## 1. DATE CONVERTER

Design a Verilog application to calculate the day of a week from any given date between the years 1700 to 2300.

2. CUSTOMISED ALARM CLOCK

Design an alarm clock as shown in the following figure. The alarm clock outputs a real-time clock with a 24-hour format and also provides an alarm feature. Users also can set the clock time through switches.

Figure 1: Block Diagram
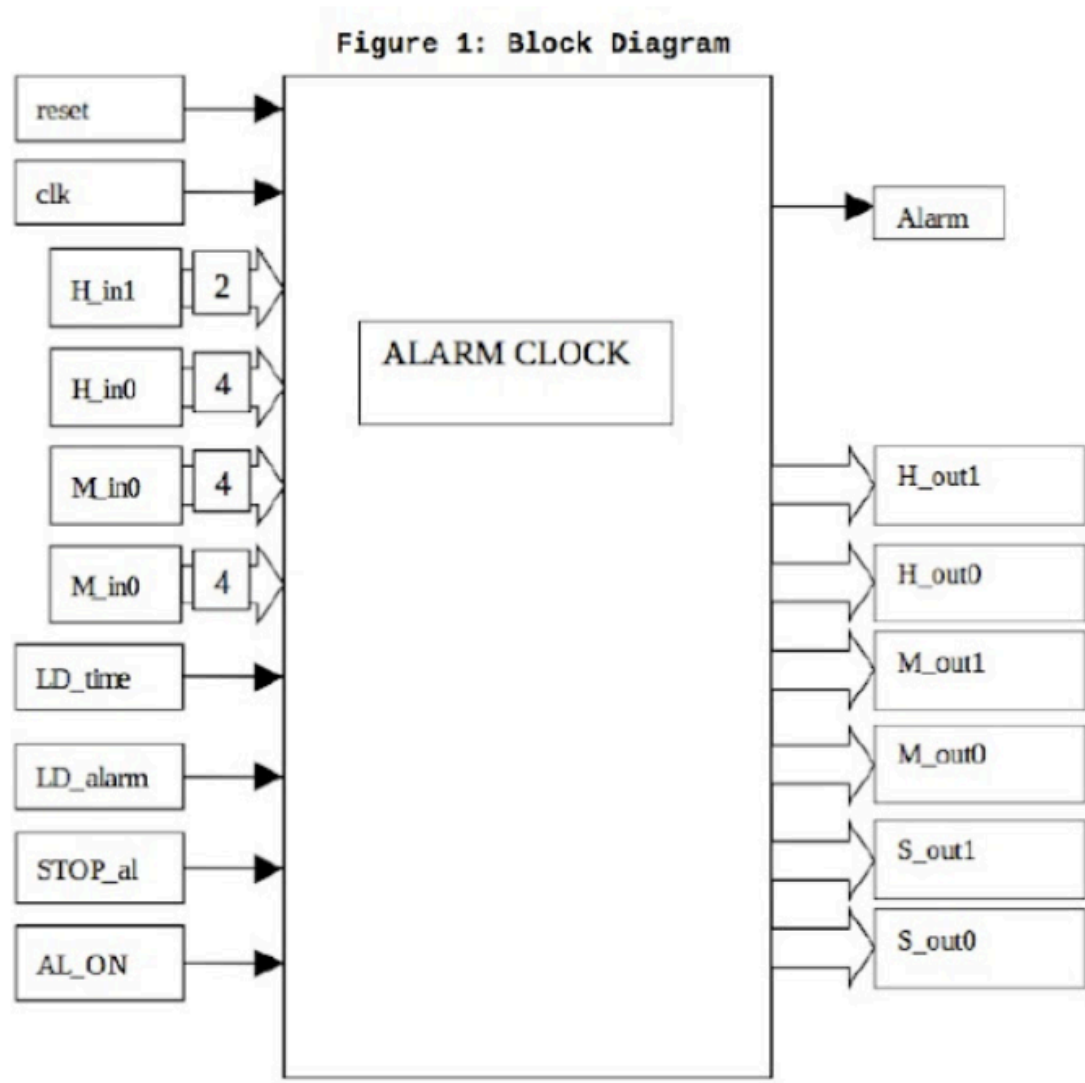
3. TRAFFIC LIGHT CONTROLLER

Design a traffic light controller between farm and highway in verilog. .A sensor on the farm is to detect if there are any vehicles and change the traffic light to allow the vehicles to cross the highway. Otherwise, highway light is always green since it has higher priority than the farm.
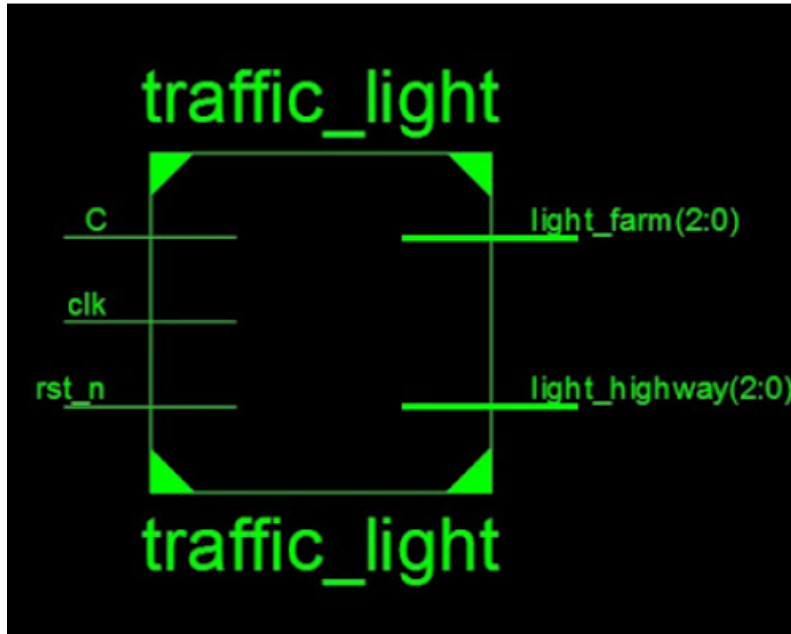
4. TIC-TAC-TOE

Design Tic-Tac-Toe, a 3*3 grid game for two players. The player who makes the first three of their marks in a diagonal, vertical, or horizontal row wins the game.

5. SCIENTIFIC CALCULATOR

Design a basic calculator which takes two single-digit numbers (each is a single-digit decimal base number entered by user)as input and can perform unsigned addition, subtraction, multiplication and division (only quotient) based on user selection and display the output decimal number (two digits) to the user .

6. CAR PARKING SYSTEM

Design a car parking system such that there is a sensor at the entrance gate, which is activated to detect a vehicle coming. Once the sensor is triggered, a password is requested to open the gate. If the entered password is correct, the gate will open to let the vehicle get in. Otherwise, the gate is still locked. If the current car is getting into the car park being detected by the exit sensor and another car comes, the door will be locked and require the coming car to enter passwords.