

**Bread Board:**

1. A bread board is a panel where individual elements like Resistors, capacitors and inductors can be connected without soldering or knotting the wires with each other, so this gives an easy way to insert these elements in the bread board to form a circuit.
2. The Figure-1 below shows Bread board and its division into slots where an individual pin of an element can be inserted,

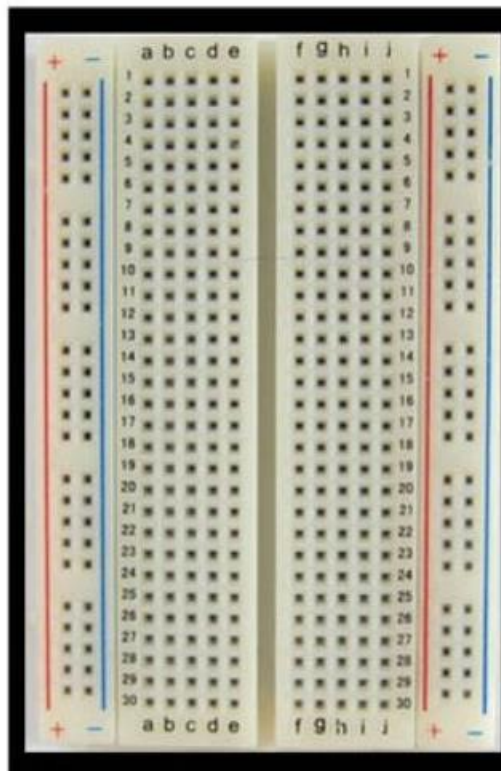


Figure-1

3. Bread board is used for small voltages and current applications to make the circuit on it.

AL-IMAM MUHAMMAD IBN SAUD ISLAMIC UNIVERSITY  
ELECTRIC CIRCUITS LAB – EE226

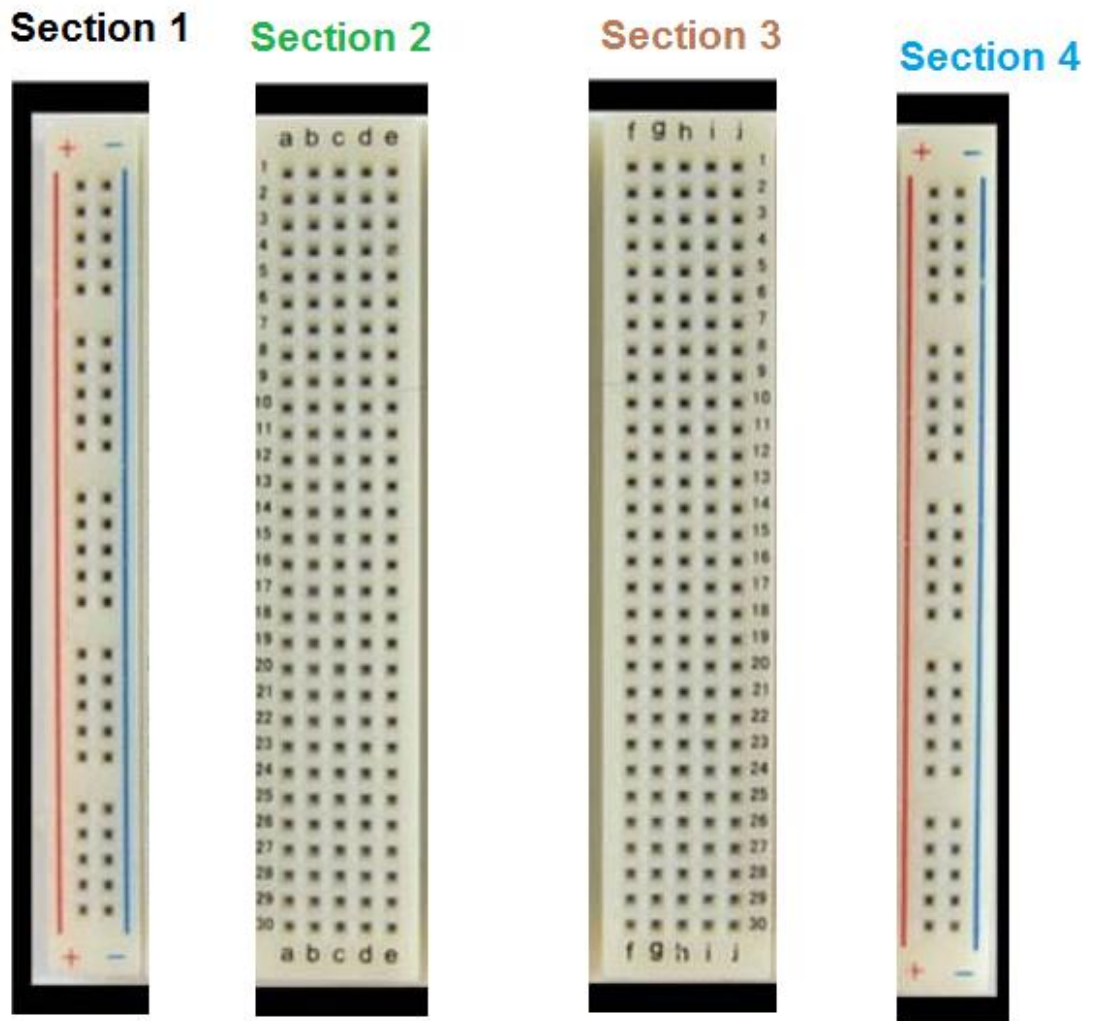


Figure-2

4. In Figure-2 Bread board is divided into 4 sections as shown above, each section has numbering
- The first section has two columns with + and - sign and 30 rows numbered from 1 to 30.
  - The second section has 5 columns with **a, b, c, d, e** and 30 rows numbered from 1 to 30
  - The third section has 5 columns with **f, g, h, i, j** and 30 rows numbered from 1 to 30
  - The fourth section has two columns with + and - sign and 30 rows numbered from 1 to 30.

AL-IMAM MUHAMMAD IBN SAUD ISLAMIC UNIVERSITY  
ELECTRIC CIRCUITS LAB – EE226

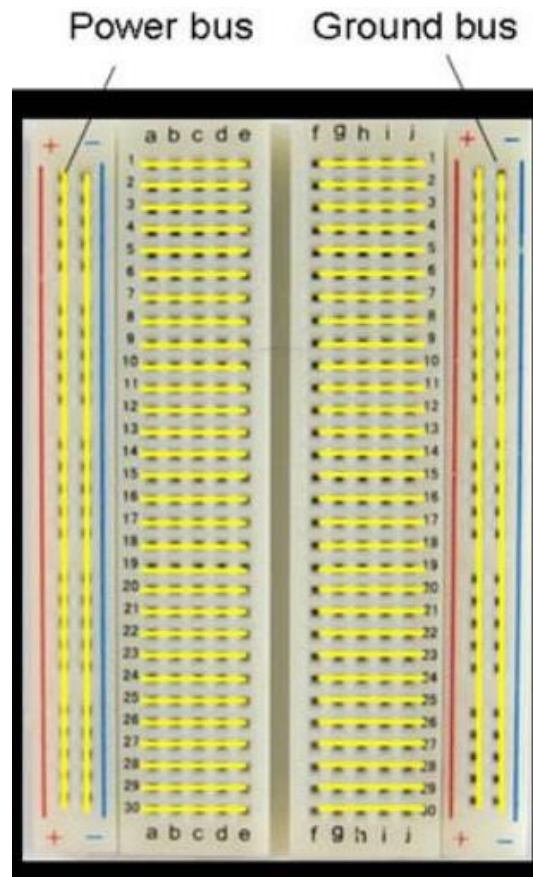


Figure-3

5. In Figure-3 we can see the internal connections of the different sections the **yellow line** shows that the slots are connected in which way
6. The Section-1 has two columns with + and – sign, the + sign is a single wire connection for all the 30 rows, we can have an example, as if we want to connect 5 resistors to a power supply we connect power supply in any one slot of + sign and from that on the same column(+ sign ) we connect one end of each resistor and the other end to –sign on ground bus in section -4 and all of them will get the power supply, in Circuit analysis it is equal to 5 resistors and Voltage source connected in parallel.
7. Similarly the Section-2 shows that **a, b, c, d, e** (all columns) on each row are connected by a single wire ,we can have an example if we want to connect two resistors in series say  $R_1$  and  $R_2$  connect one end of  $R_1$  to slot **[1,a]** (column **a** and Row **1**) and then connect other end of  $R_1$  to slot **[4,a]** then connect resistor  $R_2$  to slot **[4,b]**, as the row is same for  $R_1$  and  $R_2$  and **a, b,** are internally connected so  $R_1$  and  $R_2$  are now in series, connect the other end of  $R_2$  to **[8,b]**.
8. Section-3 is similar to section-2 and Section-4 is similar to Section-1.