
COMPUTER ORGANISATION LAB

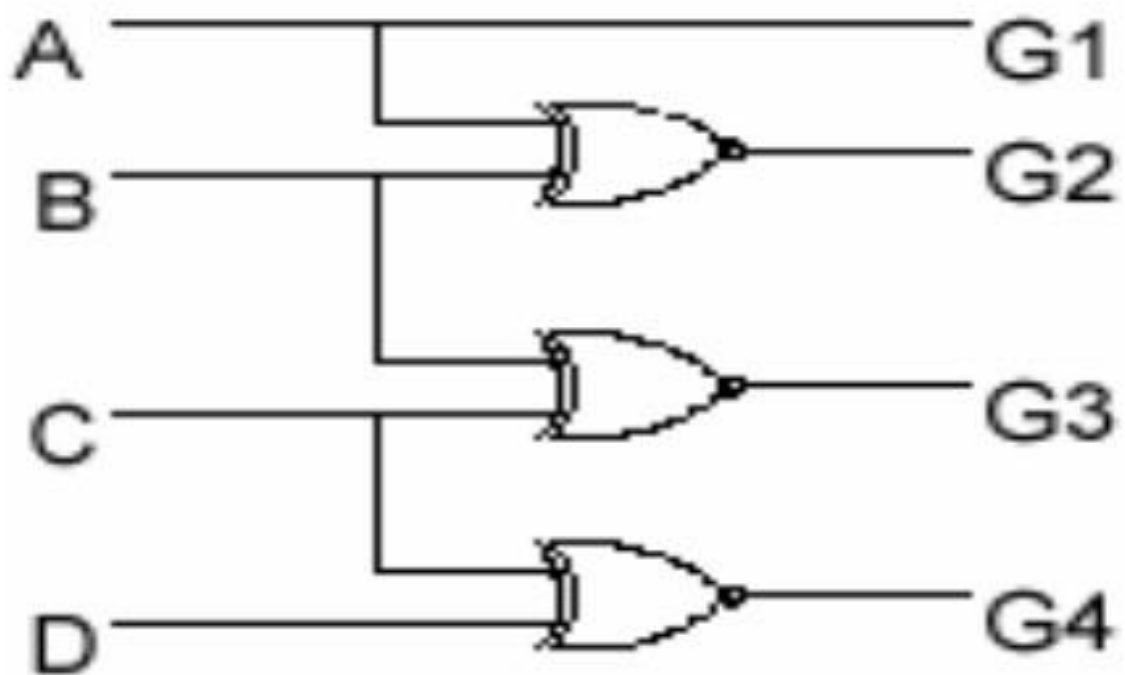
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Section - A

EXPERIMENT 5 : Implement binary to gray and gray to binary conversion

a) Binary to Gray Code Converter: Binary code is a very simple representation of data using two values such as 0's and 1's, and it is mainly used in the world of the computer. The binary code could be a high (1) or low (0) value or else even a modify in value. Gray code or reflected binary code estimates the binary code nature that is arranged with on & off indicators, usually denoted with ones & zeros. These codes are used to look at clarity as well as error modification in binary communications. Circuit Diagram of Binary to Gray Code Converter Truth Table A



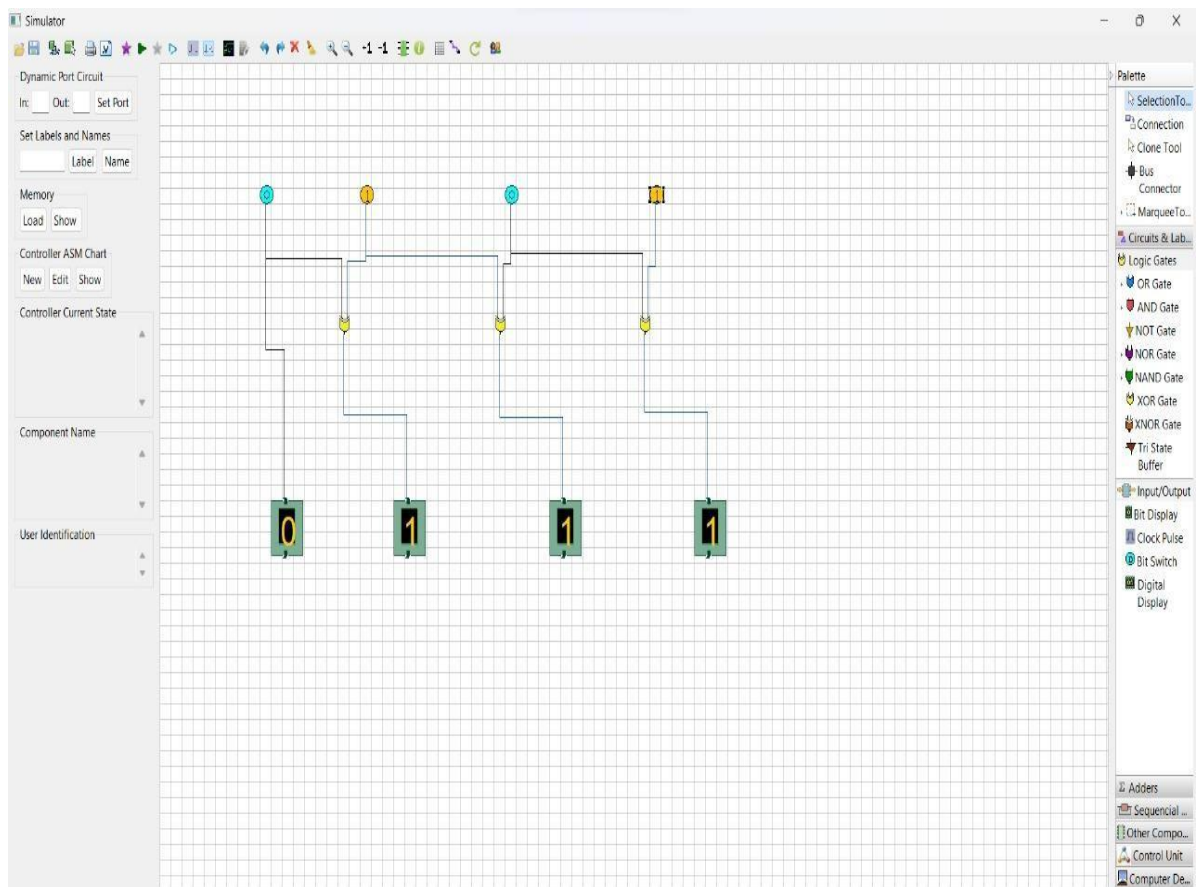
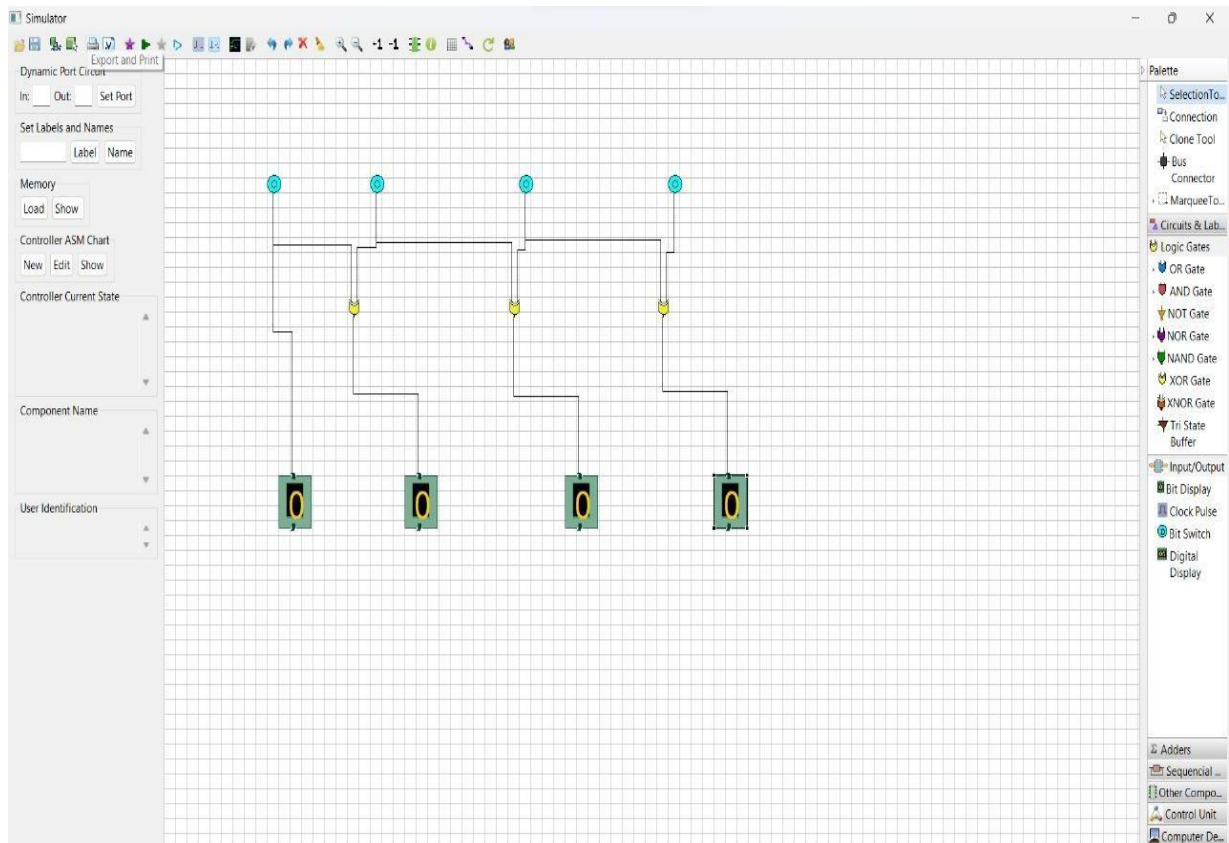
Circuit Diagram of Binary to Gray Code Converter

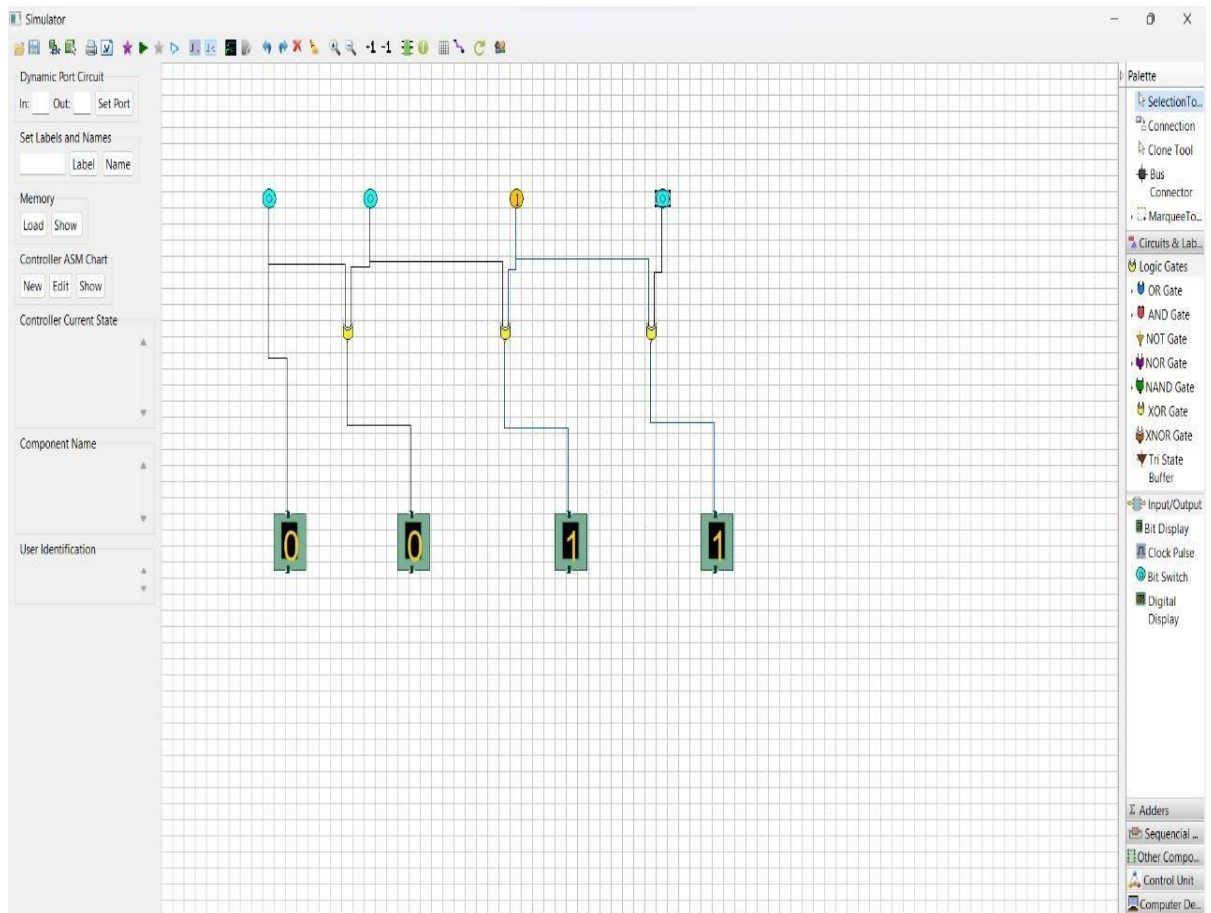
Truth Table

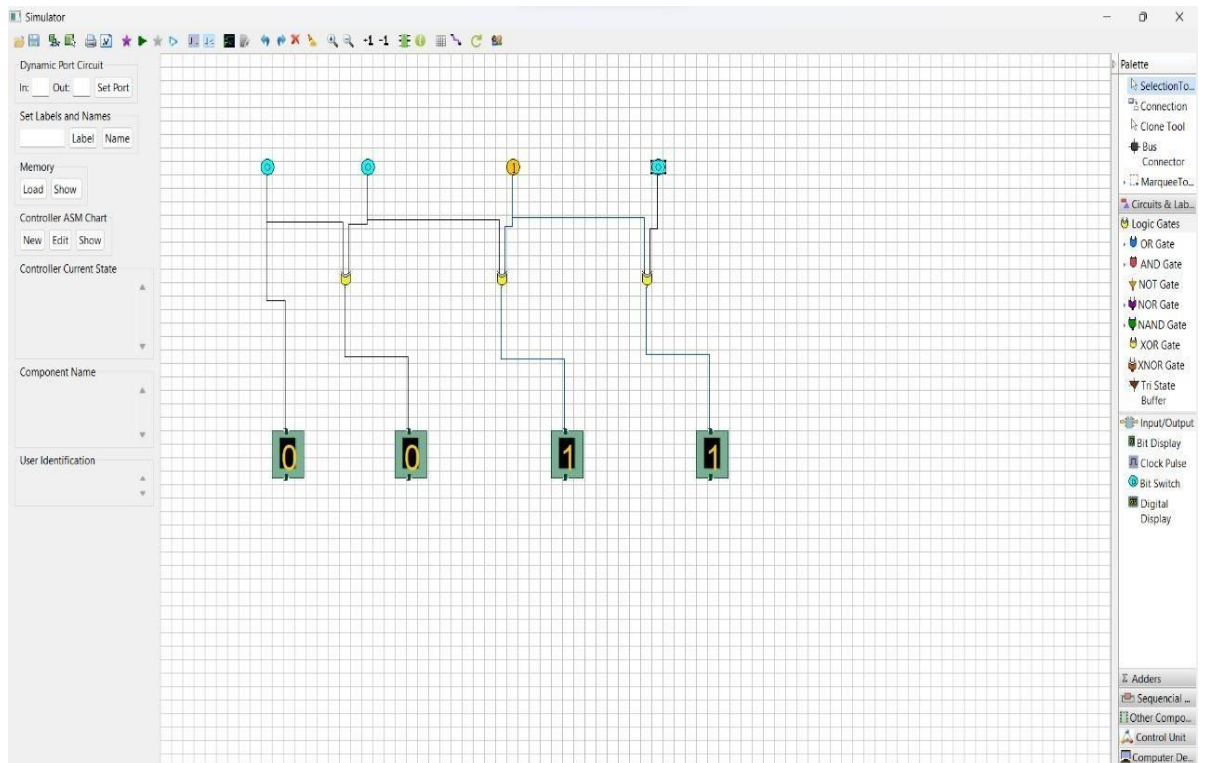
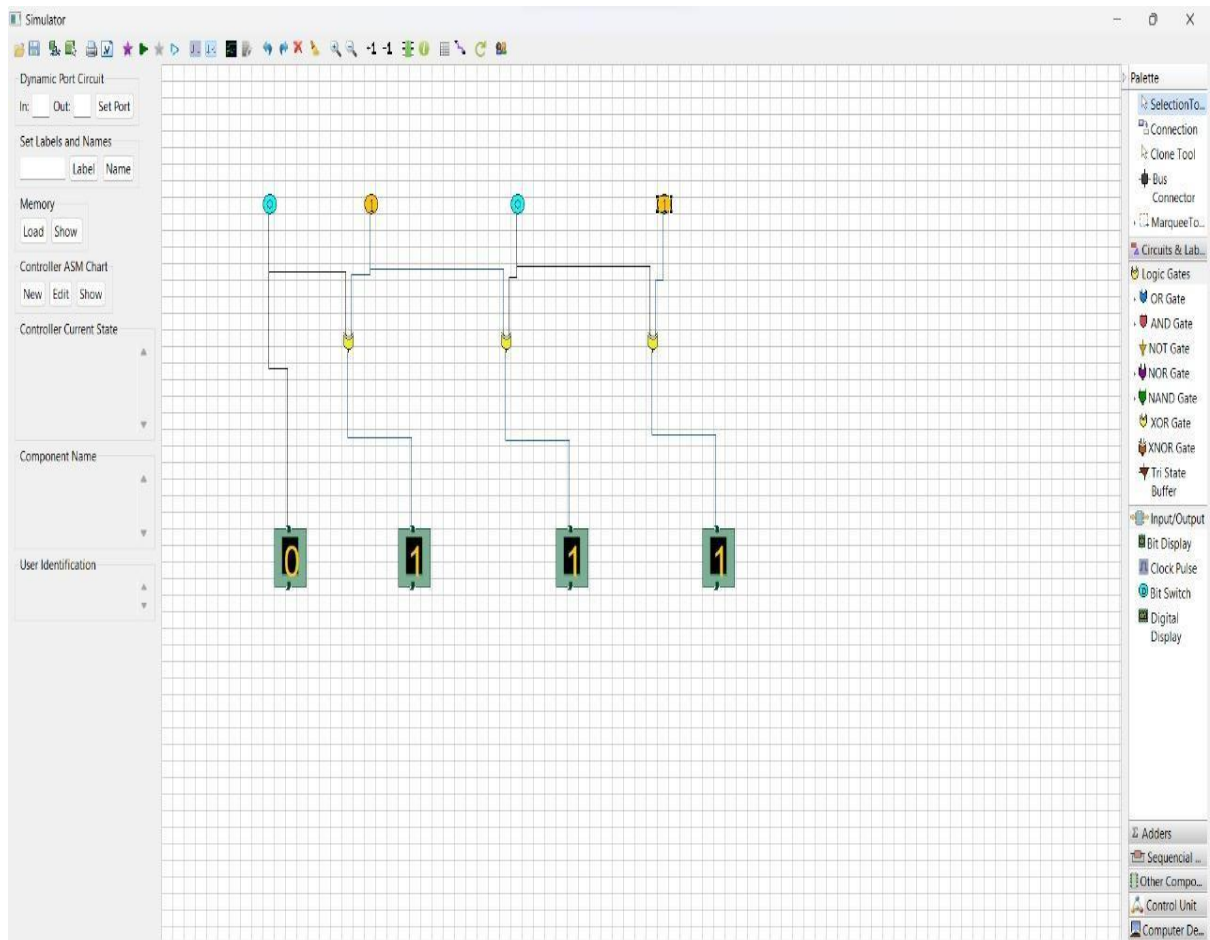
A	B	C	D	G₄	G₃	G₂	G₁
0	0	0	0	0	0	0	0
0	0	0	1	0	0	0	1
0	0	1	0	0	0	1	1
0	0	1	1	0	0	1	0
0	1	0	0	0	1	1	0
0	1	0	1	0	1	1	1
0	1	1	0	0	1	0	1
0	1	1	1	0	1	0	0
1	0	0	0	1	1	0	0
1	0	0	1	1	1	0	1
1	0	1	0	1	1	1	1
1	0	1	1	1	1	1	0
1	1	0	0	1	0	1	0
1	1	0	1	1	0	1	1
1	1	1	0	1	0	0	1
1	1	1	1	1	0	0	0

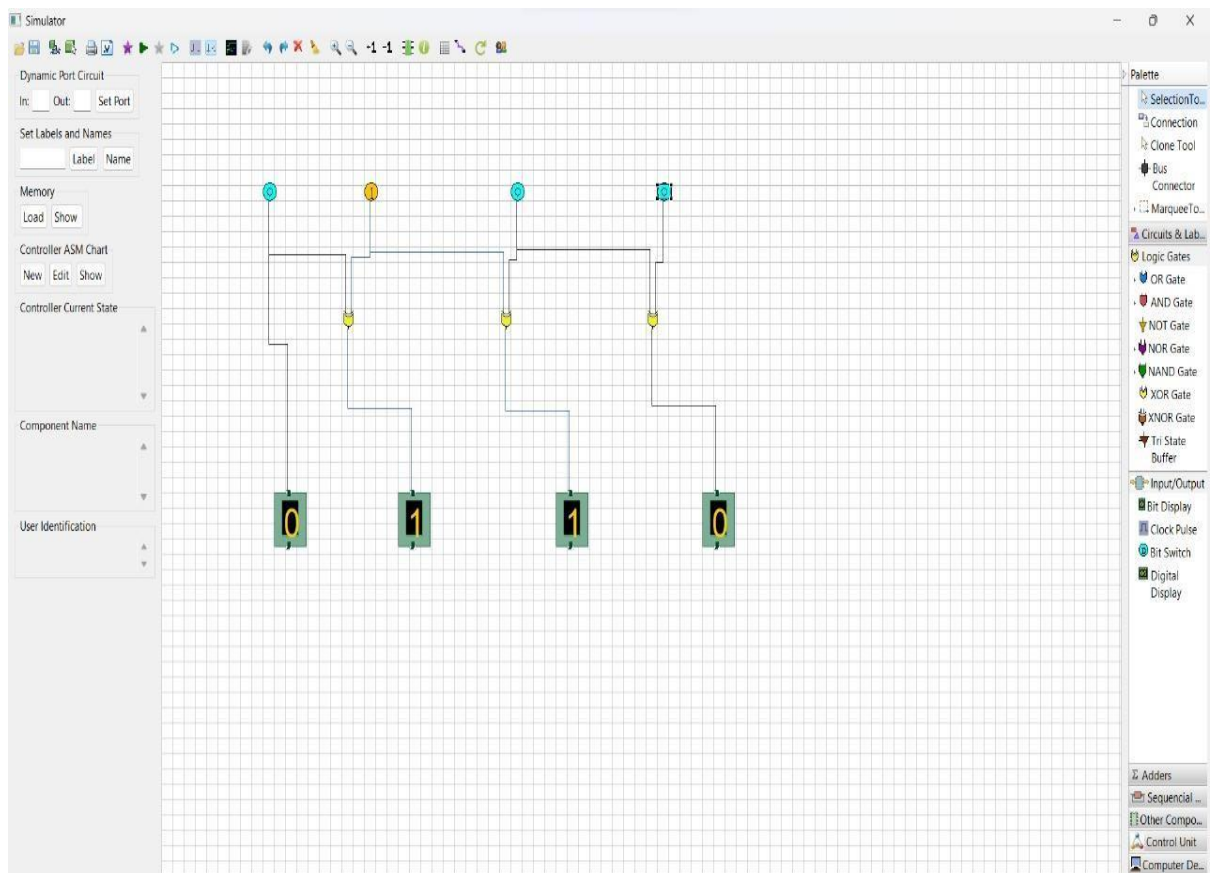
Truth Table

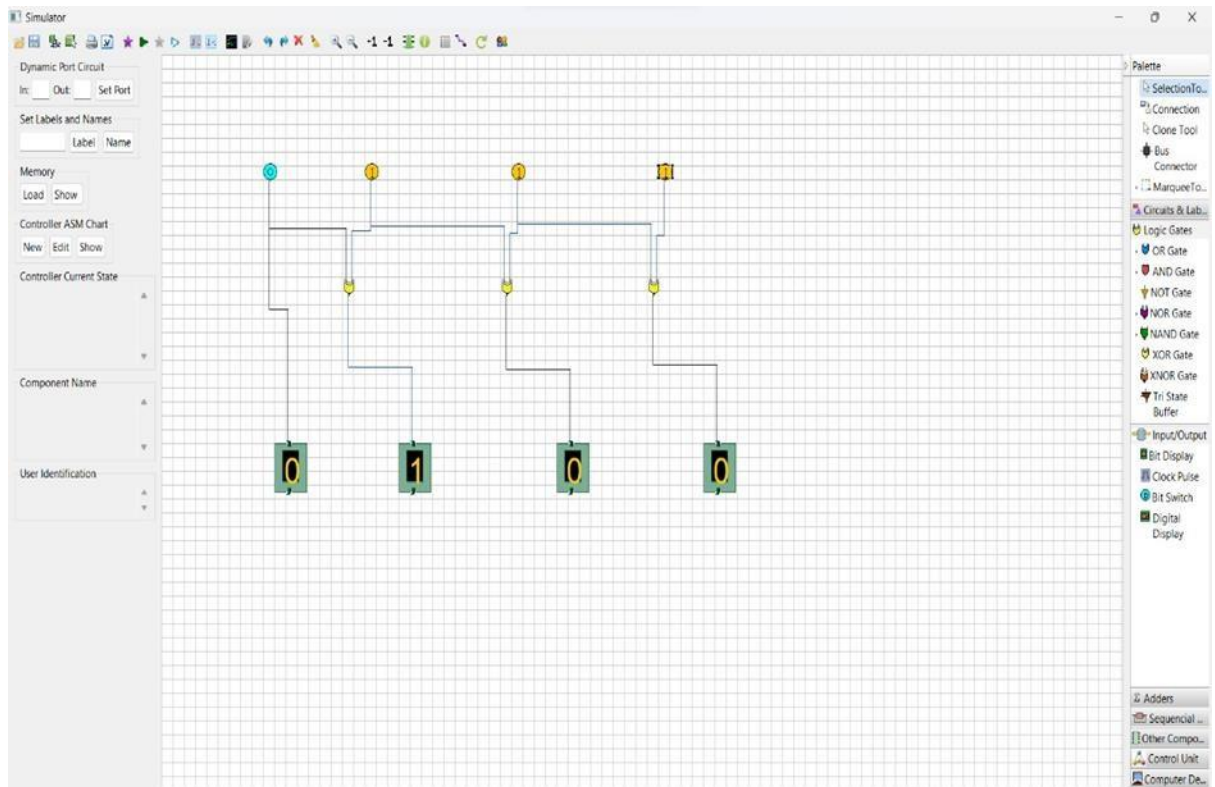
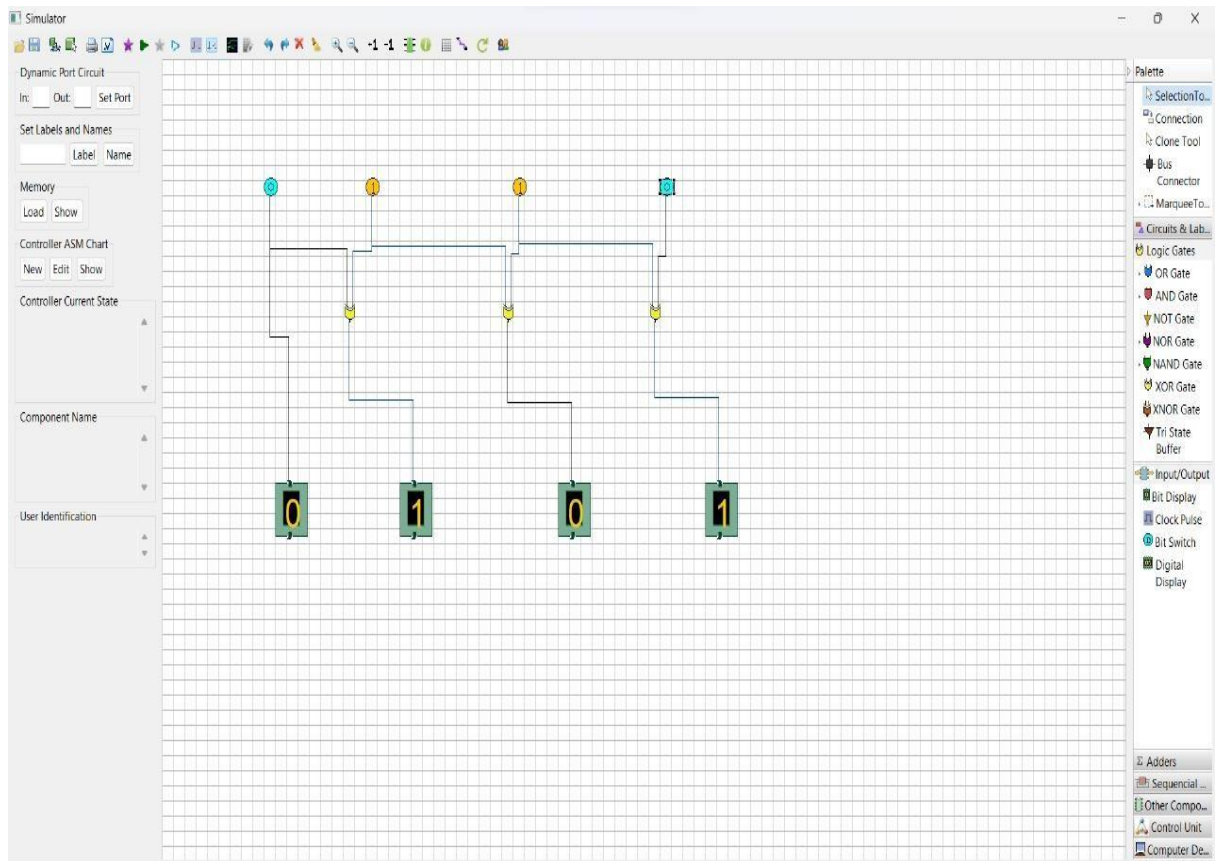
Simulator implementation



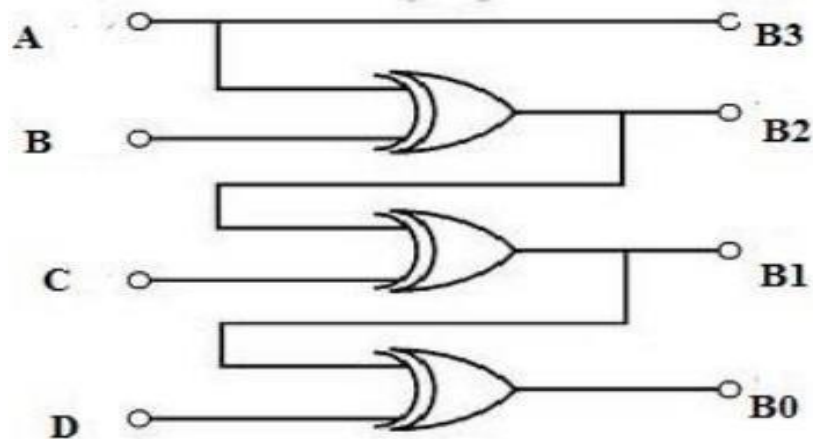








- a) Gray to Binary Code Converter: This gray to binary conversion method also uses the working concept of the EX-OR logic gate among the bits of gray as well as binary bits.



**Circuit Diagram for
Gray to Binary Code
Converter**

INPUTS				OUTPUTS			
A	B	C	D	B ₃	B ₂	B ₁	B ₀
0	0	0	0	0	0	0	0
0	0	0	1	0	0	0	1
0	0	1	1	0	0	1	0
0	0	1	0	0	0	1	1
0	1	1	0	0	1	0	0
0	1	1	1	0	1	0	1
0	1	0	1	0	1	1	0
0	1	0	0	0	1	1	1
1	1	0	0	1	0	0	0
1	1	0	1	1	0	0	1
1	1	1	1	1	0	1	0
1	1	1	0	1	0	1	1
1	0	1	0	1	1	0	0
1	0	1	1	1	1	0	1
1	0	0	1	1	1	1	0
1	0 _T	0	0	1	1	1	1

Simulator Implementation

