INDIAN INSTITUTE OF INFORMATION TECHNOLOGY VADODARA- INTERNATIONAL CAMPUS DIU

Practical Workbook

Name: Manikanta Mettu

Roll Number: 202211050

Branch: Computer Science and Engineering

Batch: 2022

Subject: CS-268

Session: 2023-24

Certificate

This is to certify that Mr.Manikanta of B. Tech of semester IV Enrolment Number 202211050 Branch Computer Science and Engineering (CSE) has been found satisfactory in the continuous internal evaluation of laboratory, practical and term work in the subject CS268 for the academic year 2023-2024.

Date**: 03-03-2024** Sign of Faculty:

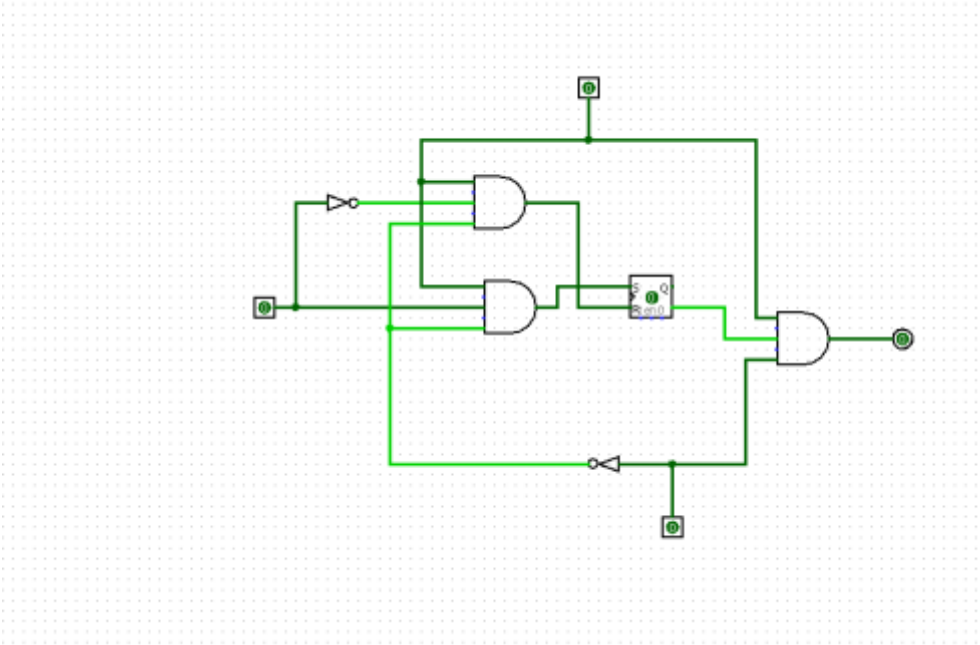
Aim:

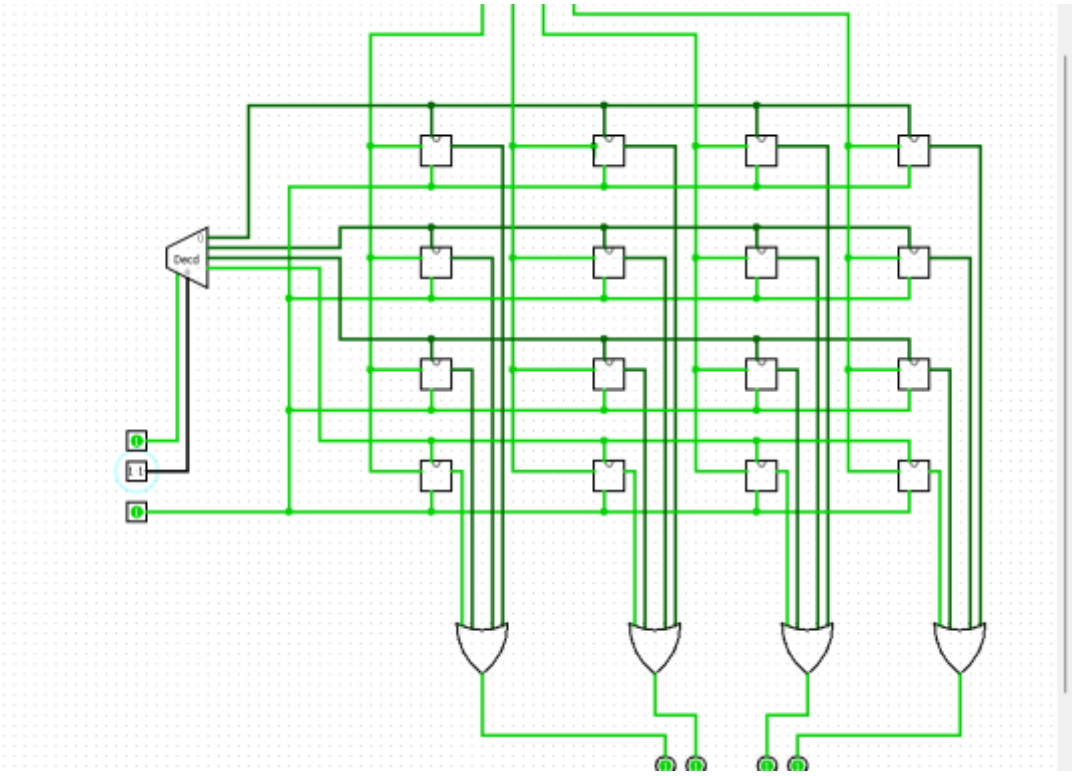
Design and implement a 1kB RAM and ROM memory unit for data storage in a computer system.

Theory:

- RAM (Random Access Memory): A volatile memory unit that allows data to be read from or written to at high speeds. It is used for storing data temporarily during program execution.
- ROM (Read-Only Memory): A non-volatile memory unit that stores data permanently. It is used for storing firmware, boot loaders, and other essential programs that do not change.

Circuit:





Observation:

- RAM allows for fast read and write operations but loses data when power is removed.
- ROM retains data even when power is off but has slower access times compared to RAM.
- Both RAM and ROM are crucial components in computer systems for data storage and program execution.

Result:

- The designed 1kB RAM provides fast access to stored data for temporary usage during program execution.
- The designed 1kB ROM stores essential programs and data permanently for system boot-up and firmware operations.

Conclusion:

- RAM and ROM are essential memory units in computer systems, each serving specific purposes.
- The designed 1kB RAM and ROM units demonstrate the fundamental principles of data storage in computing.
- Understanding the differences between RAM and ROM helps in optimizing system performance and functionality.