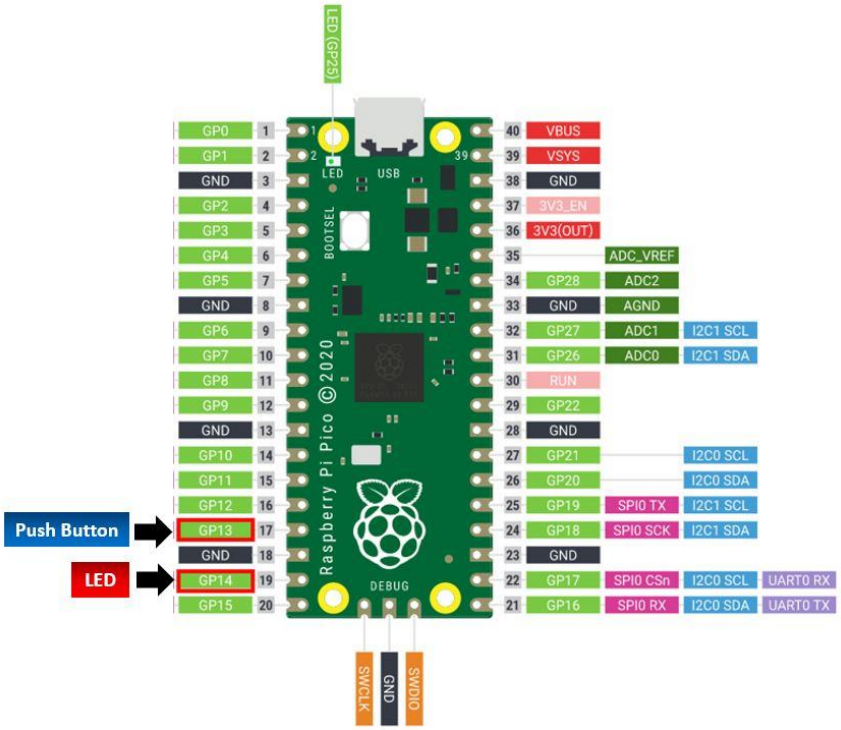
USER MANUAL FOR PI-PICO PROJECT

ITEMS NEEDED:

1. Pi- PICO (W) wireless module edition
2. Half Breadboard
3. Jumper wires (m-f, m-m)
4. JOY-STICK MODULE
5. SWITCH MODULE
6. Micro-usb for power supply.

PICO GPIO SCHEMATIC REFERENCE FROM THE INTERNET:



The above diagram represents the GPIO pins and their functions.
GP represents the pin transfer Data, GND: ground. VCC: voltage.
Other representations are beyond the scope of this topic.

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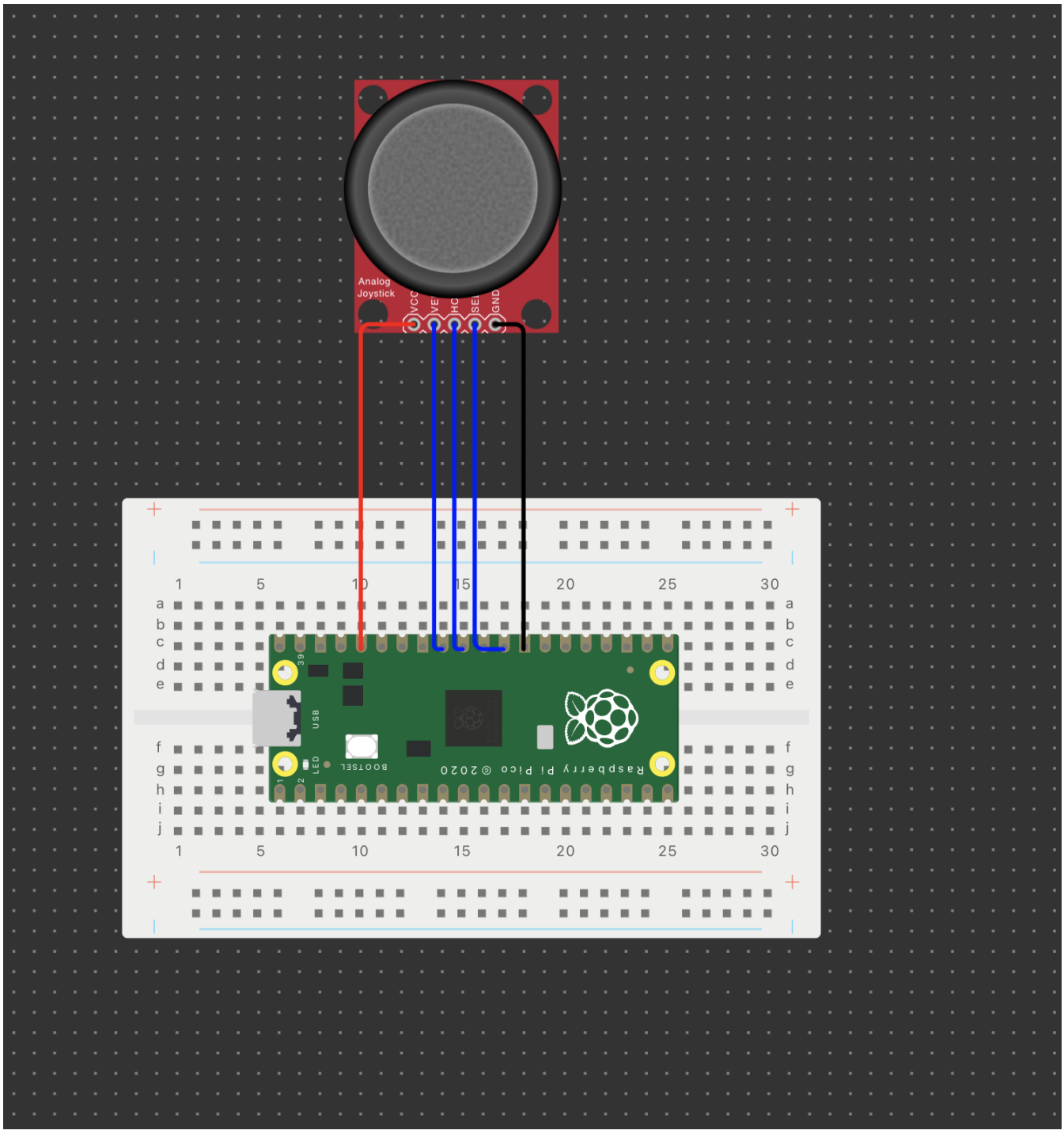
CONNECTING THE JOYSTICK TO PICO-W SCHEMATIC:



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The above diagram represents the schematic for connecting the joystick module to the raspberry PICO.

The module contains 5 pins: VCC, GND, VERTICAL, HORIZONTAL, BUTTON.

These pins must be connected to the PICO at the below given specifications:

VCC = VCC PIN OF RPI
GND = GND5 PIN OF RPI
VERTICAL = GP27
HORIZONTAL = GP26
BUTTON = GP22

These connection values are to be followed strictly as the code is modified to work with these pins. You can always change the code and match the pins according to your preferences.

CONNECTING KEY-STUDIO BUTTON SWITCH:

This switch consists of 3 pins: +VE, -VE, DATA pin.

These pins are to be connected according to the given schematic.

+VE = pico GND6
-VE = pico VCC
DATA PIN = GP17

PLEASE ALWAYS USE A RESISTOR TO STOP UNINTENTIONALLY DAMAGING YOUR PICO BOARD.

Connect the pico to the computer using micro-usb.

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Once the PICO is connected to the PC, release the bootsel button, drag and drop the firmware.

Once the pico gets connected to the pc, you can access it in the COM5, COM3 port of your computer.

Sometimes, the computer might incorrectly specify the com port. Make sure that you manually change it in the settings if it doesn’t work.

Open up visual studio and connect the PICO, clone the project from the given github repo.

Make sure that you’ve installed VISUAL STUDIO CODE.

Open visual studio code and install the extension
PICO-W-GO

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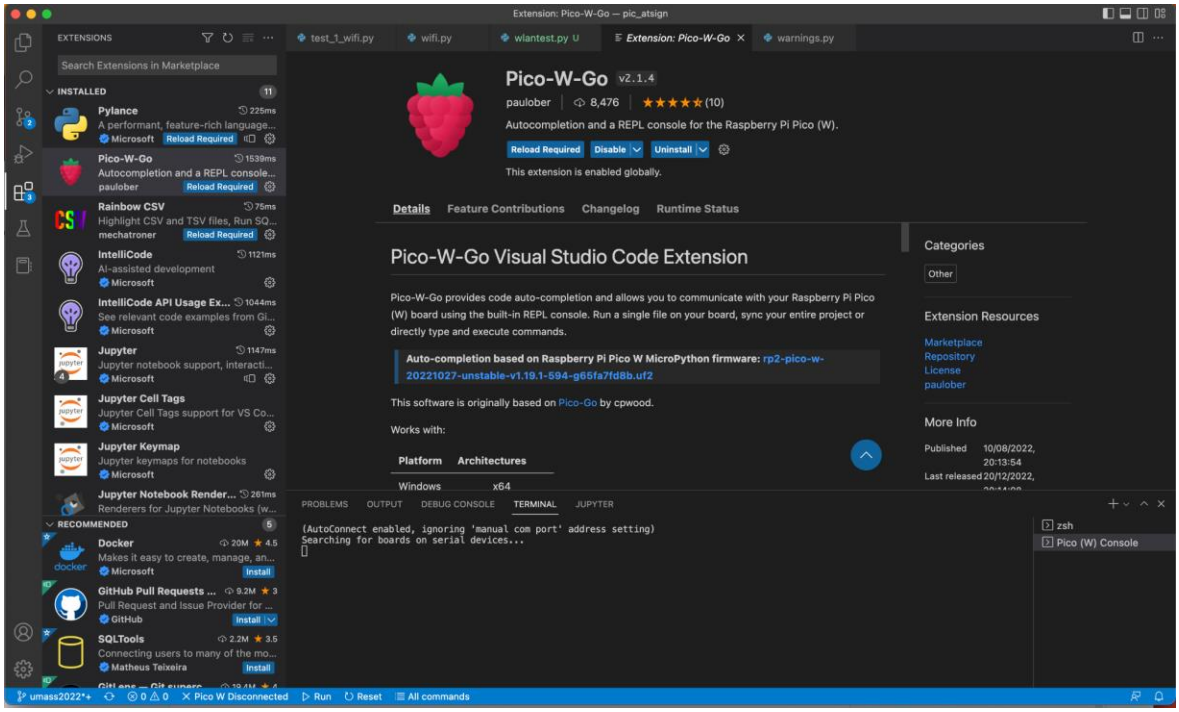
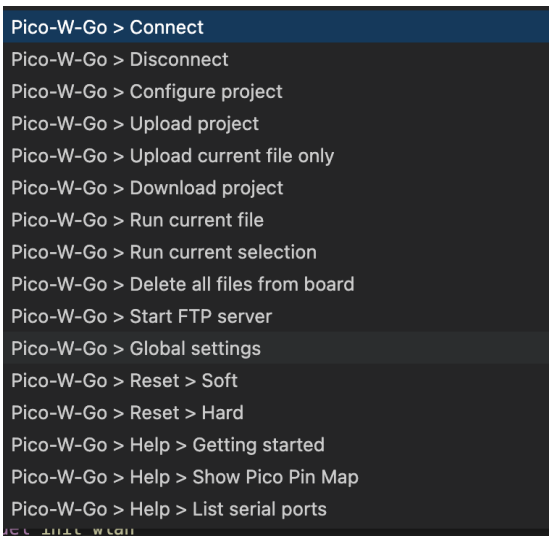


Once the extension is installed make sure that visual studio has detected your pico. You can connect your pico and disconnect it via bottom navigation bar as shown in the image.

LIST OF USEFUL COMMANDS WHILE CONFIGURING YOUR PICO:



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The above listed commands are used throughout the project.

1. Connect your device and check its status in the bottom navigation bar.
2. Use the command delete files to delete any previous files on the device.
3. Use the command UPLOAD project and let the ide upload all the files you've downloaded.

EDITING THE PROJECT FILE BEFORE UPLOADING:

- Settings.json: Please edit this file and change the credentials accordingly.
- It contains access point name, password and your atsign name.

Once you've entered the correct credentials run the command PIWO-W-GO UPLOAD to upload the entire project.

CREATING ATSIGN:

You can create own Atsign from the given website: **https://my.atsign.com/go**
You can create at atsing for free of cost.

You will need 2 atsigns, one for sending data server side, and one for client data receiver side.

Once you've created your atsign, please activate it an generate a key using the computer application atmosphere pro.

Keeps this keys in a secure folder as you will be needing this private key to decode the received data.

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You can modify the code in joystick.py to put an atsign of your choice. For the client and server side.

```
xAxis = ADC(Pin(26))
yAxis = ADC(Pin(27))
button = Pin(22,Pin.IN, Pin.PULL_UP)

while True:
    xValue = xAxis.read_u16()
    yValue = yAxis.read_u16()
    buttonValue = button.value()
    xStatus = "middle"
    yStatus = "middle"
    buttonStatus = "not pressed"
    if xValue <= 600:
        xStatus = "left"
    elif xValue >= 60000:
        xStatus = "right"
    if yValue <= 600:
        yStatus = "up"
    elif yValue >= 60000:
        yStatus = "down"
    if buttonValue == 0:
        buttonStatus = "pressed"
    print("X: " + xStatus + ", Y: " + yStatus + " -- button " + buttonStatus)
    utime.sleep(0.1)
```

The output can been seen on the javascript dashboard in realtime. This can be opened by the client and once he opens it, that's as easy as clicking get values to obtain the values from the database.