Lab 6: Electronic Clock

Objective

✓   Implement the display function of the electronic clock.

Prerequisite

✓   Fundamentals of logic gates.
✓   Logic modeling in Verilog HDL.
✓   Simple logic development and FSM control

Experiments

1   Implement an electronic clock with the following functions:
   1.1   Finish the time display function supporting 24-hour (00-23). The time display can show hour:minute and second, and use one push button to switch the display.

   1.2   For the date functions in clock (no leap year), we have the following functions:
      ▪   Day (Jan/March/May/July/Aug/Oct/Dec: 1-31, Feb: 28, Apr/June/Sept/Nov: 30),
      ▪   Month (1-12),
      ▪   Year (00-99).
      Month-Day function can display in the 4 7-segment displays, and use one push button to select the display of Year (2 Seven-Segment Displays, SSDs) or Month-Day (4 SSDs).

   1.3   Support one alarm function.

   1.4   Support a stopwatch function (Use lab5 exp2's codes).

   1.5   Support the setting mode to set the time, date, and alarm.