COMPUTER ENGINEERING

DLCA ODD SEM 2021-22/EXPERIMENT 6

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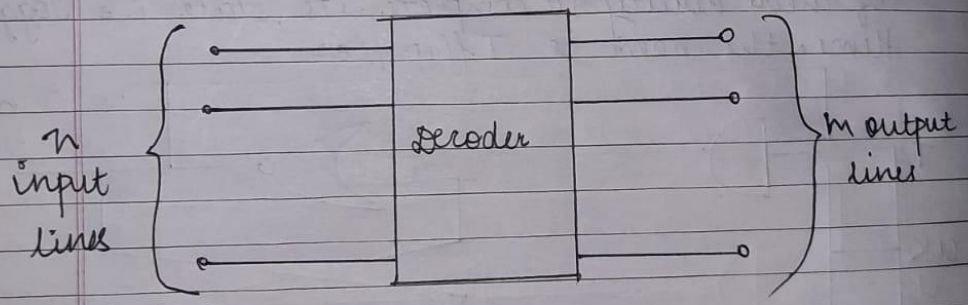
Experiment No:- 06

Aim :- To implement logic operations using decoder IC.

Theory :- The combinational circuit that changes the binary information into 2^n output lines is known as decoders. The binary information is passed in the form of n output lines. The output lines define the 2^n bit code for the binary information. In simple words, the decoder performs the reverse operation of the encoders. At a time, only one input line is activated for simplicity. The produced 2^n bit output code is equivalent to the binary information.

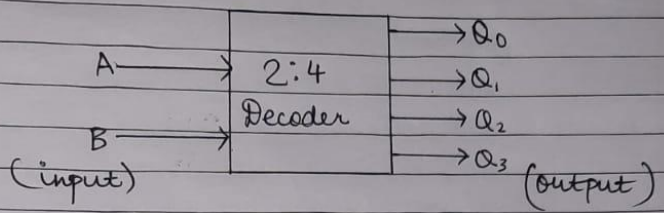


A 2:4 decoder consists of an array of 4 and gates. The two binary inputs labelled A and B are decoded into one of 4 outputs. Hence, the description of 2:4 decoder. Each output represents one of the min terms of two input variables.

The binary inputs A and B determine which output line from Q_0 to Q_3 is 'High' at logic level '1' while the remaining outputs are held

low at logic level '0' so only one output can be active at any one time.

2:4 Decoder :-



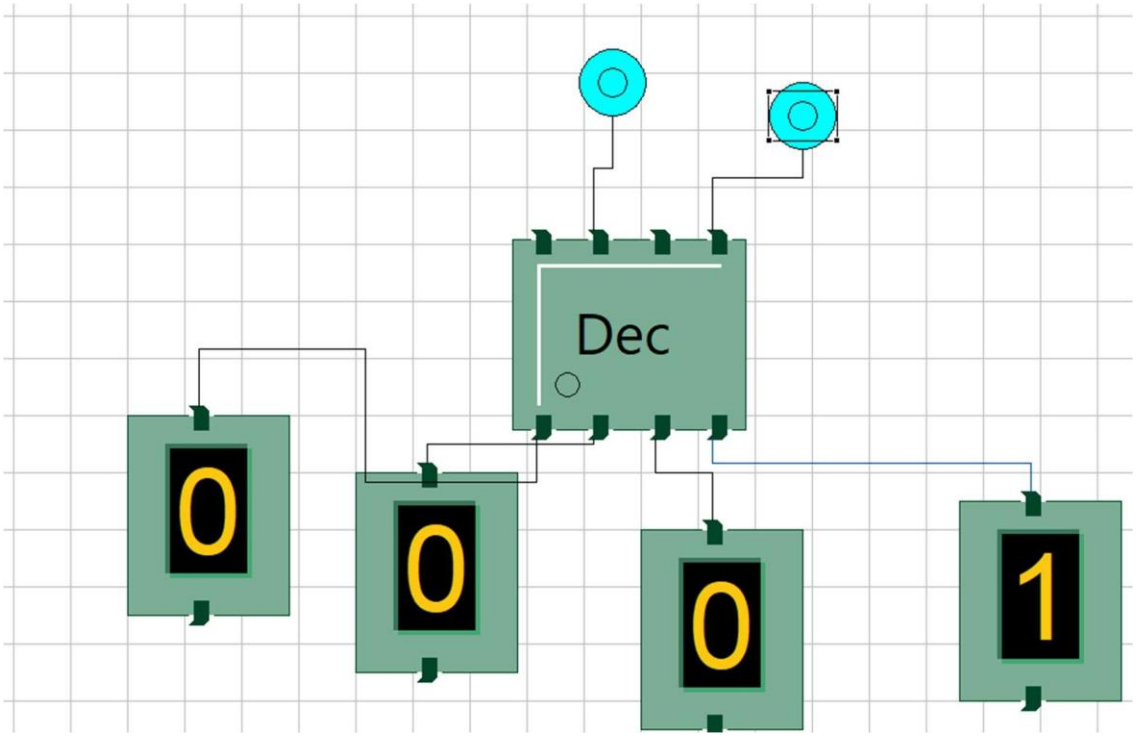
Truth Table :-

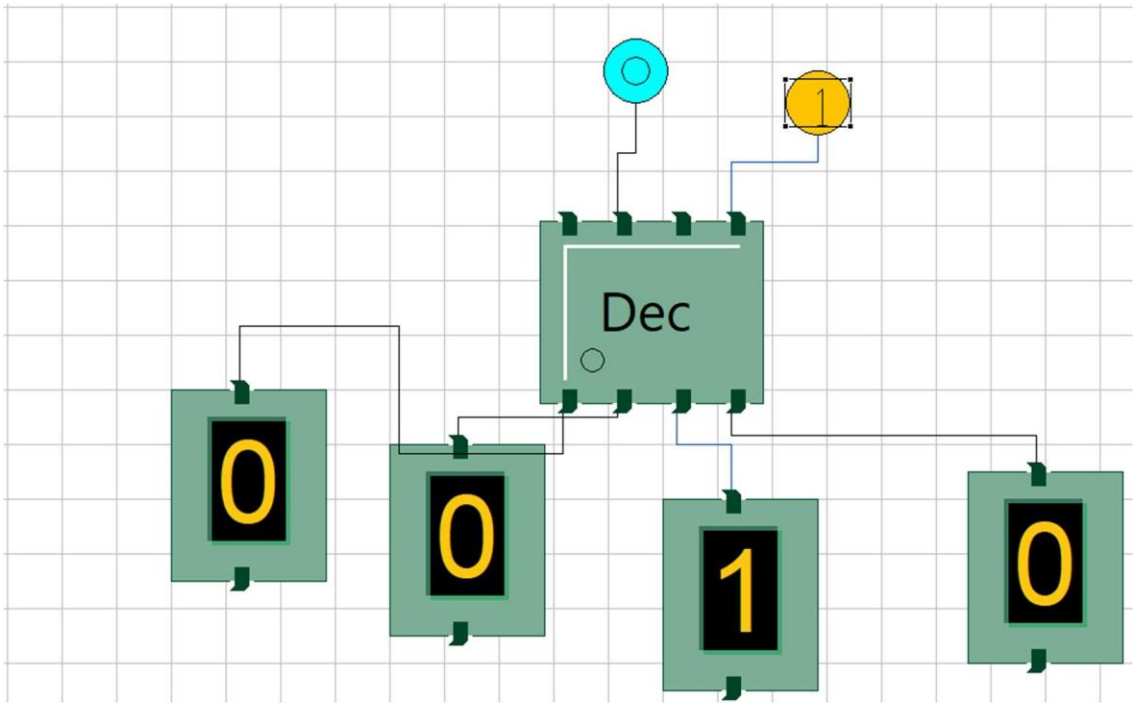
A	B	Q_0	Q_1	Q_2	Q_3
0	0	1	0	0	0
0	1	0	1	0	0
1	0	0	0	1	0
1	1	0	0	0	1

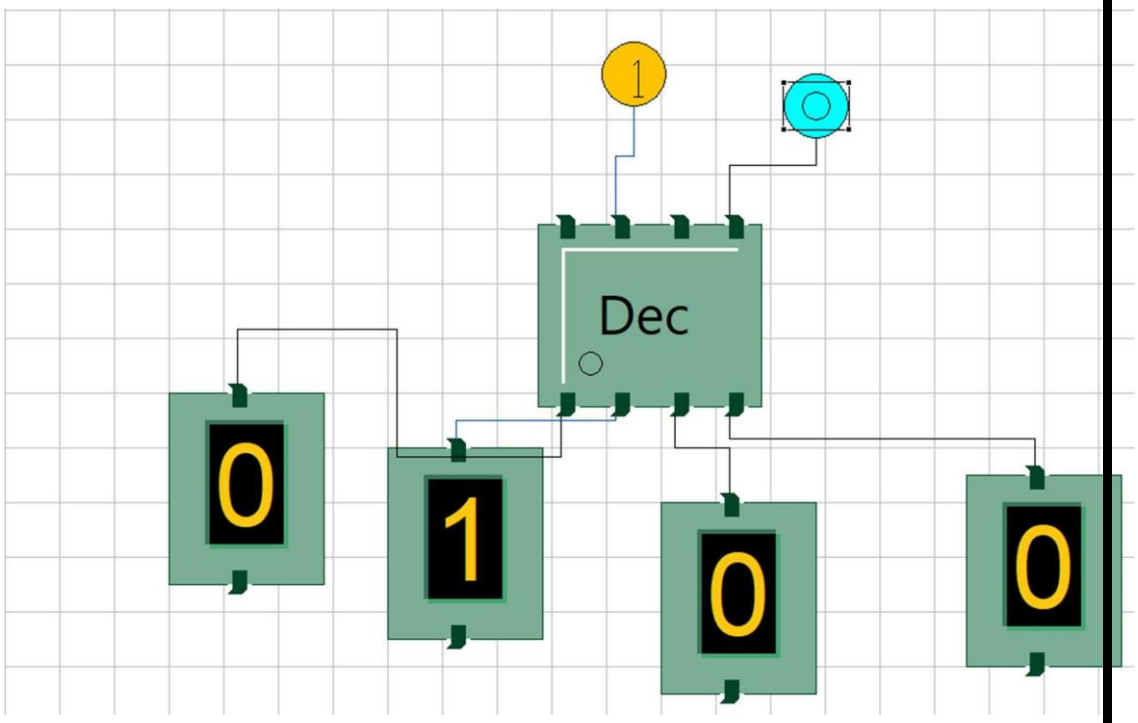
Conclusion :- Hence, the output of the decoder is dependent on whether the enable is high or low. Thus, the experiment implementation of logic operation using 2:4 decoder IC has been successfully performed.

OUPUT:

2:4 Decoder






1
Dec
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1
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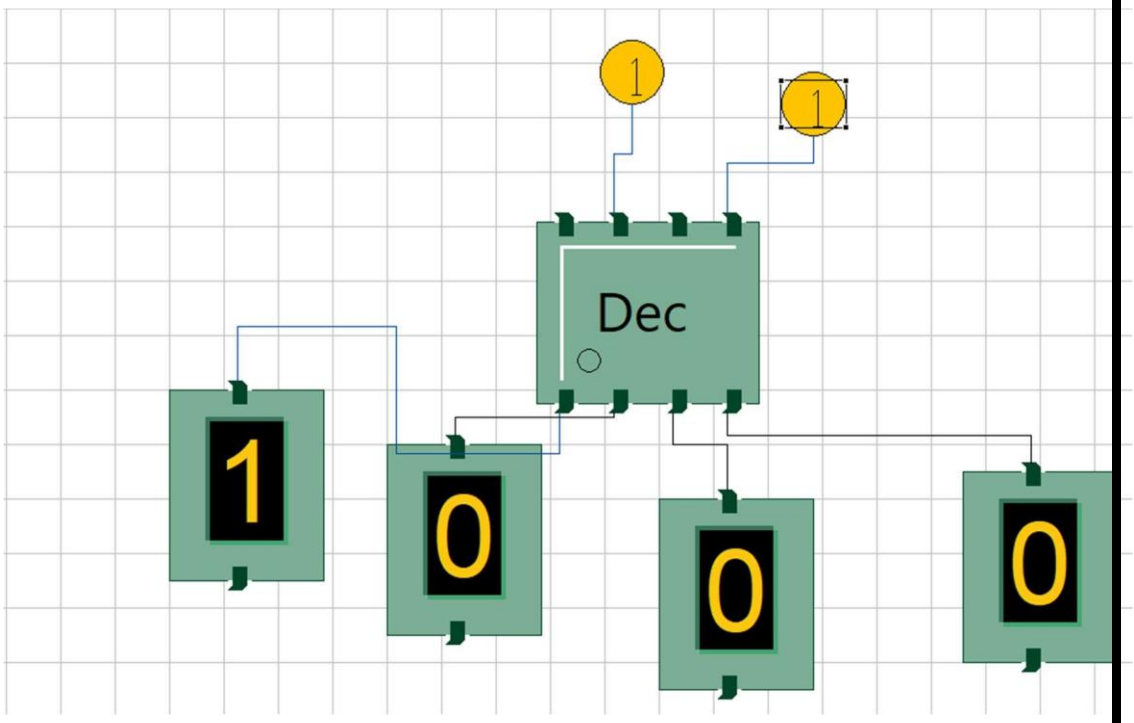
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