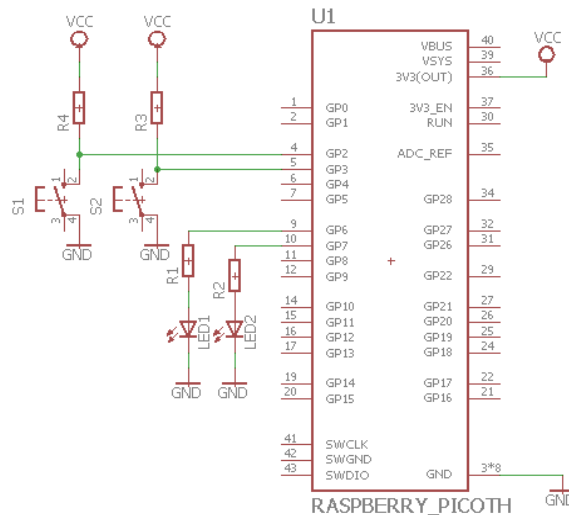


Using the Raspberry Pi Pico please assemble the following schematic:



Use  $R1 = R2 = 1\text{ K}\Omega$ ,  $R3 = R4 = 100\text{ K}\Omega$ .  
LED1 should be green and LED2 should be red.

To map the Raspberry Pi Pico board pins you can use the image [Raspberry Pi Pico Pinout](#).

Use also the serial communication library to help debug your program.

1. Using VSCode and Platformio create a new project that blinks LED1 with a frequency of 2 Hz, compile, flash and run it. Take a look at this [tutorial](#).
2. Change the program so the LED1 will be on when the button S1 is pressed. When S1 is not pressed the LED must be off.
3. Change the program so it will blink with a frequency of 0.5Hz when S1 is pressed. When S1 is not pressed the LED must be immediately off.
4. Maintaining the blink on demand functionality from the previous example, add the ability to turn on a second LED2 when the second button S2 is pressed. When S2 is not pressed LED2 must be off.
5. Maintaining the blink on demand functionality from the previous example, implement the ability to **toggle** the state of LED2 when the S2 is pressed.
6. Change the previous example so that LED2 will also blink when S2 is pressed, LED2 must blink with a period of 800 ms on plus 800 ms off.