

Snake game

Project report- 2019102021, 2019102036

■ Project objective:

❖ The main objective of the project is to replicate the snake game familiar to us using the shift registers and the Arduino.

■ Description:

❖ The basic idea of this project is to generate a random dot using the Arduino, give serial input to the shift registers and see the movement of the snake in glowing of bulbs.

❖ The whole circuit is made by connecting three breadboards together and using Arduino which gives instructions to the shift registers.

❖ The Arduino gives input and also it controls the LCD display messages.

❖ The potentiometer is used to increase the speed of the snake by a fixed amount each time the snake reaches the dot.

❖ The length of the snake increases then and if the snake touches itself or the walls of the LED matrix, the game is over.

▪ Observations:

- ❖ We observed the welcome message and the score in LCD as expected.
- ❖ We also observed the movement of the snake in the LED matrix but we found that the LED goes blank completely before the shifting of the snake once we press a push button which is not expected but can be explained.
- ❖ We observed the increase of speed and the rest of the movements as expected.

▪ Precautions and conclusions:

- ❖ The LED matrix must be tested and seen that it works properly as sometimes we may get a matrix in which the bulbs are short circuited so many of them glow at a time.
- ❖ Also the connecting wires should not touch any other part if the matrix or else all the bulbs glow.
- ❖ The potentiometer knob must be rotated to see the display messages which sometimes do not appear above a particular value of the resistance.
- ❖ The going blank of the matrix momentarily is due to the shift registers and also their gate delay which results in giving no output as low instead of high until a few milliseconds.