

# North South University Department of Electrical and Computer Engineering CSE231L: Digital Logic Design Lab

Project Title: 7 Segment Display

### Requirements:

1. Project Report.
2. Software Implementation.
3. Hardware Implementation.

**Phase 1: Combinational part**

### Project Report:

* Truth Table
* Boolean Algebra (Solve it)
* Using NAND gates (Solve it)
* Using NOR gates (Solve it)
* Using SOP and POS (Solve it)
* K- map (Solve it)
* Using MUX and Decoder
* Mention the cost

**Software Implementation:** Implement All the mentioned (above) circuits in Logisim and choose the optimized one and explain why it is optimized. (briefly)

**Hardware Implementation:** Now implement the chosen optimized circuit in Hardware.

## Phase 2: Sequential part

### Project Report:

* Truth Table, Excitation Table, Characteristics Table
* Solve it Using J-K Flip Flop.
* Solve it Using T Flip Flop.
* Solve it Using D Flip Flop.
* Mention the cost

**Software Implementation:** Implement All the mentioned (above) circuits in Logisim and choose the optimized one and explain why it is optimized. (briefly)

**Hardware Implementation:** Now implement the chosen circuit in Hardware.

## Seven-Segment Display (Groupwise):

|  |  |
| --- | --- |
| **Group No:** | **Display** |
| 1 | 9\_rAcE. |
| 2 | 8-BuGs. |
| 3 | 7\_qUIt. |
| 4 | 6-IcOn. |
| 5 | 5\_LIne. |
| 6 | 4-pItY. |
| 7 | 3\_ScAn. |
| 8 | 2-DrAg. |
| 9 | 1\_BIrd. |