

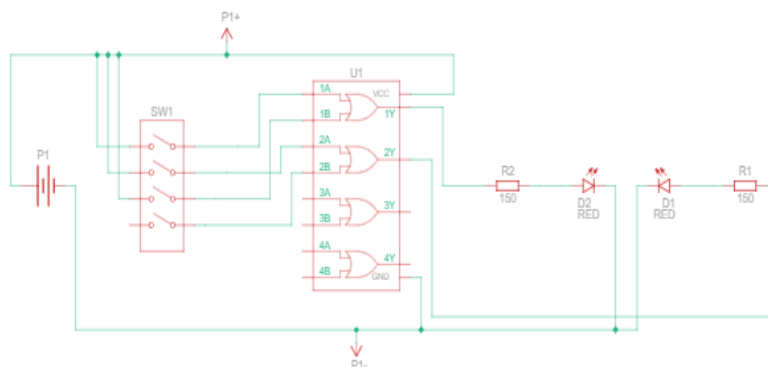
## 1. PROTOTYPE TYPE: DIGITAL CIRCUIT 4\*2 ENCODER

### 2. Simulation Results:

Components required : IC 7432 OR Gate, Led, connecting wires, DLD Kit, 1K Resistor.

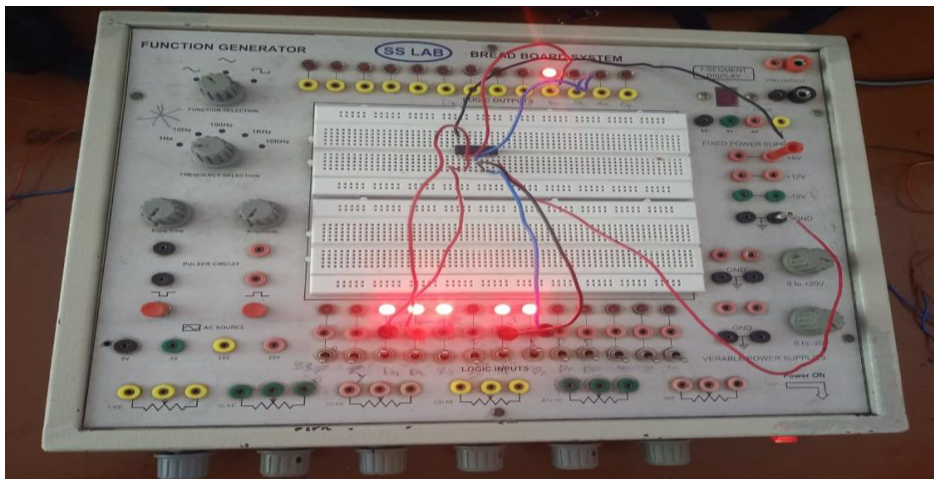
Process: Connect the components on breadboard according to the logic design and truth table then connect the pins on kit to the breadboard accordingly and switch on the kit vary the values according to the truth table and led starts glowing.

### CIRCUITS



In a digital IC Trainer kit connect the LED, Resistor, IC 7432 OR Gate pin, through connecting wires according to the circuit diagram and give the input pins connecting them to the output pins, and then switch on the kit LED starts glowing.

### 3. Hardware Results:

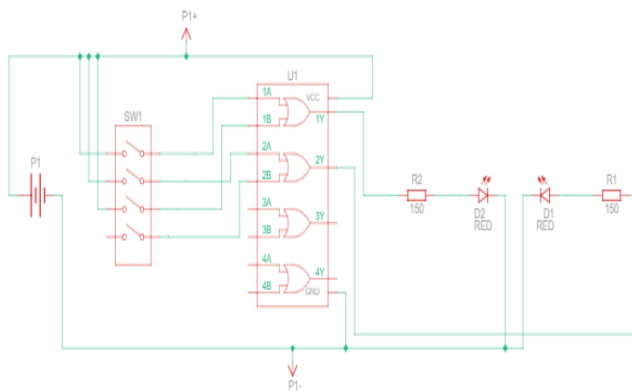


## 4. Comparison of Simulation and Hardware Results

**Simulation results:** LED Starts glowing so that we can observe the simulation representation in the form of light

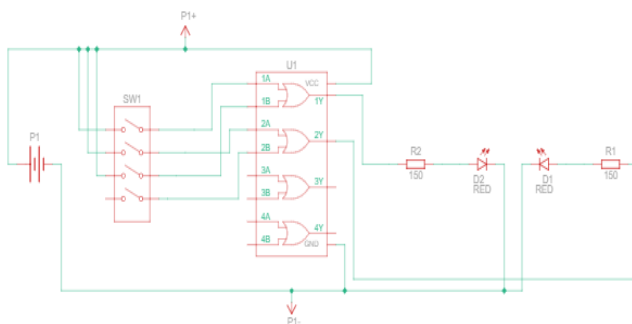
**Hardware results:** Hardware implementations involve constructing the circuit on a breadboard on the digital IC Kit. Hardware implementations reveal additional complexities and imperfections.

## 5. Design Finalization:

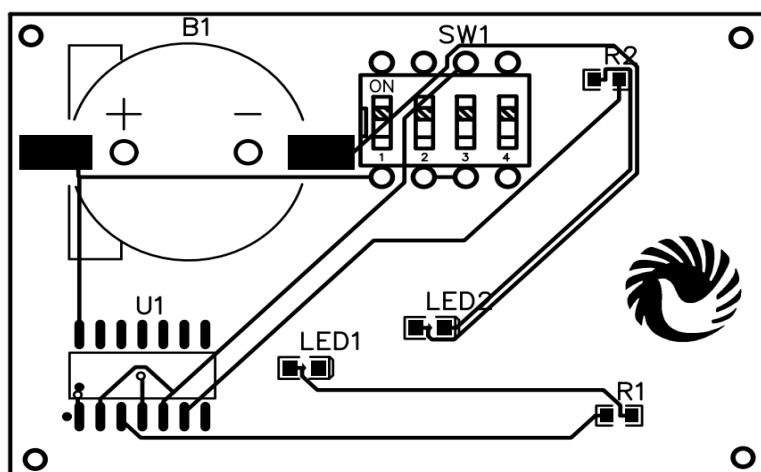


## 6. Circuit building on Easy EDA tools

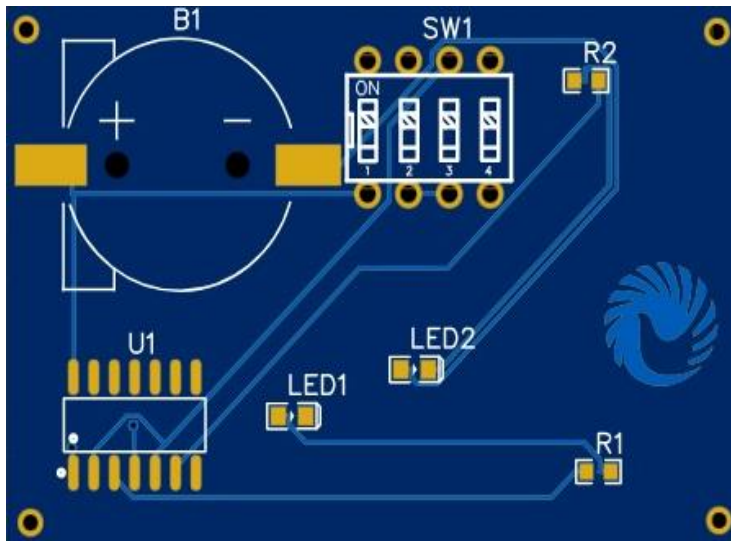
- In Easy EDA Software draw the circuit accordingly



- Then save the circuit and convert schematic to PCB
- Then arrange the components and auto route so that it will arrange accordingly



- Change PCB to any 2D and 3D model view



## 7. PCB Designing on Easy EDA Tools:

1. After designing the circuit convert that schematic to PCB
  2. Then place the components and click on route and press auto route so that the components will be arranged accordingly
  3. Then layout can be changed to 2D and 3d model to view the final design.
- PCB layout for manufacturability and performance.
- Components can be placed with the minimal space inside the layout after that place all the components
  - After placing click the track and connect the components
  - Holes can be inserted at the corners
  - Auto route for better PCB Design

## 8. Verification of the final design : DRC check is performed after routing.