

DIGITAL SYSTEMS AND MICROCONTROLLERS - LAB REPORT 8

6/11/25

Yashaswi Priya
2025114007 GROUP-11 TABLE-7

Experiment 1

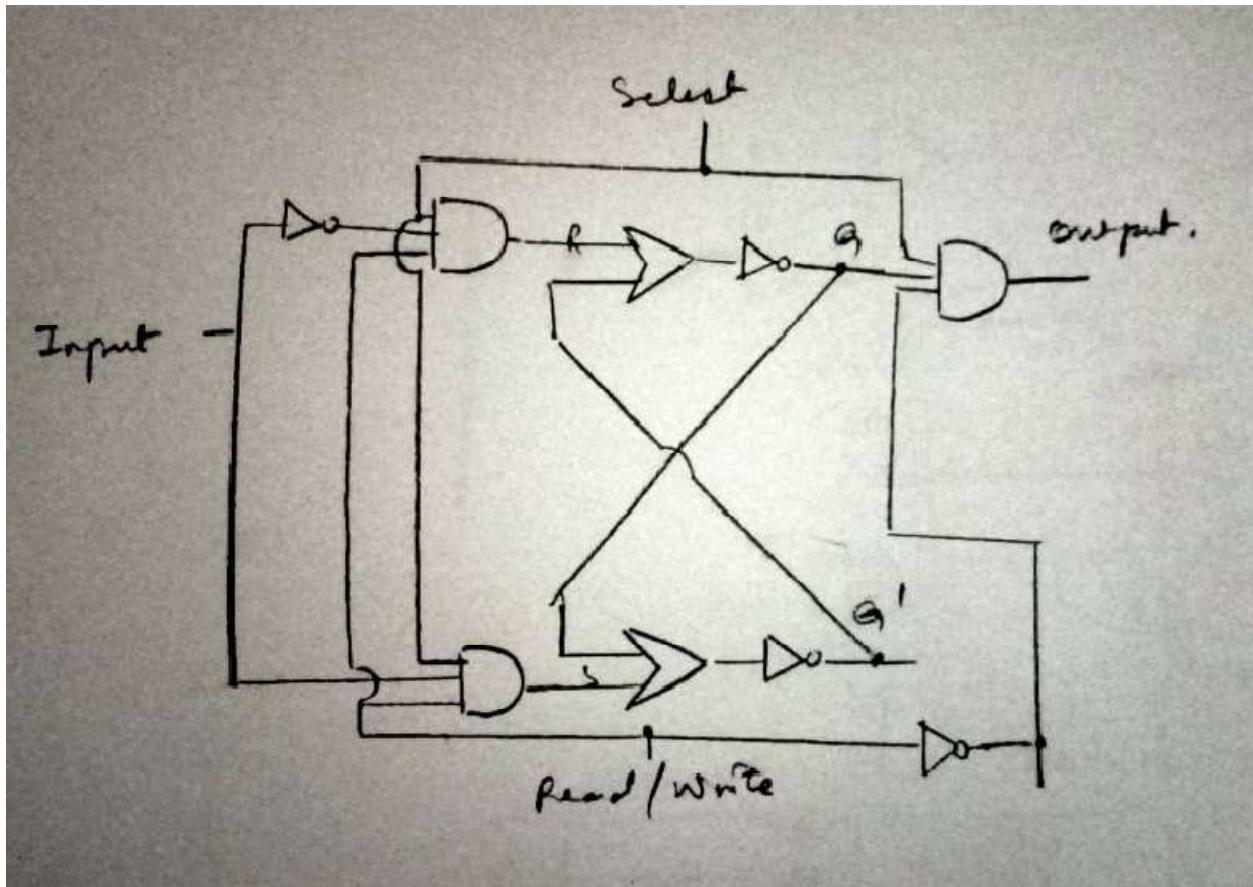
Objective:

To assemble and verify operations of a Binary Cell for RAM based on an RS flip flop.

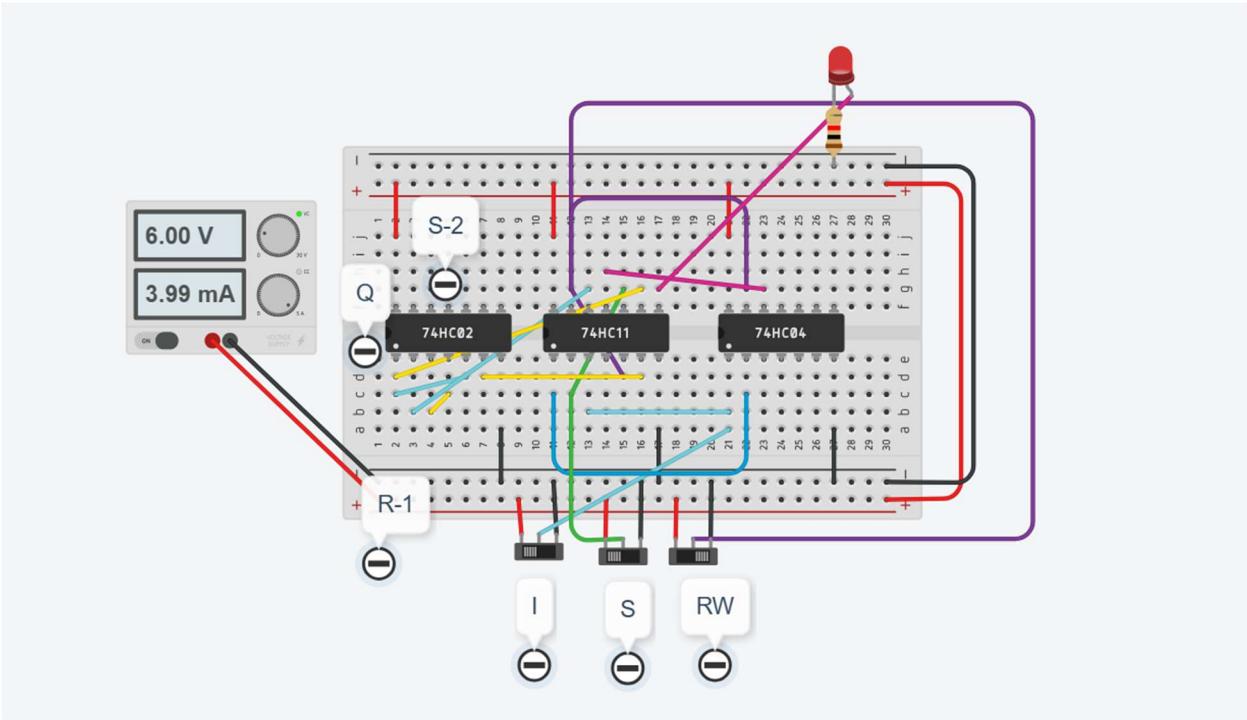
Electronic components used:

1. Digital Test Kit
2. Connecting Wires
3. ICs: 7411, 7404, 7432.

Reference circuit:



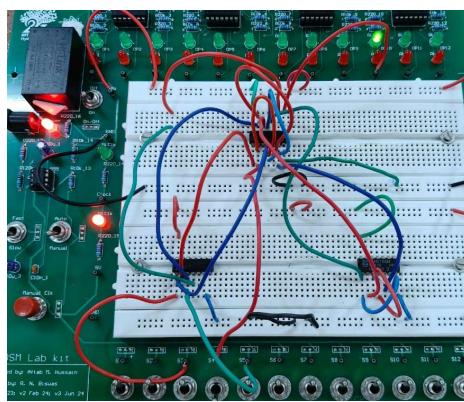
Tinkercad Reference circuit:



Procedure:

1. Connect the VCC (14) and GND (7) pins of the ICs to the VCC and GND lines of the Digital Test Kit respectively.
2. Connect the components as shown above on the Digital Test Kit and note the observations.

Observation:



The select input is used to access the cell, either for reading or writing. For a memory operation to be performed on the cell, the select should be high. If the clock value on the “Read/write” line is low, indicating the cell contents are to be read. In this case, the value output by the cell will depend solely on the **Q** value of the flip-flop.

Thus, if “Input” is high, **S** (set) will receive a high and the flip-flop will store a “1”. If, on the other hand, “Input” is low, then **R** (reset) which receives a negated version of “Input” will go high and the flip-flop will reset to “0”.

Conclusion:

Binary Cell for RAM based on an RS flip flop has been successfully assembled and implemented.

Link to TinkerCAD simulation:

https://www.tinkercad.com/things/1Zc1Km0FBU5-lab8exp1new?sharecode=knAgDilwM3brYsg9Qh9l_t7-nPZDy4lFal-V_1v-QAs