Project Proposal

CSE316
Microprocessors, Microcontrollers, and Embedded Systems Sessional

Group – 39
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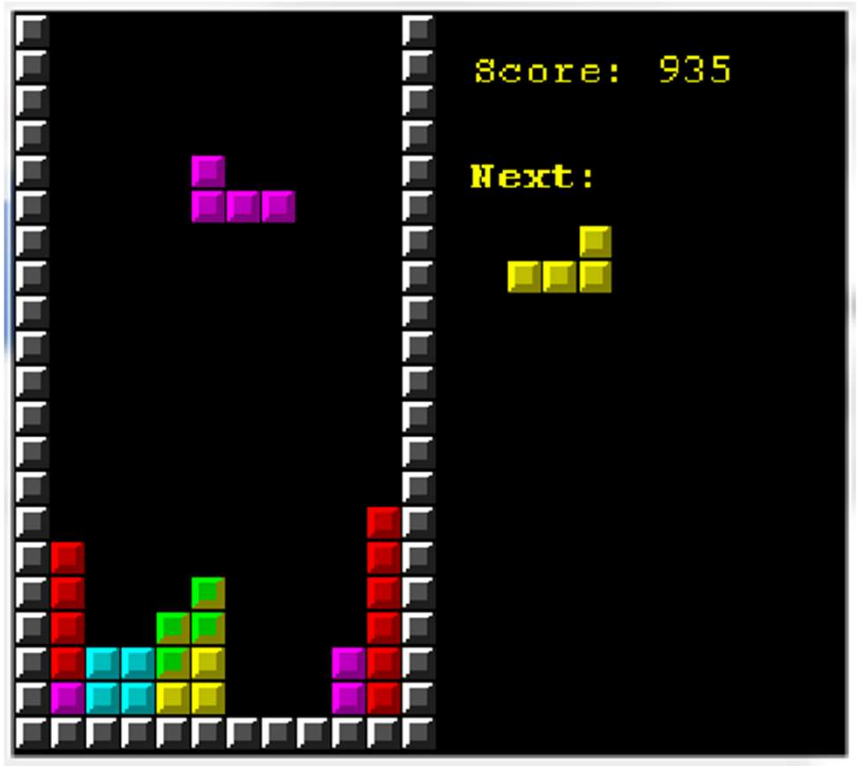
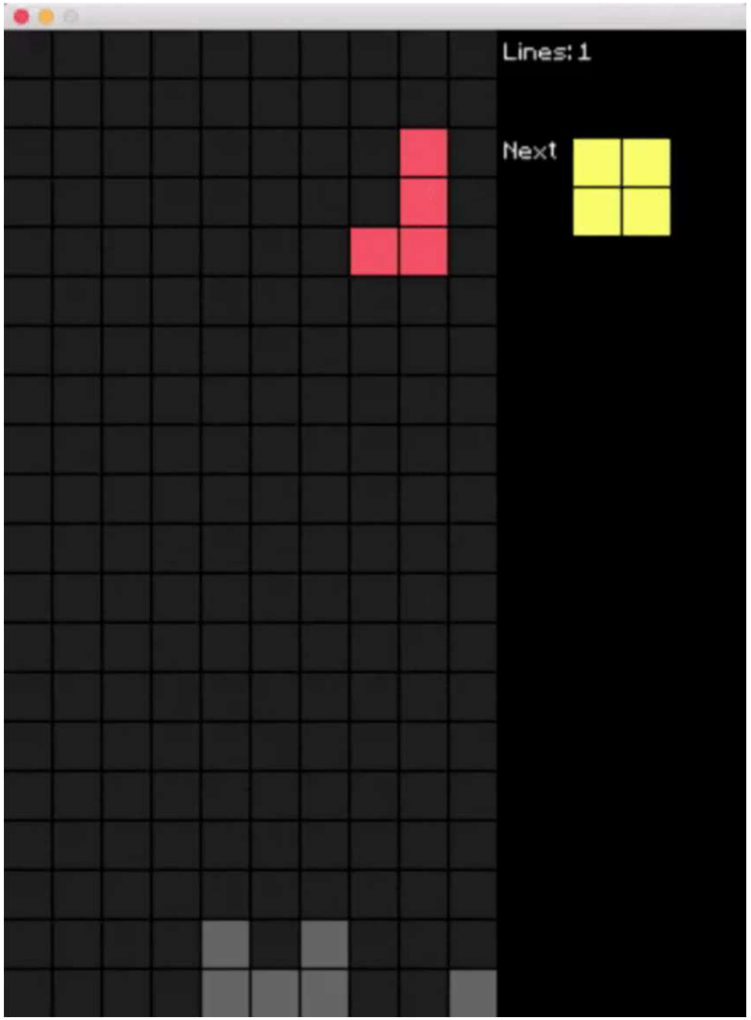


What Are We Making?

TETRIS

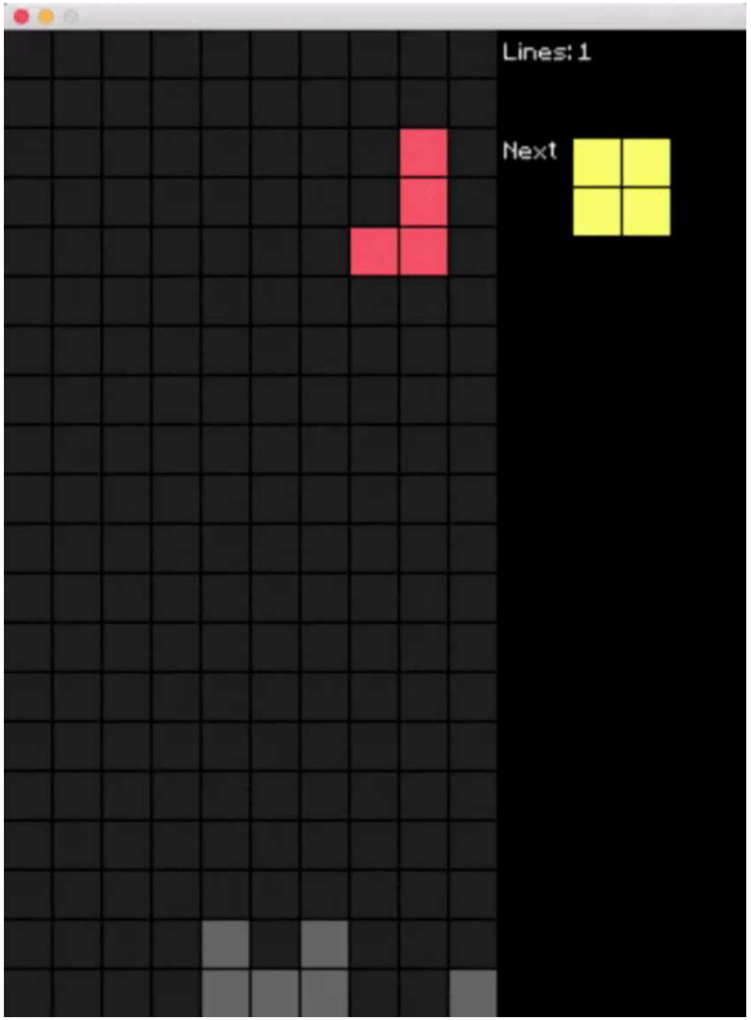
Why TETRIS?

- It will give us a good working knowledge of incorporating multiple components such as LED matrix, LCD screen, Buzzer, Thumb Joystick with Microcontroller.
- Implementing the logistics of the game we will learn first hand how to use logistics in real life hardware.
- Another reason for choosing this particular game is of course the reminiscence of the popular arcade game that we all played growing up.



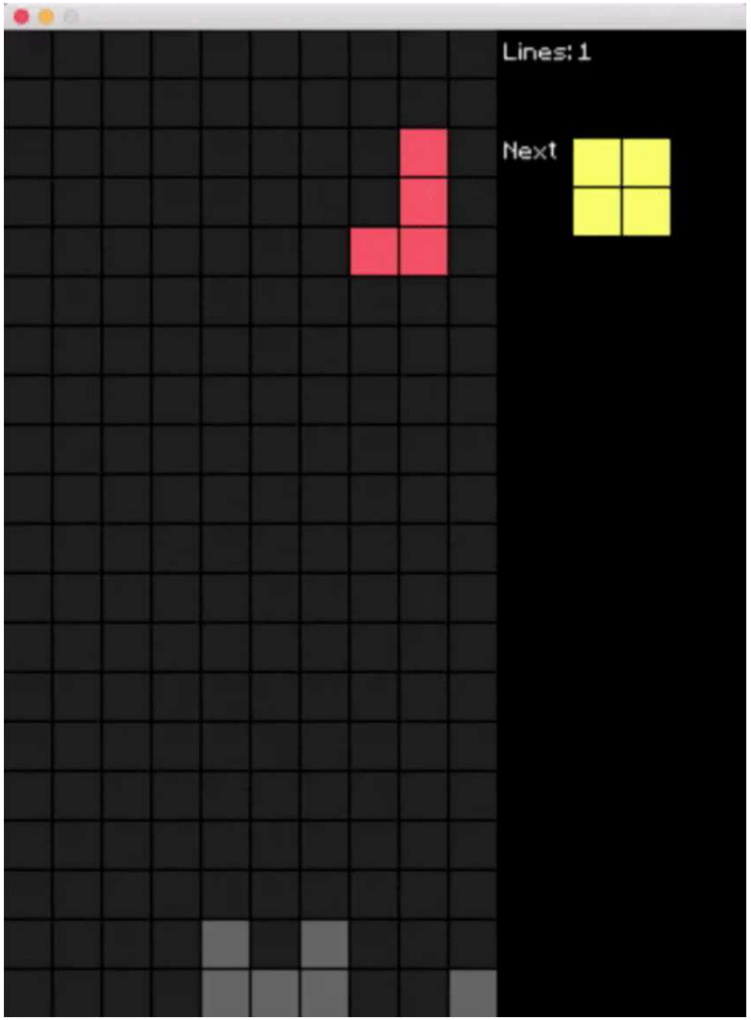
How Do We Implement ?

- For the game console we will use two **LED dot matrices**, and another LED dot matrix for showing the next piece.



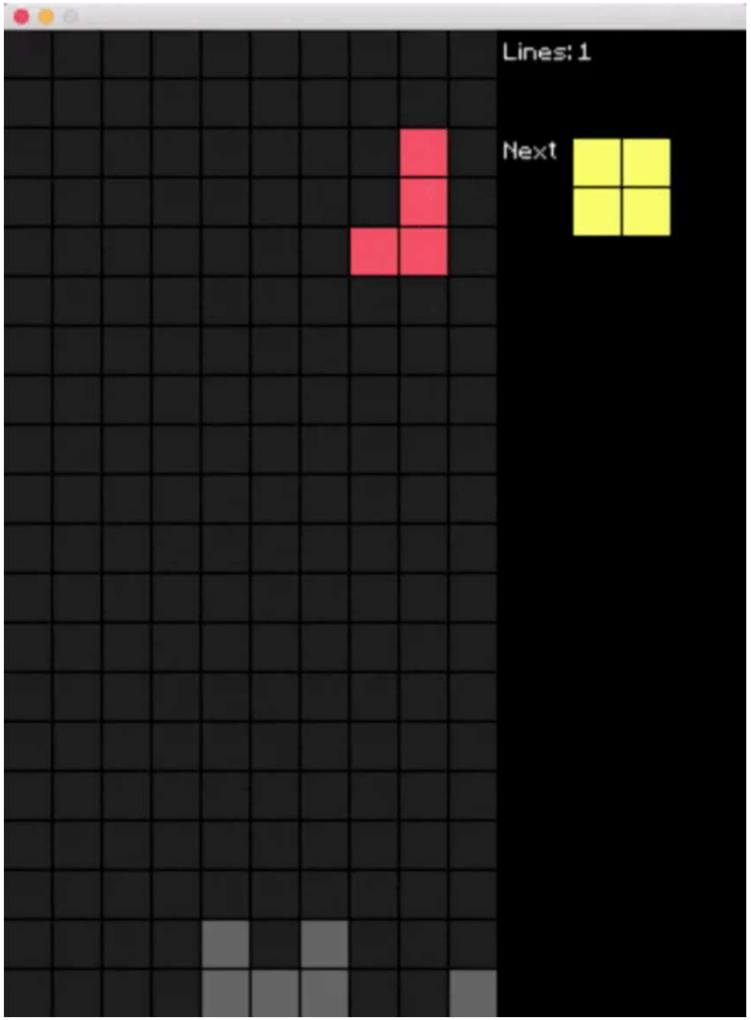
The Movement

- We will use a **thumb joystick** for movement and rotation of the pieces.
- A Tetris piece can be moved **left** or **right** to position and **down** to drop faster with the joystick.



Score

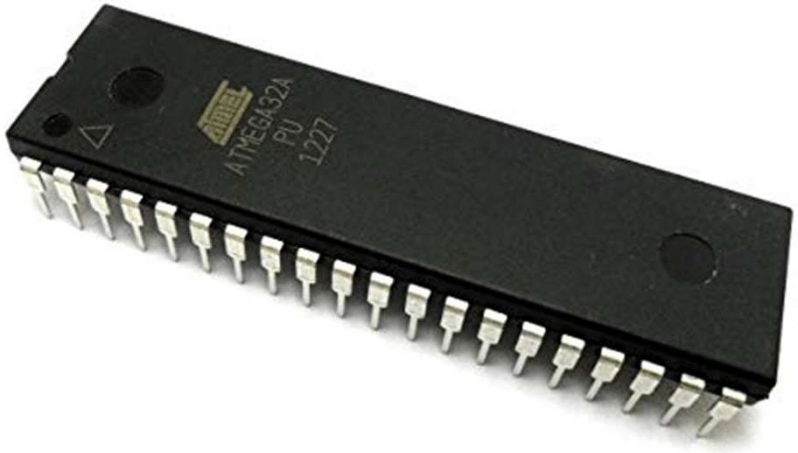
- An **LCD** screen will show the score.
- When a row is filled, it disappears and one point is added. If four rows are filled in one move the point is double.
- The game finishes when the stack of pieces reach the top.



Sound

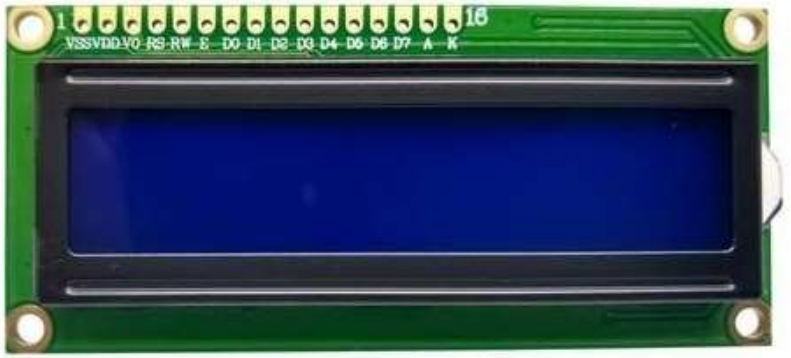
- For sound effects, a **buzzer** will be used.
- The buzzer will make a **beep** sound on rotations and row fills.

Components



Microcontroller
ATMEGA32

8x8 LED Dot Matrix 2.4’’



16x2 LCD Screen

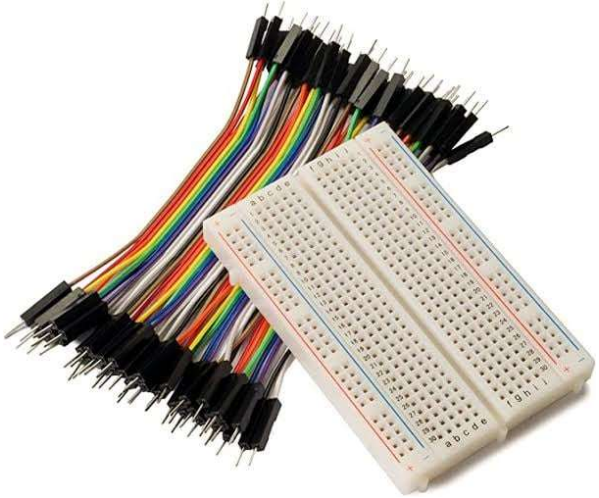
Components

Analog 2-Axis
Thumb Joystick

Buzzer

9V Battery

USBasp Programmer



Breadboard
and Wiring

Resistors

Potentiometer

THANK YOU

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