The Standard Calendar

ENSE-352

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Introduction

The project highlights the functionality of a calendar with addition to a special function. This project was built in VHDL using Vivado. The special function communicates the birth month “June” for me.

Equipment

The following equipment was used to build this project

Equipment	Quantity
FPGA Board Basys 3	1
USB-A to USB micro-B	1
Vivado	Working Computer

Overview

Basys- 3 board consists of 16 LEDs and 16 Switches. The project will use all the LEDs and 3 Switches to build the calendar.

Process

The first 12 LEDs are used for months January to December. The LEDs will shift register and light up one by one with controlled speed on rising clock. It will continue to go in the same pattern until disturbed by a switch. The switch 1 will make it stop as it is only designed to stop the process.

The last LED is used for months that end with 31 days and will only light up when a 31-day month’s LED lights up.

The second last LED is used the months that end with 30 days and will only light up when a 30-day month’s LED lights up.

The leap year comes every 4th year where February will become 29 days month instead of 28. In order to activate the feature; switch 2 is in place for it. As soon as the switch is turned on the 3rd last LED will turn on as soon as the February's LED turns on.

The special feature is associated to the 3rd switch and as soon as it turns on; all 4 lights at the end will turn on. Since my birthday month is "June"; the lights will turn on when the shift register goes to that month.

Schematic