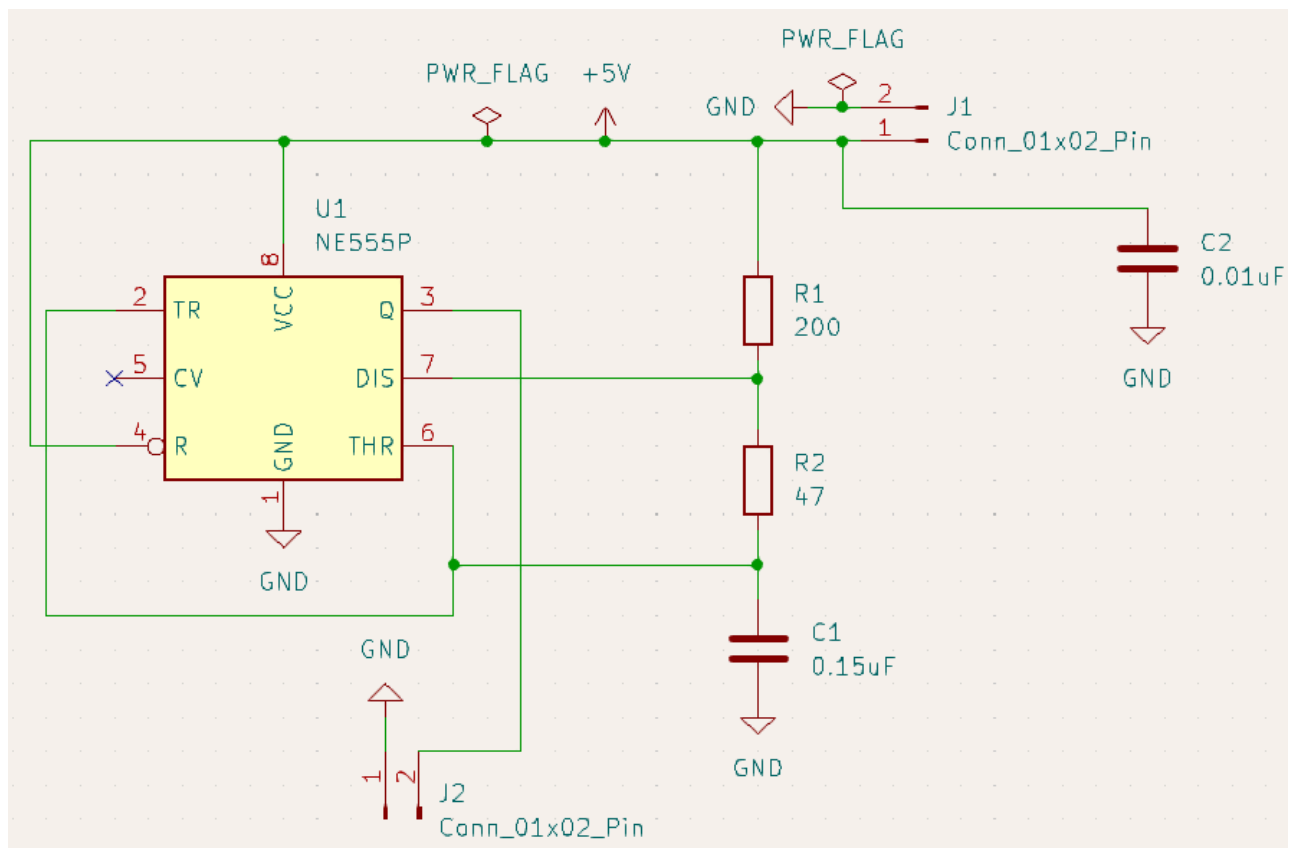


## Project Report: 555 Timer PCB Design

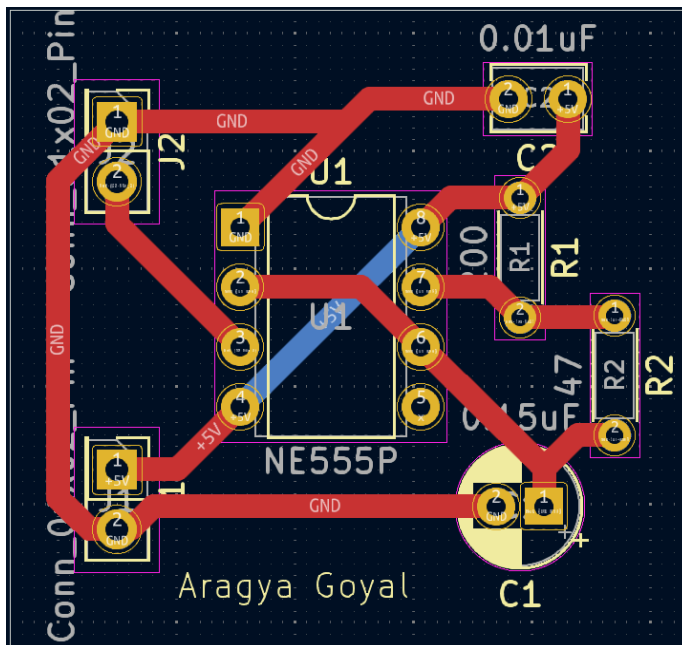
I chose KiCAD over Altium for this project due to its ease of importing footprints and overall usability. The resistor value of R2 was adjusted from 46.2 Ohms to 47 Ohms for easier in-house part sourcing. Two connectors were included to connect the PCB to the power supply (J1) and then to be able to access the output from the timer (J2). All parts were sourced from DigiKey, with the BOM provided at the end of the document.

### Circuit Schematic



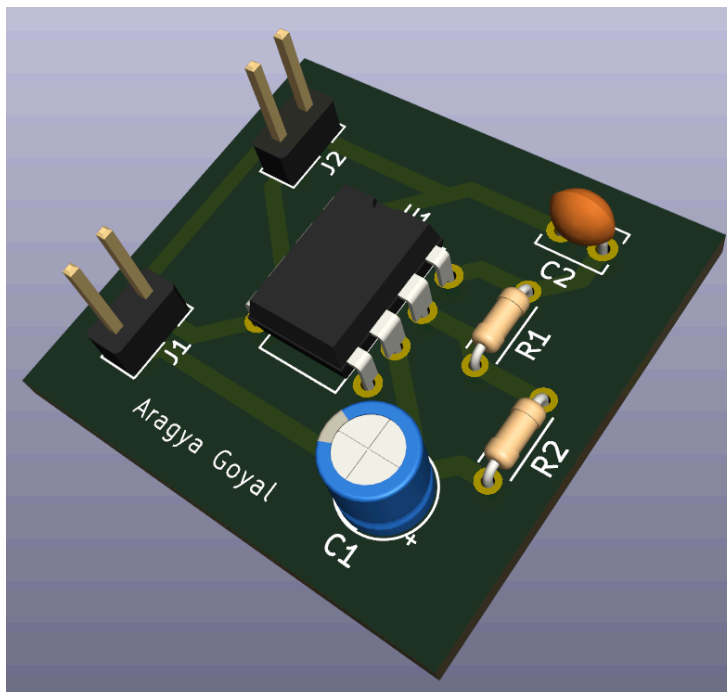
This is the circuit schematic of the PCB. It is very similar to the one I had designed for the first assignment, however I had to change the resistor value from 46.2 Ohms to 47 Ohms so that it would be easy to source parts.

## PCB Layout



The PCB layout puts the connectors to access power input and output on the left hand side and the majority of the working circuitry on the right hand side.

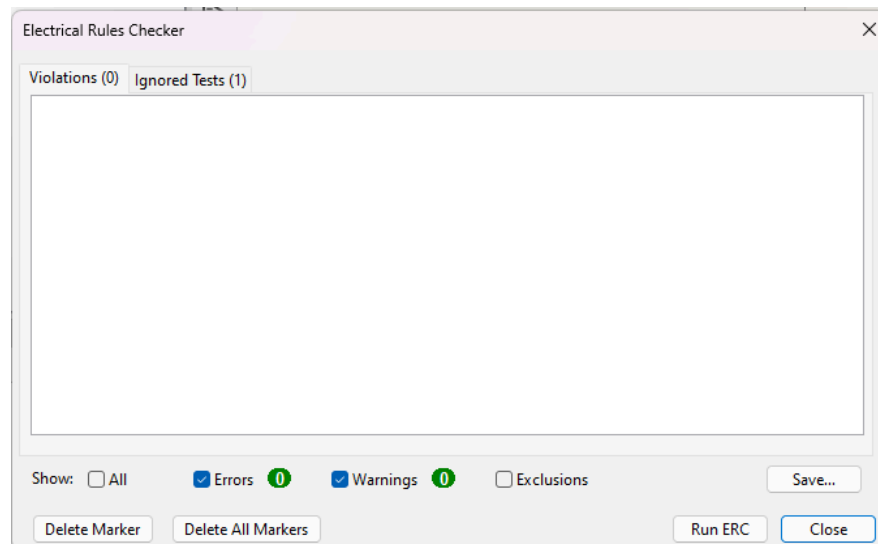
## 3D Model of PCB



Just a visualization of what the board will look like after manufacturing and assembly.

## Logs (Both logs attached in zip files)

- All Checks passed for both the ERC and the DRC with no issues.
- ERC



a.

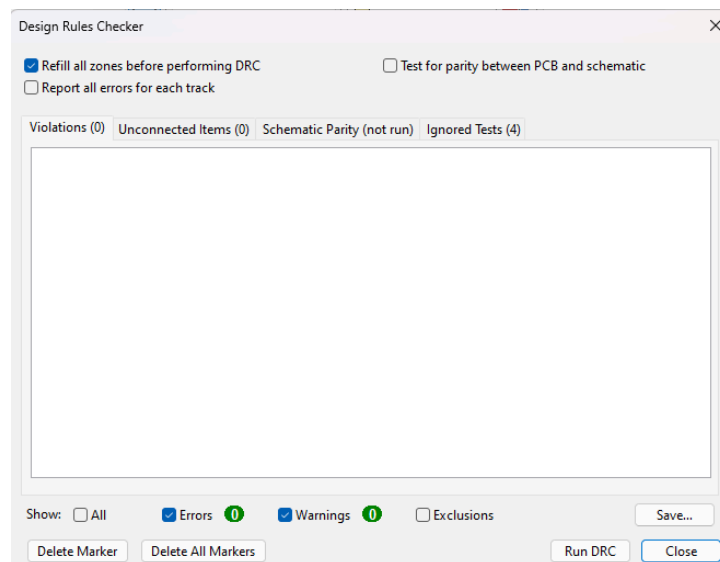
```
ERC report (2025-01-21T22:02:06-0500, Encoding UTF8)

***** Sheet /

** ERC messages: 0  Errors 0  Warnings 0
```

b.

- DRC



a.

```
** Drc report for A-Stable.kicad_pcb **
** Created on 2025-01-21T22:01:57-0500 **

** Found 0 DRC violations **

** Found 0 unconnected pads **

** Found 0 Footprint errors **

** End of Report **
```

b.

BOM

- This is the DigiKey generated BOM (attached in zip files)

Index	Quantity	Part Number	Manufacturer Part Number	Description	Customer Reference	Available	Backorder	Unit Price	Extended Price USD
1	1	CF18JT200RCT-ND	CF18JT200R	RES 200 OHM 5% 1/8W AXIAL	arg195	1	0	0.1	0.1
2	1	BC3943CT-ND	MRS16000C4709FCT00	RES 47 OHM 0.4W 1% AXIAL	arg195	1	0	0.35	0.35
3	1	493-15391-ND	UKL1HR15KDDANA	CAP ALUM 0.15UF 10% 50V RADIAL	arg195	1	0	0.36	0.36
4	1	399-4148-ND	C315C103K5R5TA	CAP CER 10000PF 50V X7R RADIAL	arg195	1	0	0.24	0.24
5	2	952-2261-ND	M20-9990245	CONN HEADER VERT 2POS 2.54MM	arg195	2	0	0.12	0.24
6	1	296-NE555P-ND	NE555P	IC OSC SINGLE TIMER 100KHZ 8-DIP	arg195	1	0	0.36	0.36

a.