

Practical 5

Aim: Interfacing Pi Camera with Raspberry Pi

Theory:

- The 8x8 LED matrix module, driven by the MAX7219 IC, allows for dynamic displays of patterns, animations, text, and numbers.
- This guide provides step-by-step instructions to connect the module to an Arduino Uno (Uno R3) and explains various functionalities implemented in the accompanying code.

Connections :

VCC	5V
GND	GND
DIN	Digital Pin 11
CS	Digital Pin 10
CLK	Digital Pin 13

Procedure:

Open the Arduino IDE.

Go to Sketch > Include Library > Manage Libraries.

In the Library Manager, search for "LedControl".

Select the library by Eberhard Fahle and click Install.

Functionalities:

The provided code enables the following features:

1. Display Emotions (Emoji)

Predefined patterns simulate various emotions .

Each pattern is stored as an array of bytes.

2. Display Numbers (0-9)

A looped display of digits from 0 to 9.

Useful for countdowns, clocks, or numeric displays.

3. Display Alphabets (A-Z)

Animates letters of the English alphabet sequentially.

Includes functionality for custom name displays.

4. Directional Animations

Patterns (e.g., arrows) that move in specific directions (left-to-right, right-to-left).

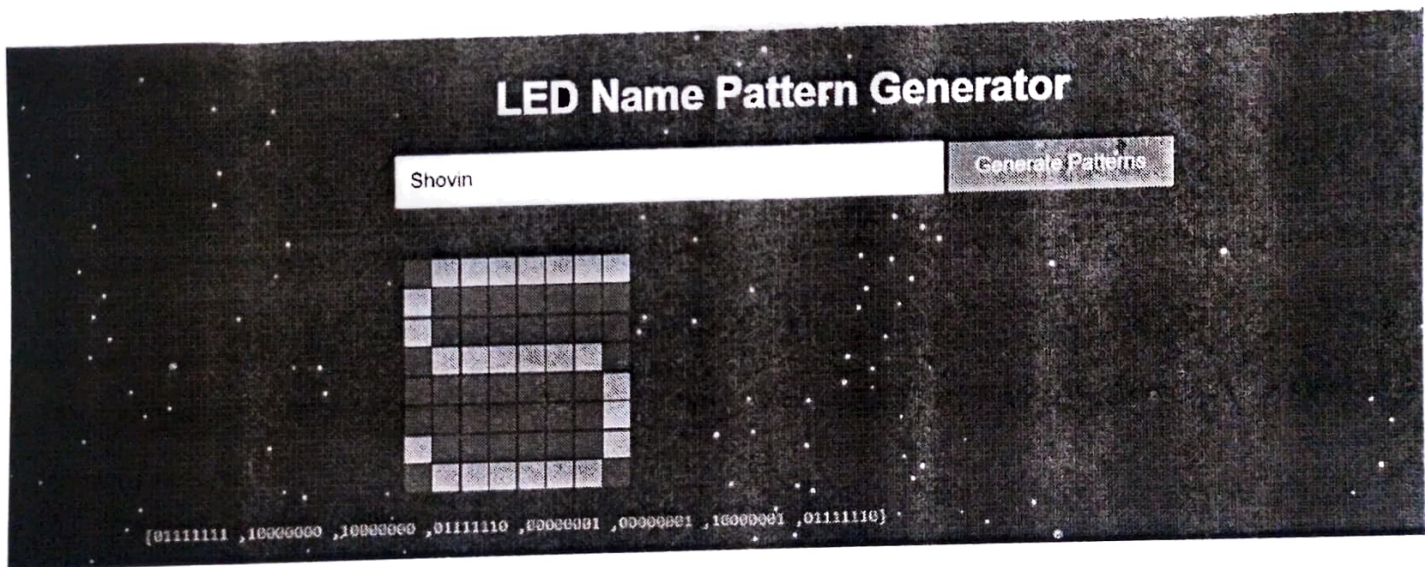
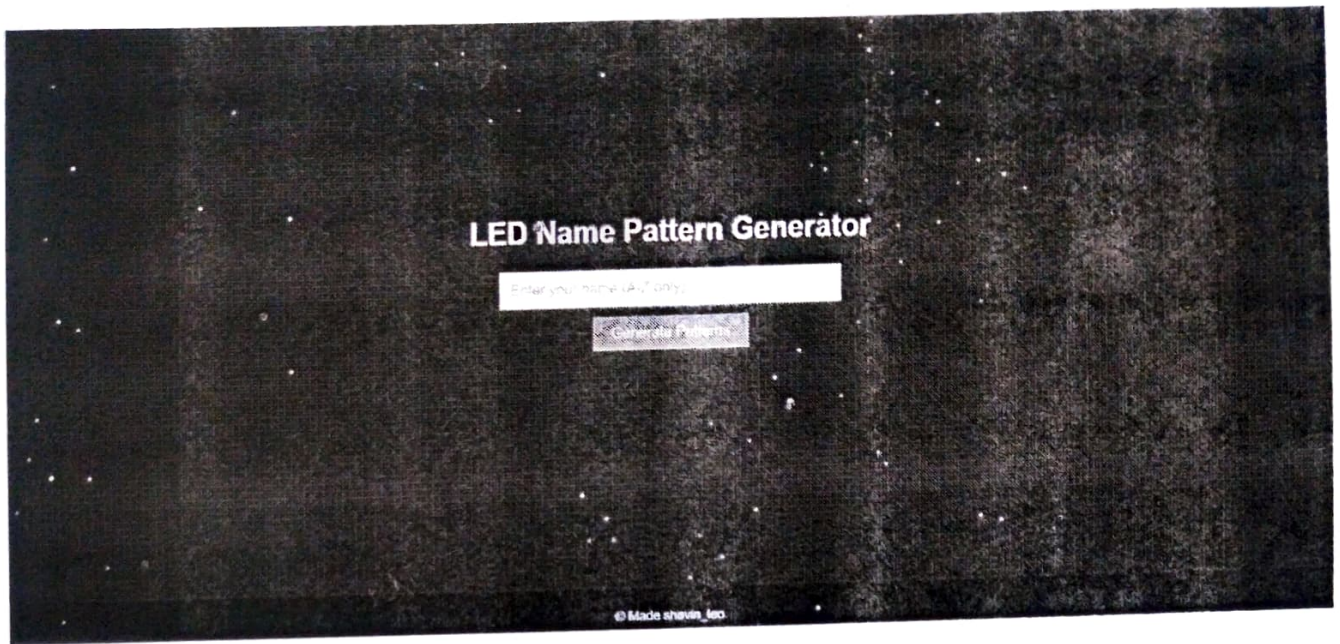
Configurable speed for animations.

5. Heart Animation

Displays a heart shape growing (small to big) or beating.

6. Display Your Name

Use a custom name generator to create an array for your name.



Recommended tool: LED Pattern Maker.

<https://pattern-maker-led-name-generator.vercel.app/>

Code:

<https://github.com/shovin12leo/8x8-LED-Code-Setup/>

Output:

