"familiarize with three state buffer registers connected to the bus".

Objectives:

i) To know about three state buffer register

ii) To know about registers connected to bus.

iii) To implement 4 bit RTL

iv) To perform different types of operation.

Introduction

In digital electronics three state, tri state, logic allows an output or input to assume a high impedance state, effectively removing the output from the circuit, in addition to the 0 and 1 logic levels, this allows multiple circuits to share the same output line or lines.

Table 1:

1 Truth table normally open.

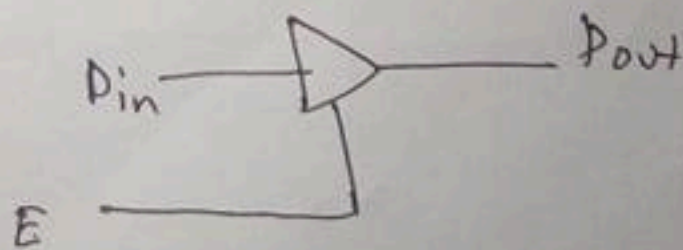| ENABLE	Din	Dout
0	X	Open
1	0	0
1	1	1

fig1: Normally open.

Table 2 : Normally closed

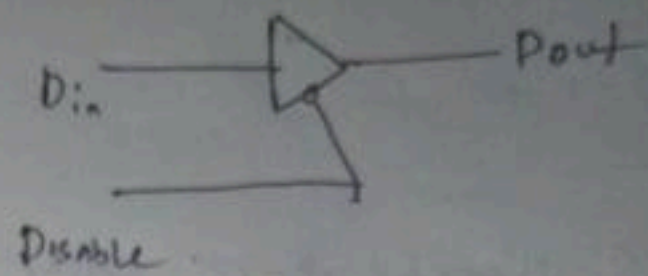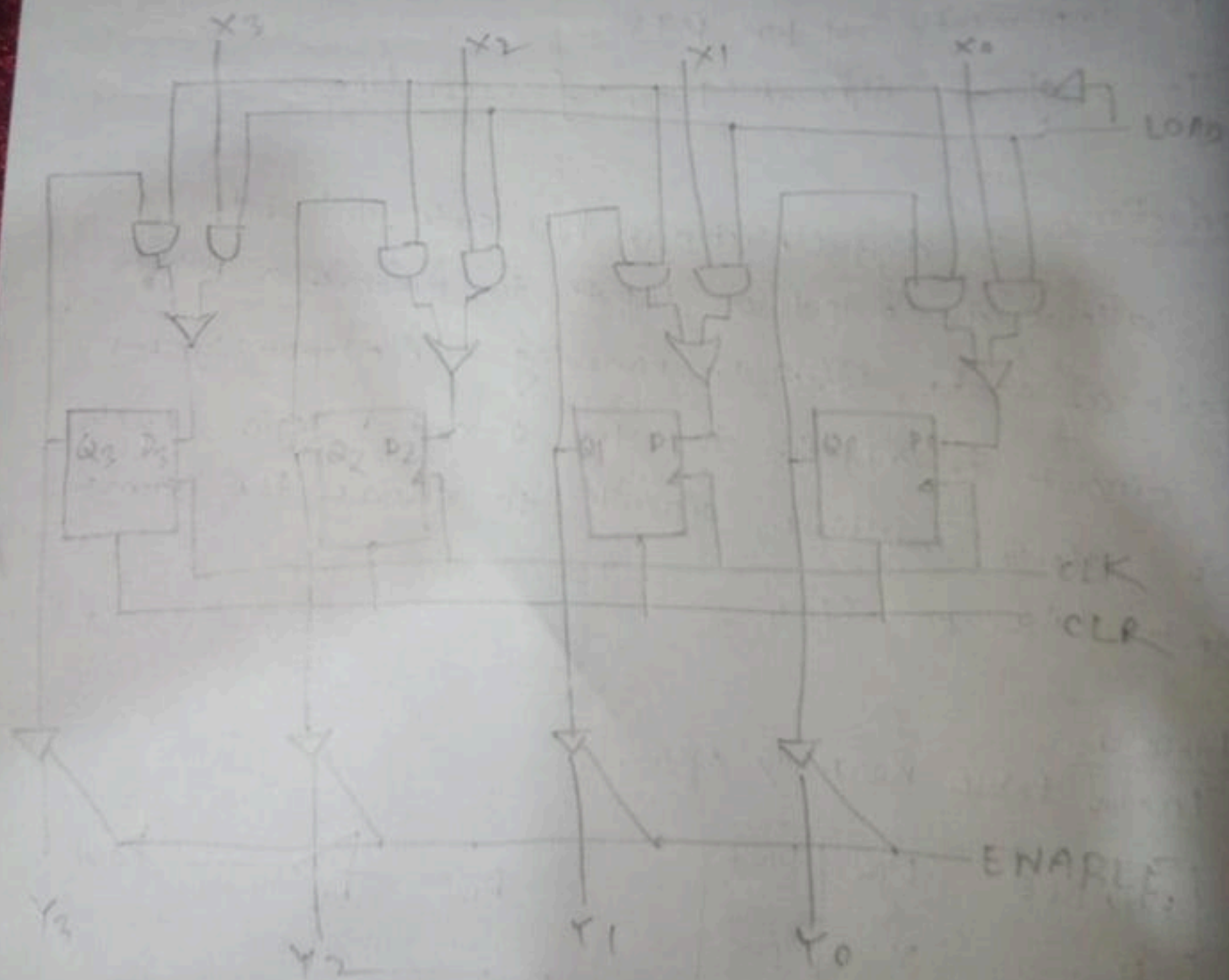| DISABLE	Din	Dout
0	0	0
0	1	1
1	x	Open

fig 2 : normally closed switch.
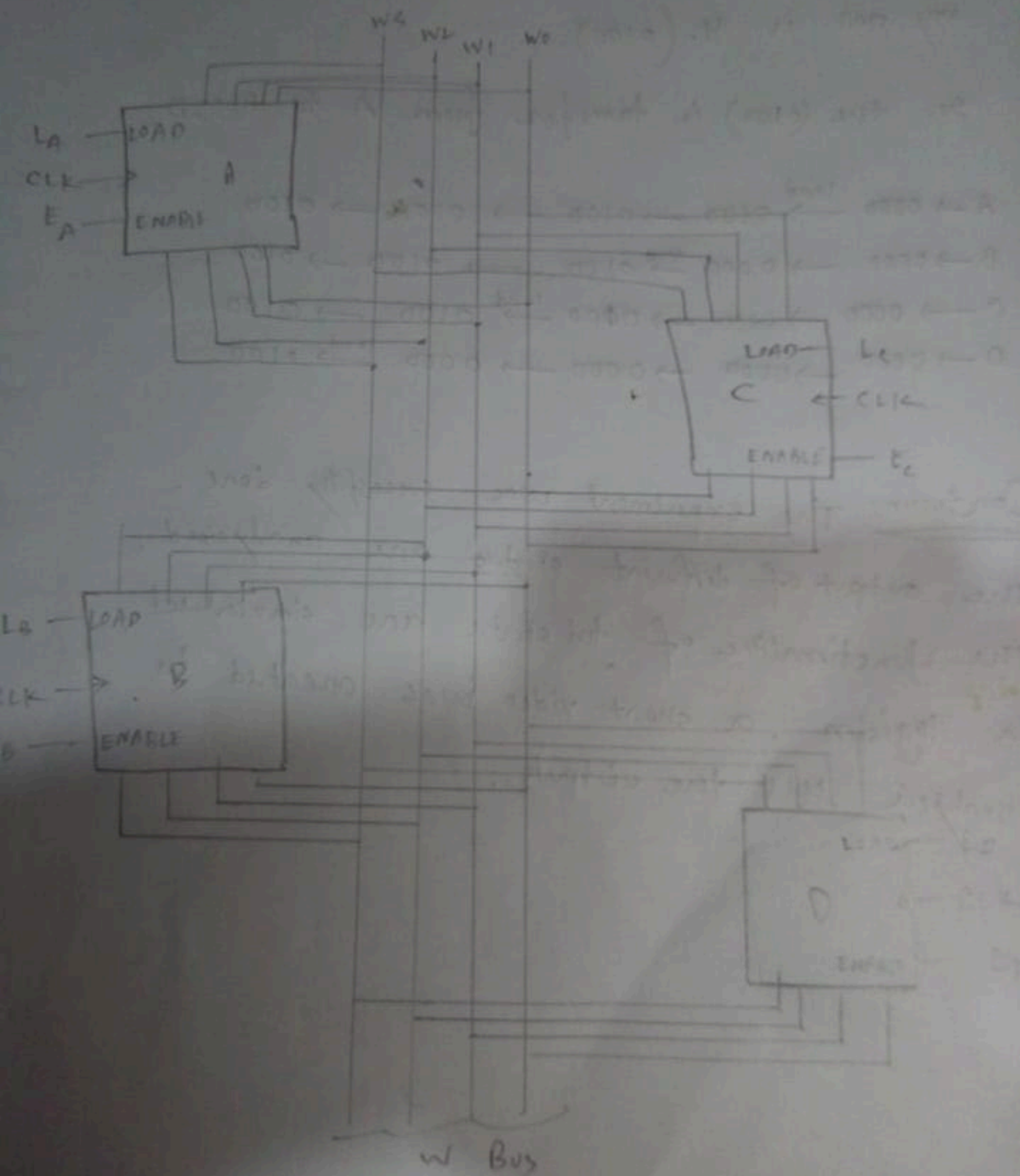

figure 3 : three state buffer register

W4 W2 W1 W0

LA — LOAD
CLK — ▷   A
EA — ENABLE

LOAD — LC
C ← CLK
ENABLE — EC

LB — LOAD
CLK — ▷   B
EB — ENABLE

D

W Bus

Fig 4 : Register connected to Bus.

Discussion

My roll is 1607048. a digit of my roll is 4. (0100).

So, the (0100) is transfer from A to B, C, D.

$$A \rightarrow 0000 \xrightarrow{load} 0100 \rightarrow 0100 \rightarrow 0100 \rightarrow 0100$$

$$B \rightarrow 0000 \rightarrow 0000 \xrightarrow{load} 0100 \rightarrow 0100 \rightarrow 0100$$

$$C \rightarrow 0000 \rightarrow 0000 \rightarrow 0000 \xrightarrow{load} 0100 \rightarrow 0100$$

$$D \rightarrow 0000 \rightarrow 0000 \rightarrow 0000 \rightarrow 0000 \xrightarrow{load} 0100$$

Conclusion:

The experiment was successfilly done. The output of different states are analysised. The functionalitre of tri state are simulated in logisim. a short video was created to visralijre all the outputs..