#### Game description:

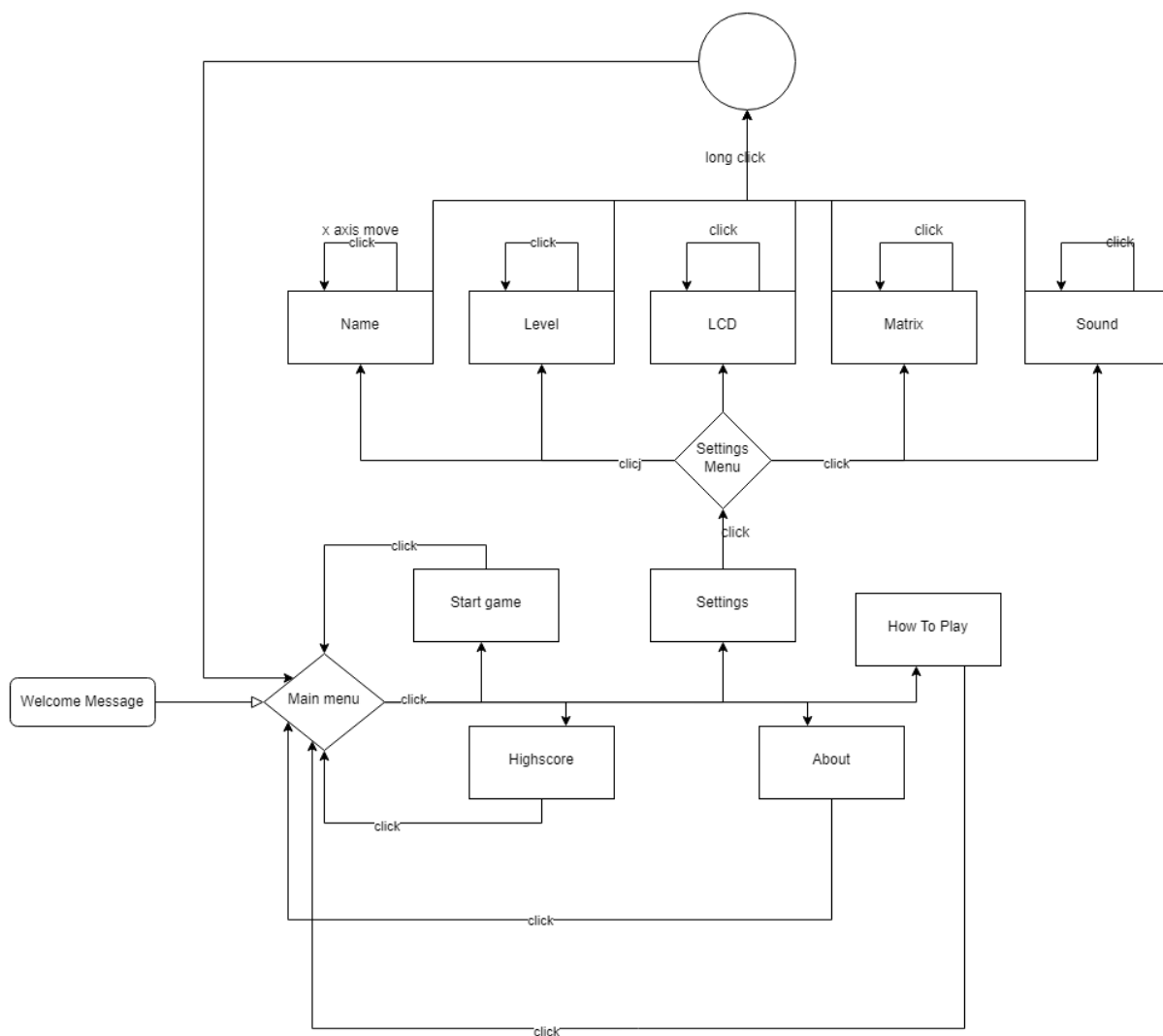
The game begins with a cordial welcoming message for the player. After displaying the message for 2 seconds, the main game menu appears. On the leftmost, there are 2 arrows indicating the direction the player could move to select an option. The current option is indicated by another arrow, ">". As shown:



The player can short-click to enter the chosen option. There are 5 options: Start game, Highscores (which displays the best 5 scores ever obtained on the game and the name of the players who obtained them), Settings (which takes us to the settings menu), About (where the player can find out some information about the game), and How to play (teaches the player how to navigate the game).

The Settings menu holds another 6 options: Name (here the player can enter his name that can later be saved to high scores in the eventuality he beats one of the 5 highest scores), Level (where the player can choose the difficulty of the game before start), LCD (where he can choose the LCD brightness), Matrix (here he can opt for matrix brightness), Sound (a toggle on-off for game sounds) and Reset (rests the memory).

### State diagram



### How to play:

Adjust the game to your liking. You must enter your name now, or else you will be asked when starting a game.

Long-click to return to the main menu and click START GAME.

If you chose to start at the first level, now your only job is to collect food pellets while not colliding with your own tail. After you manage to collect 3 pieces, you will automatically pass to the next level.

Level 2 comes with a new set of rules: you cannot collide with the walls of the game or with your tail. Your speed is also increased. But because it's more difficult, it's also more rewarding, for each food pellet collected, you get 5 score points instead of 1.

Good Luck!