Tachyon 5.0

GameBoy

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GameBoy
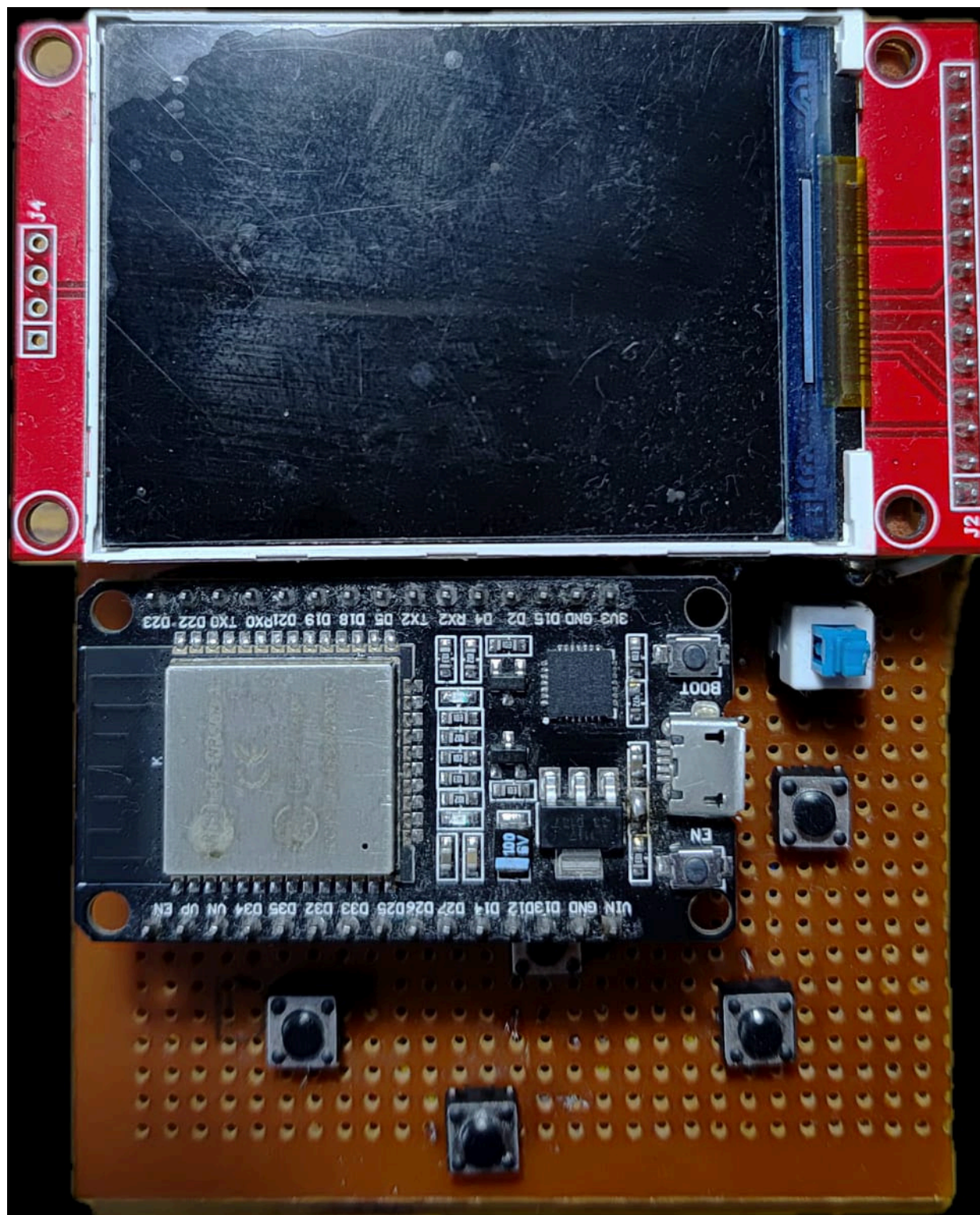
What is GameBoy

The Nitendo GameBoy is a classic haldheld gaming console that was launched in 1989. It was known for its portability, long battery life, and a librarary of addictive games featuring popular Nitendo characters like Mario and Pokemon.

The GameBoy's successs led to several iterations,including the GameBoy Color with Color Screen and GameBoy Advance with more Advanced Graphics.

Our GameBoy

Our GameBoy's Design is very human. It is designed on the same principle as the original GameBoy that is accessible gaming for all. It Includes two Games: Tetris and Snake Game.

Components used in our GameBoy are listed below:

- **2.4 inch TFT SPI Display**: It is a colored tft display that also has touch functionality. It is where the games are viewed and played.

- **ESP32 Microcontroller**: The main brains behind the whole project. It comes with 2.4Ghz of wifi, 4mb RAM, 32Mbit flash memory and also supports BLE(Bluetooth Low Energy)

- **Battery Pack**: Series combination of 3xAAA cells powers this beast. Combine output voltage is 4.5v.

- **Buttons**: Buttons used in this project ranges from power button to game interaction buttons and game changing button.

Images
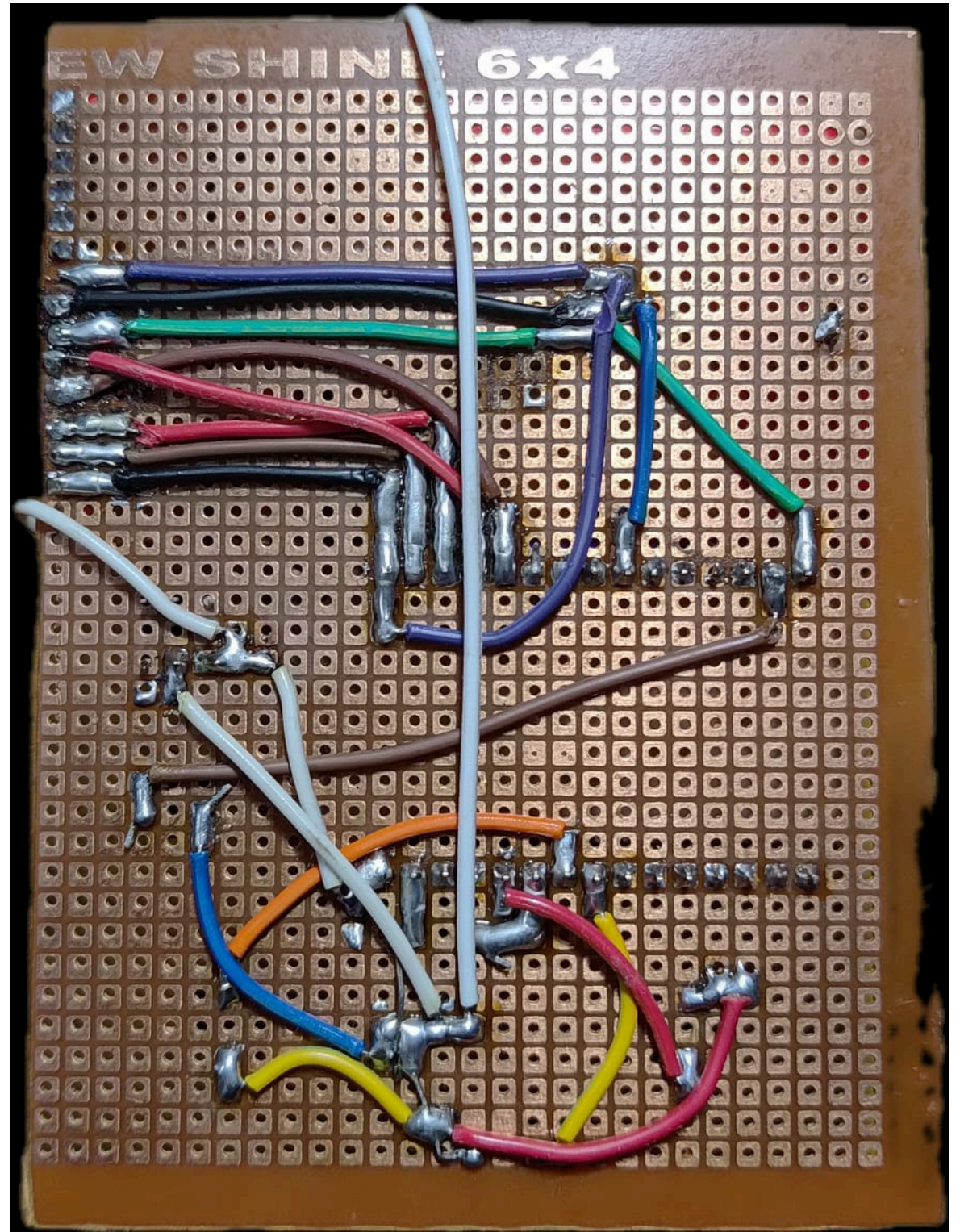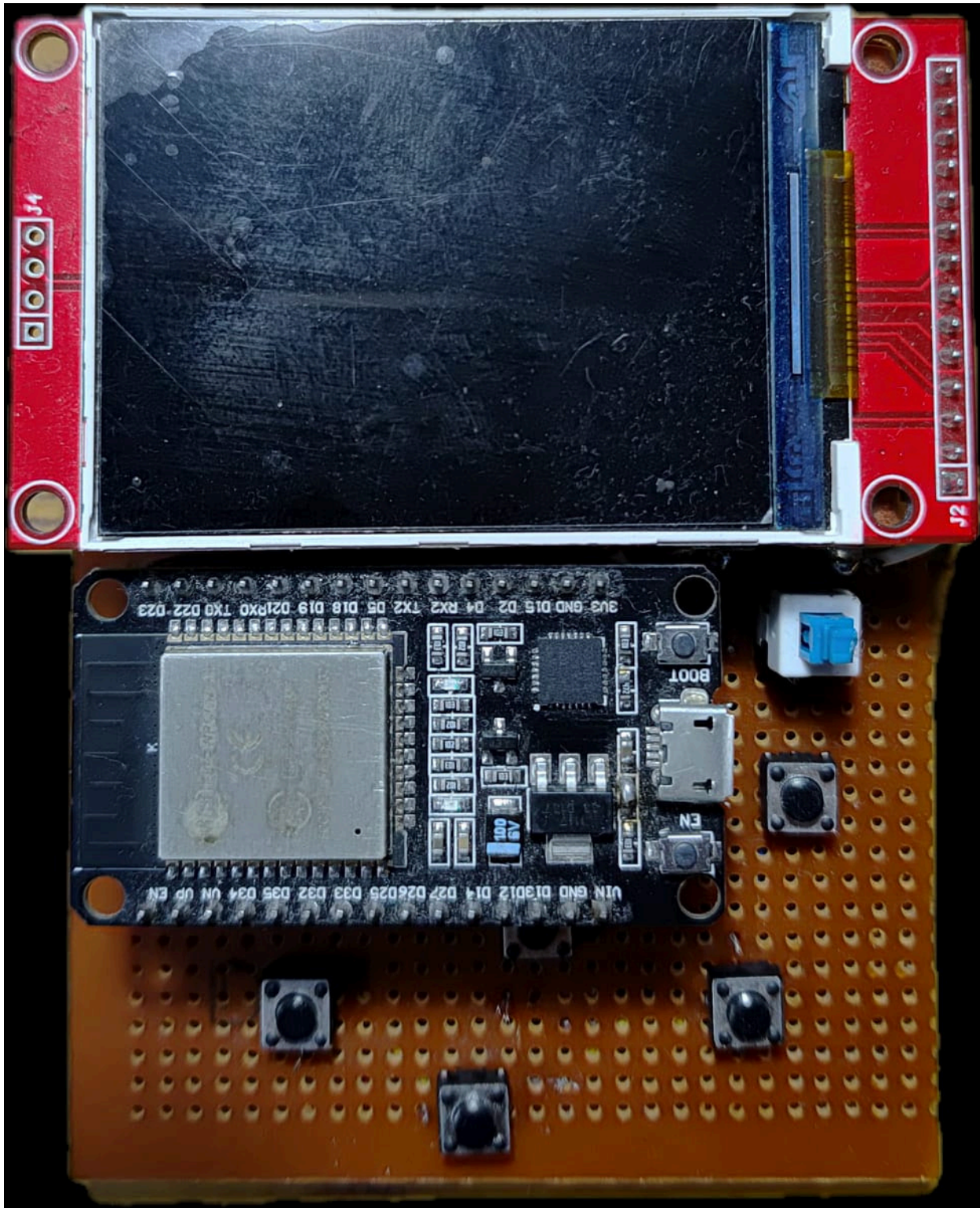
Tetris

Tetris is a classic puzzle video game wheregeometric shapes called tetrominoes fall from thetop of the screen. Players must rotate and move these shapes to create complete horizontal lines without any gaps. When a line is completed, it disappears, and the player earns points. The game speeds up as more lines are cleared, challenging players to think and react quickly. If the stack ofte trominoes reaches the top of the screen, thegame ends.

Code

https://drive.google.com/drive/folders/1Q
n6ikKcm PpRmC6kXApIUB2sUkf-sz9nM?
usp=drive_linkTetris

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google drive where the entire code is
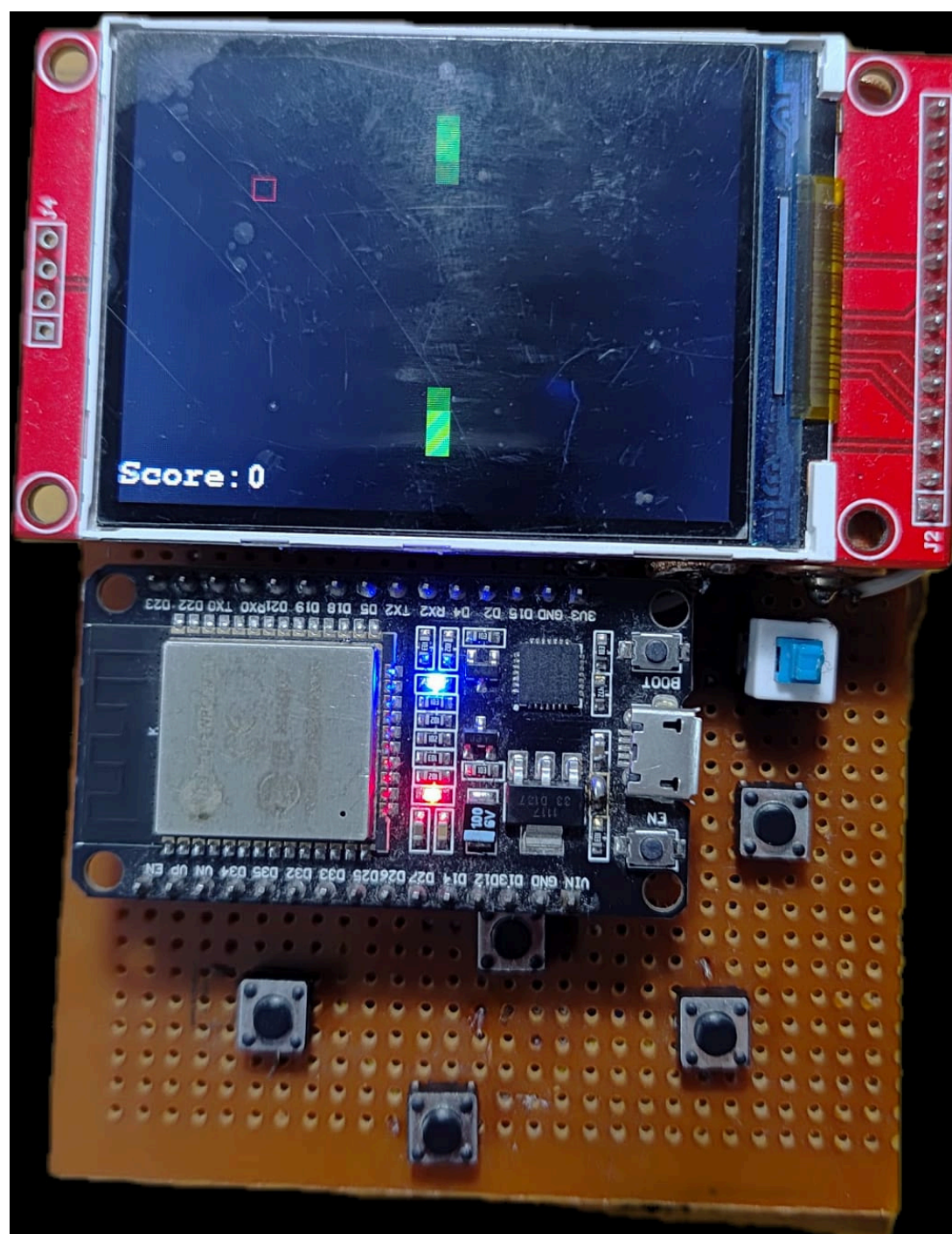provided

Images
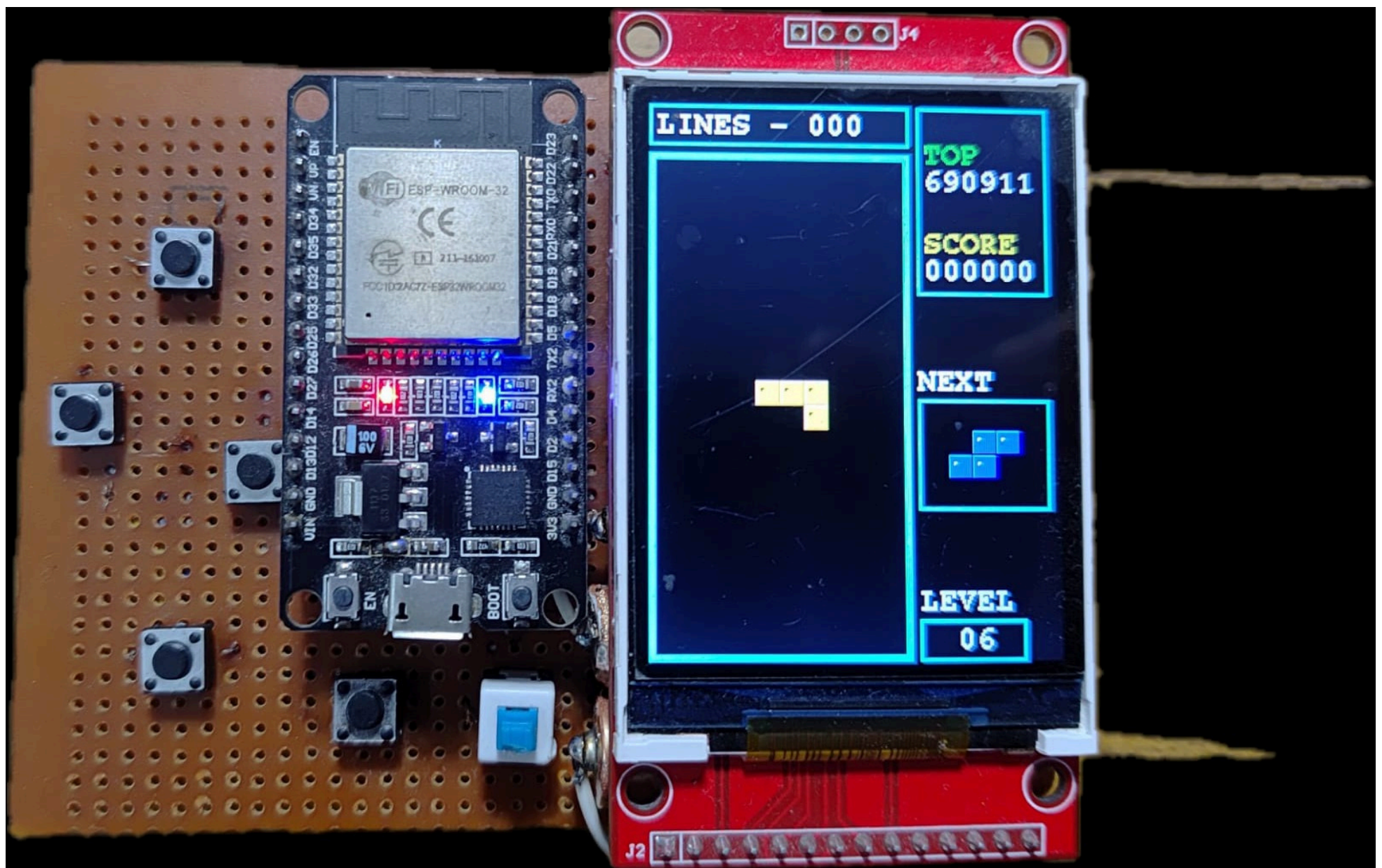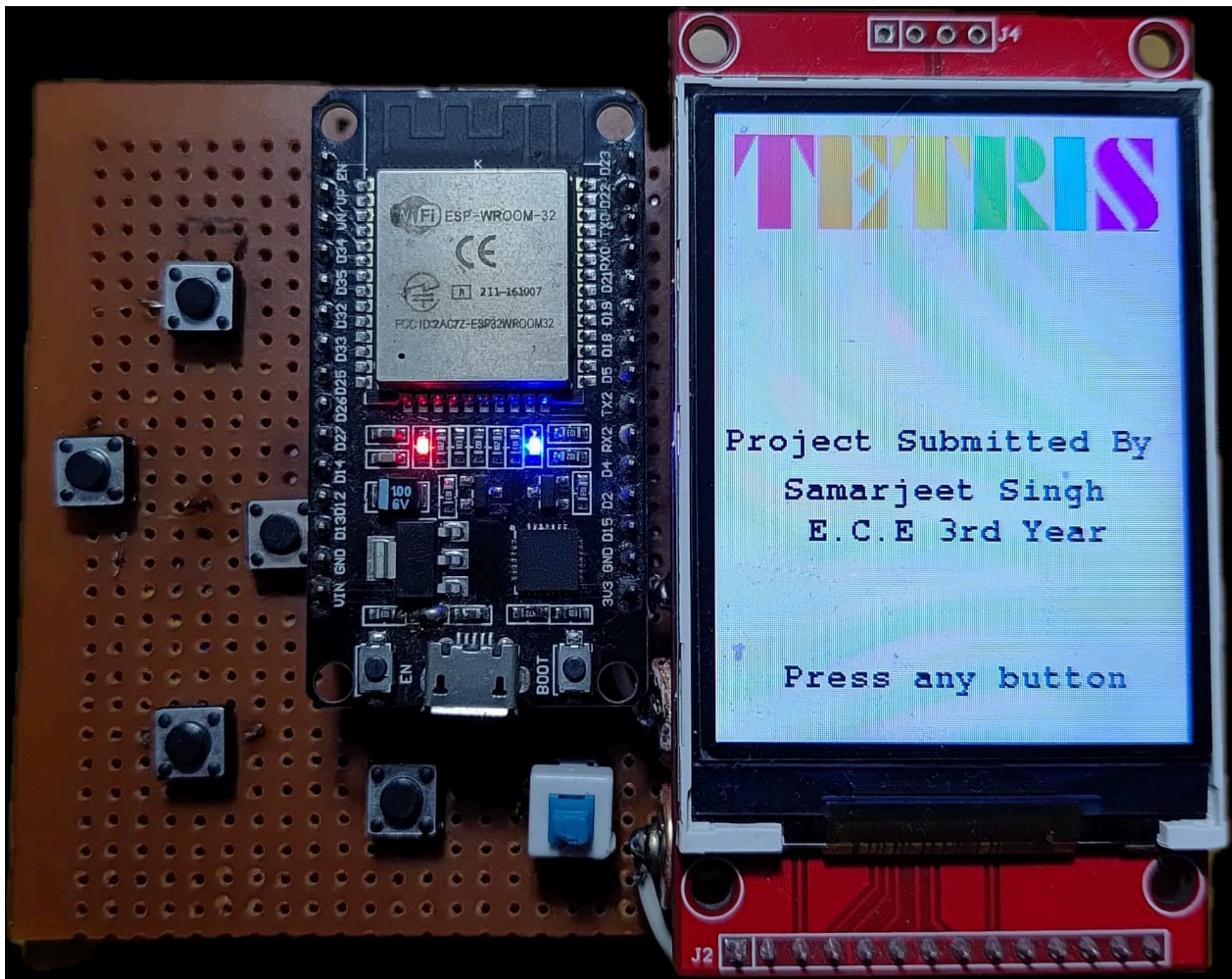
Snake Game

The Snake game is a classic arcade game where you control a snake that continuously moves around the screen. The objective is to eat food items that appear randomly, which makes the snake grow longer. As the snake gets longer, it becomes increasingly challenging to avoid running into itself. The game ends if the snake collides with any obstacles or itself. It's a simple yet addictive game that tests your reflexes and strategic thinking as you try to navigate the snake and maximize your score without crashing.

Code

https://drive.google.com/drive/folders/1Q
n6ikKcm PpRmC6kXApIUB2sUkf-sz9nM?
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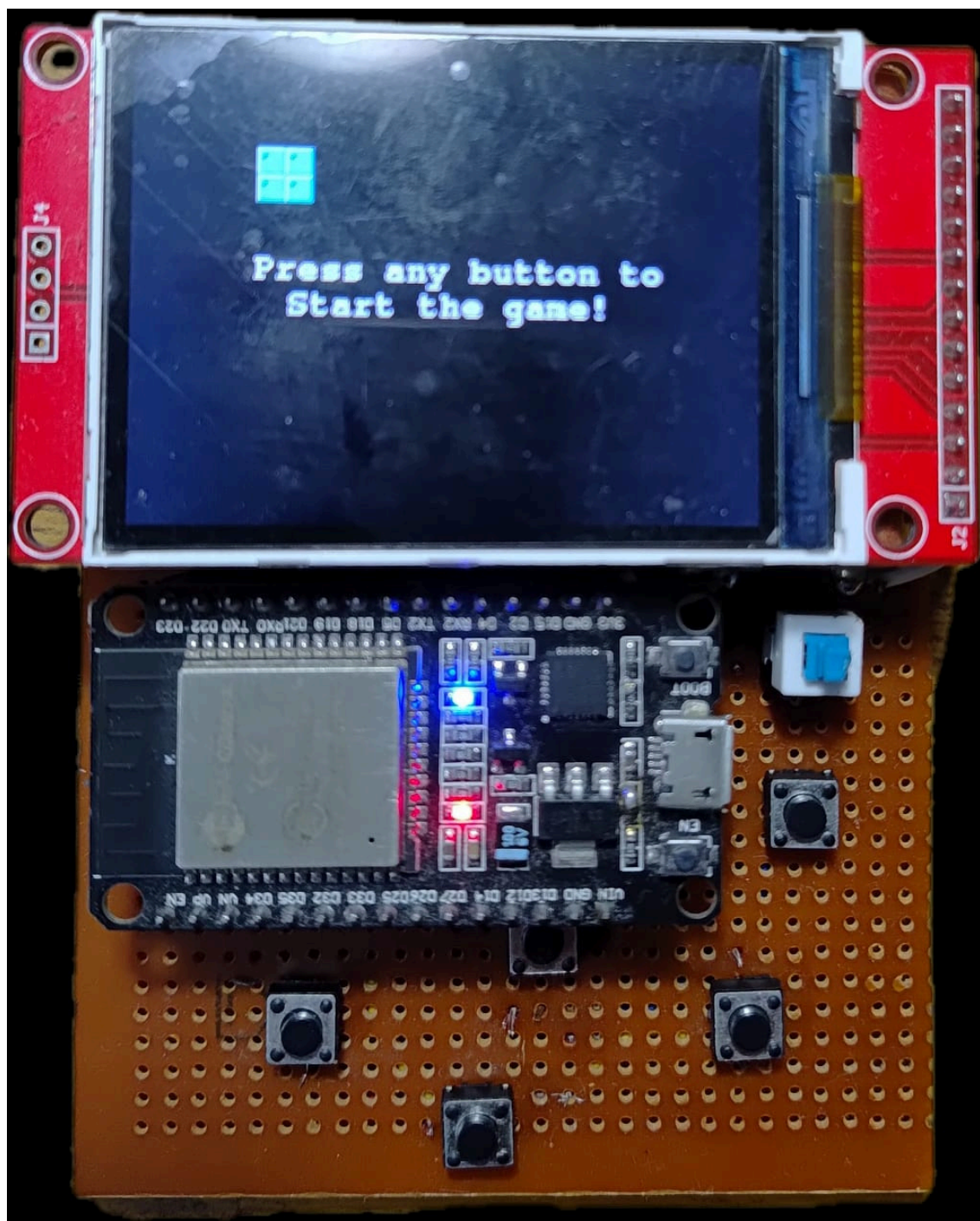provided

Images

Schematic

U5
ili9341_screen

Pin	Label
1	T_IRQ
2	T_DO
3	T_DIN
4	T_CS
5	T_CLK
6	SDO(MISO)
7	LED
8	SCK
9	SDI(MOSI)
10	DC/RS
11	RESET
12	CS
13	GND
14	VCC

V1
DC 4.5V

PB-CMN

3V3
D18
D23
D2
D4
D15
GND
3V3
VIN

ESP-WROOM-32

D23 D22 TX0 RX0 D21 D19 D18 D5 TX2 RX2 D4 D2 D15 GND 3V3

EN VP VN D34 D35 D32 D33 D25 D26 D27 D14 D12 D13

GND VIN

U6
devkit

Micro USB

GND

Switch button

closed 2
common 6
open 10

closed 1
common 4
open 8

U12
6PINDPDTBUTTON

U11
2PINSWITCH

D22

GND

U7
2PINSWITCH

D27

U10
2PINSWITCH

D14

D26

GND

U8
2PINSWITCH

GND

U9
2PINSWITCH

D25

GND