List of Experiments

1. Demonstrate the working of AND, OR, and NOT gates.
2. Demonstrate the working of NAND, NOR and XOR gates.
3. Design and implement the half-adder and demonstrate the working on simulator.
4. Design and implement the full-adder and demonstrate the working on simulator in two scenarios.
    a. Using AND, OR and XOR gates
    b. Using two half adder
5. Design 8-input multiplexors and demonstrate the working on simulator.
6. Design the circuit diagram for the following Boolean expression using 2-input gates.

$$\overline{A}BC + A\overline{B}C + AB\overline{C} + ABC$$

    a. Without simplification
    b. With simplification
7. Demonstrate the working of S-R, J-K, T and D flip-lops.
8. Design and implements the 4-bit shift register in following scenarios.
    a. Serial Input Serial Output
    b. Serial Input Parallel Output
    c. Parallel Input Serial Output
    d. Parallel Input Parallel Output
9. Design and implement modulo 8 Synchronous counter using D flip-flops.
10. Design 3-bit ripple counter using J-K flip flops.

Resources To be Followed

Logisim Software: (https://sourceforge.net/projects/circuit/)

1) https://www.youtube.com/watch?v=NAITQqdOw7c&list=PLvjlcTfwDj4spSN4g3S8IHbqY4Qkb5LxP
2) https://www.youtube.com/watch?v=RdnT_Ujq72E&list=PL9Tu_yD7oJURQqPEAQ78FggiDeiK7MqVb
3) https://www.youtube.com/watch?v=lvYCchzQTyE&list=PL7wffs-oJ6x3ey5kFlCe-qSaVsw4aHkYK
4) https://www.youtube.com/watch?v=fh9uxAiqgow&list=PLc61Ym_C47gpcBlo5ZxGI5RDd-cx3gjaI