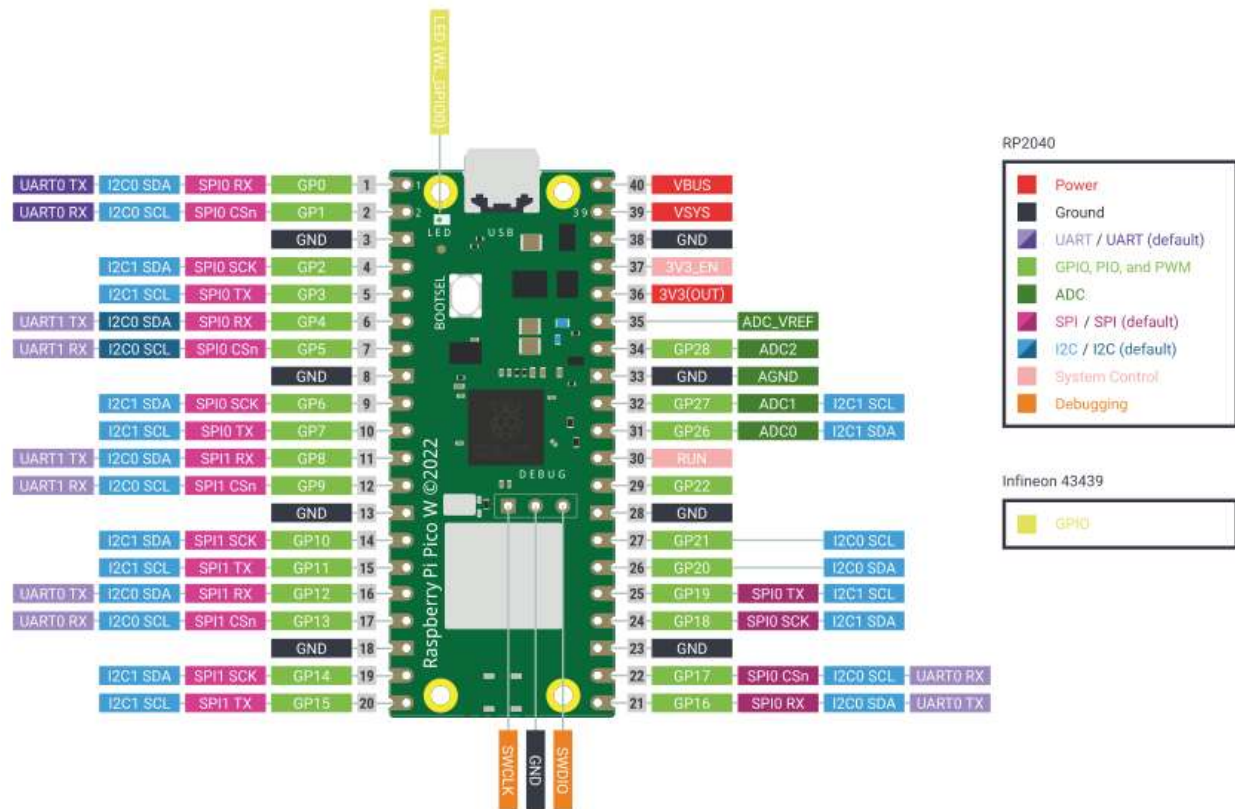


## Assignment for the Recruitment of Embedded System Engineer

**Q1)**

The Raspberry PI PICO simulator can be found here: <https://wokwi.com/>

The Pin Diagram is shown Here:



- Can You write a C program in PICO simulator to blink the LED 10 times in the first minute, 20 times in second minute and 30 times in third minute?
- Add a toggle button in above defined PICO connections to reverse the above function. I.e. Blink LED 30 times in first minute, 20 times in second minute and 10 times in 3rd minute.

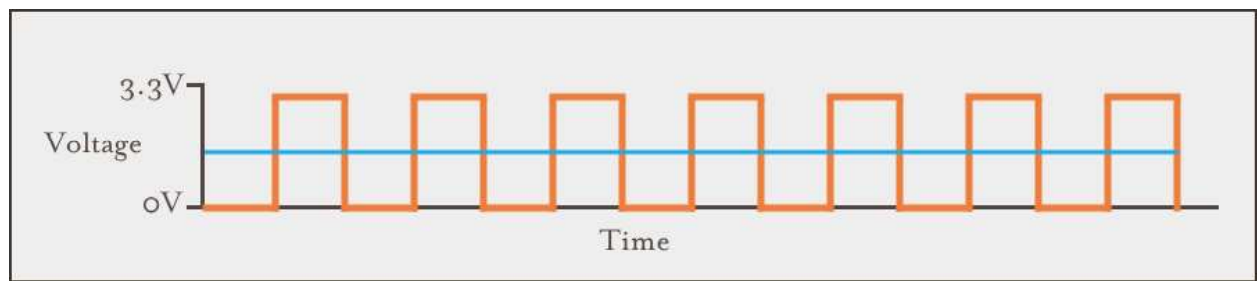
Please share the link to the working project in the simulator.

### Q-2)

We are generating a PWM signal as shown below by toggling an I/O pin between 0 and 1 on an MCU. The resulting waveform varies between 0V-3.3V.

Could you propose a circuit to shift this waveform around 0V mean, so that the output waveform varies between -1.65V to +1.65V.

Could you propose another circuit to shift this waveform back to the original level (above 0V).

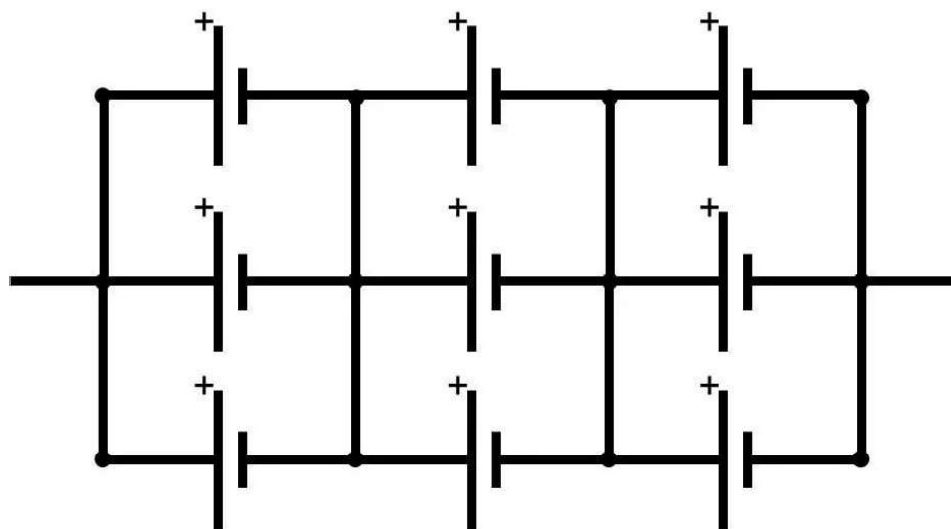


### Q-3)

While creating a battery pack for a certain voltage and capacity, the multiple cells could be connected in the following two topologies.

Could you explain the pros and cons of both the topologies?

### Topology-1



**Topology-2**

