LAB 2

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**Worktime:** - 3 hours

**Aim:** - In this LAB, we will perform and learn following sections: -

1. To design a simple digital circuit called full adder.
2. Learn to use FPGA tools to enter a schematic, simulate your design and download design onto a chip.
3. To build adder on a breadboard using discrete chips to get a more tactile sense of digital logic.

Completed truth table, including the values in the Cout column: -

|  |  |
| --- | --- |
| **Inputs** | **Outputs** |

|  |  |  |  |  |
| --- | --- | --- | --- | --- |
| **Cin** | **B** | **A** | **Cout** | **S** |
| 0 | 0 | 0 | 0 | 0 |
| 0 | 0 | 1 | 0 | 1 |
| 0 | 1 | 0 | 0 | 1 |
| 0 | 1 | 1 | 1 | 0 |
| 1 | 0 | 0 | 0 | 1 |
| 1 | 0 | 1 | 1 | 0 |
| 1 | 1 | 0 | 1 | 0 |
| 1 | 1 | 1 | 1 | 1 |

a) Completed schematics: -