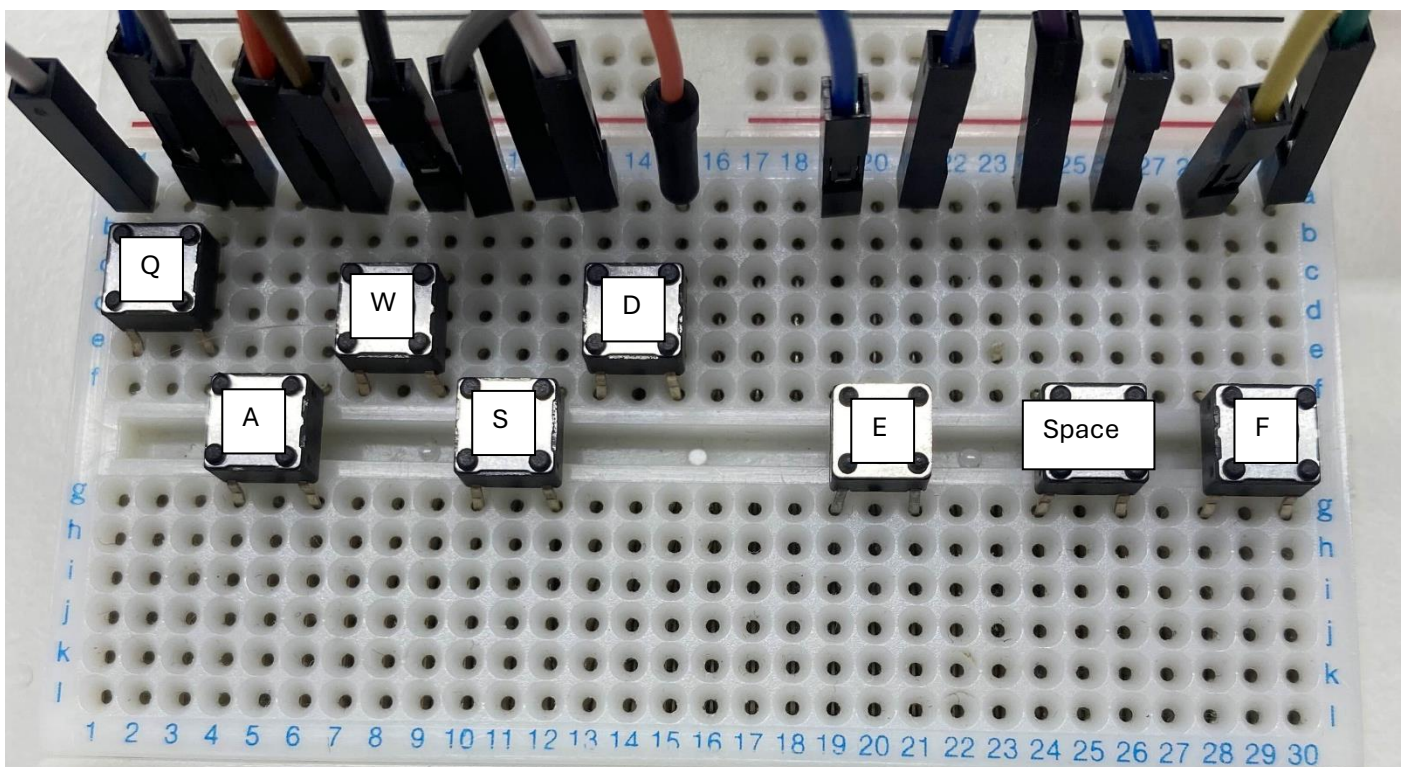# ESP32 GAMEPAD

Layout:

Inputs:

Directional Keys

- **W**: Move Forward
- **A**: Move Left
- **S**: Move Backward
- **D**: Move Right

Abilities

- **Q**: Focus Enemy
- **E**: Use Item
- **Space**: Dodge (single press, cannot be held)
- **F**: Attack

Overview:

Technical Information:

How It Works

1. **Button Inputs**:

   o Each button on the gamepad is connected to a specific pin on the ESP32.

   o When you press a button, the ESP32 detects the change and maps it to a corresponding key (e.g., "W", "A", "Space").

2. **Input Log on the LCD**:

   o The gamepad has an LCD screen that displays the last 5 button inputs, like an "input log."

   o Every key you press is added to this log and shown in real-time, with spaces between the characters for better readability.

   o For example, if you press "W", "A", "S", "D", and "Space," the LCD might display: W A S D _ (where _ represents Space).

3. **Bluetooth Connection**:

   o The ESP32 communicates with your PC or other Bluetooth-enabled devices.

   o Button presses are sent as input signals, which act like keyboard keys. This allows you to control games or other applications.

Limits of the Gamepad

1. **Maximum Input Display**:

   o The LCD can only show the last 5 button presses at any time. Older inputs are removed from the log as new ones are added.

2. **Key "Space" Behaviour**:

   o The "Space" key is unique and cannot be held down like other keys. It is sent as a single input each time you press it.

3. **No Multi-Key Hold Recognition**:

   o The gamepad does not support recognizing two simultaneous key presses. If you press two buttons together, only one is registered at a time.

4. **Input Timing**:

   o There is a slight delay (200 ms) to ensure stable operation. If you rapidly press and release a button, it may not register correctly.

5. **Bluetooth Range**:

   o The gamepad's Bluetooth connection typically works within a range of about 10 meters. Beyond this, inputs may not be received.

This setup makes the gamepad great for simple games or tasks but limits its use in fast-paced or highly complex games that require precise multi-key inputs or advanced features like analogue controls.

Contact:

GitHub:

- https://github.com/YannikSand/Esp32-Gamepad
- Email: MiataIsBack@gmail.com

- This project is open source and I am very open for any kind of improvement
- This project was originally a school Project which turned out to be better than expected
- Tested and mainly used in "DARK SOULS™ II Scholar of the First Sin". (I suck at it)
- You may encounter an Issue with the Port, since you manually have to set it to the correct one in the Python code.

```python
# Initialize serial port (adjust COM port and baud rate as needed)
ser = serial.Serial('COM3', 115200)
```

- Have fun testing / using this project!