



INTERNATIONAL INSTITUTE OF  
INFORMATION TECHNOLOGY

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H Y D E R A B A D

## Lab Report-8

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**Course:** Digital Systems and Microcontrollers Lab

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# 1 Binary Cell for RAM

## 1.1 Objective

To implement and verify the operation of a Binary cell for RAM based on RS flipflop.

## 1.2 Equipment Required

1. Digital Test Kit
2. IC 7404 (NOT gate)
3. IC 74HC11 (AND gate)
4. IC CD4011 (NAND gate)
5. Connecting Wires

## 1.3 Procedure

### 1.3.1 Setup

1. Set the IC's systematically on the board.
2. Start by giving inputs to the 3-Input AND gate
3. Connect the Input, Select and Read/Write function to the and gates while complementing the input for one of the AND gates
4. After that setup an RSFF using CD4011
5. Then connect the output of the RSFF to another 3-Input AND gate along with Read/Write and select input.

### 1.3.2 Testing

1. When Select=0 then the circuit should always give output 0

Input(I)	Read/Write	Previous	Description
0	0	0	Read: no change
0	0	1	Read: no change
1	0	0	Read: no change
1	1	1	Read: no change
0	1	0	Write with input 0: no change
0	1	1	Write with input 0: no change

Table 1: Verification table With select=1

2. The circuit can be verified using this table.

## 1.4 Schematic

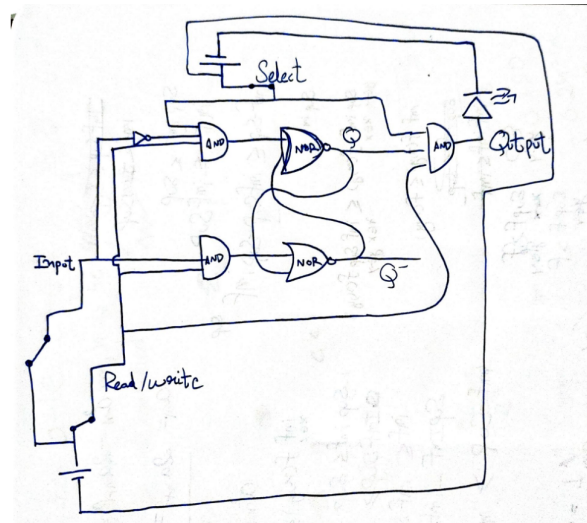


Figure 1: Schematic

## 1.5 Lab Photo

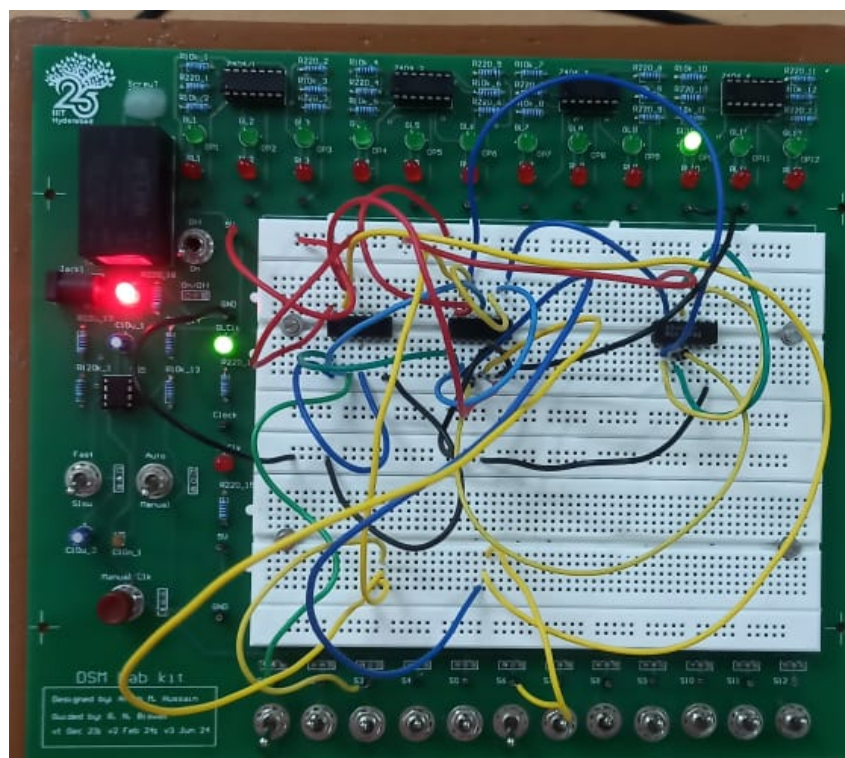


Figure 2: Lab Photo

## 1.6 TinkerCAD

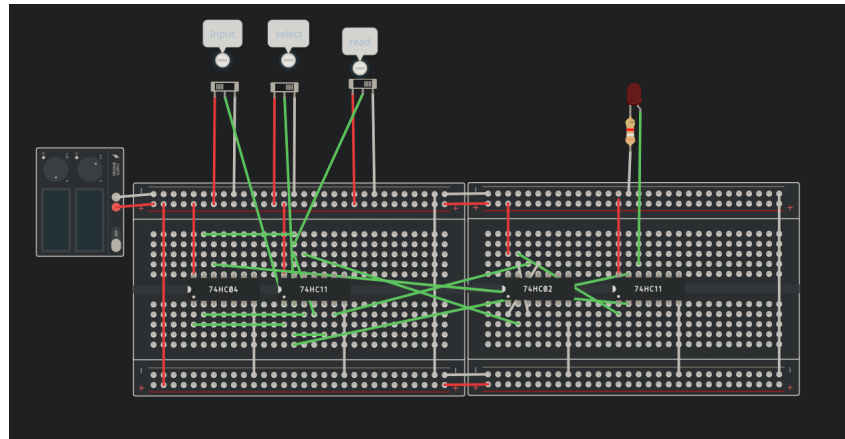


Figure 3: TinkerCAD

## 1.7 Conclusion

We have designed and verified the working of a 1 Bit RAM.