Introduction

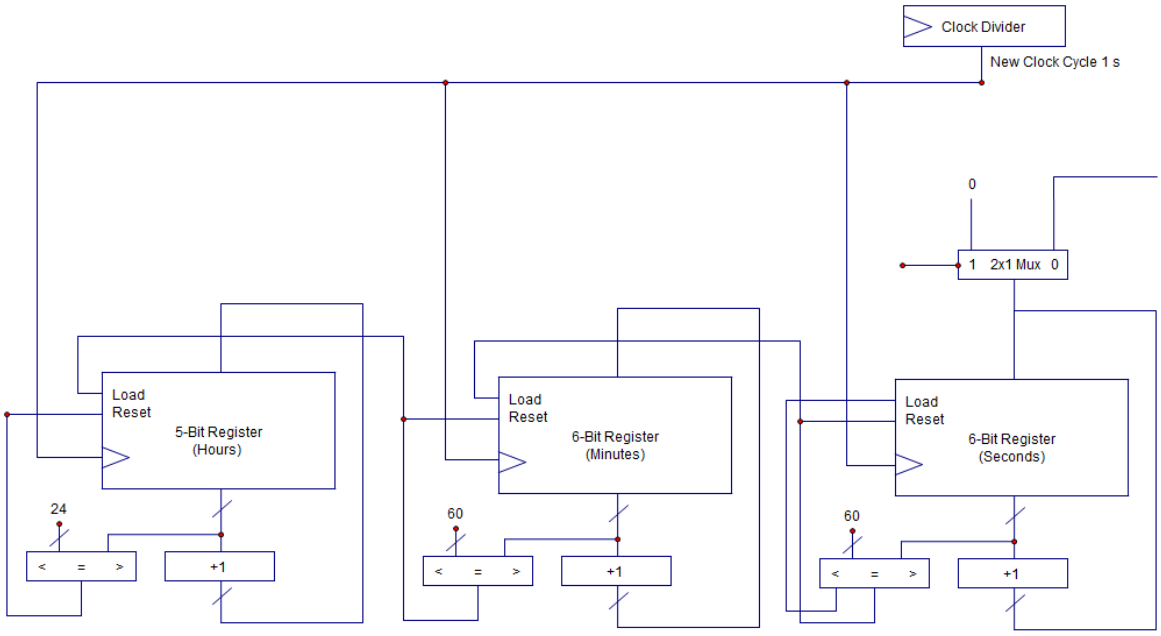
Good multi-function watches are still hard to come by! While many of them incorporate many features into a limited amount of buttons and display space, when you wish to set the time you can only increment. If you go one minute too far when setting your watch for the first time you have to cycle all 60 minutes to correct the problem! And daylight savings time kicks in in the fall, updating the watch is a nuisance! Furthermore, most watches do not account for leap year! I intend to make an intuitive design that gives the operator more control over the behavior of the watch.

Technical Specifications

Input and output on the BASYS board will proceed as follows:

- BTN3 corresponds with the display mode (MM DD, YY YY, HH MM or __ SS?)
- BTN2 corresponds with the set mode (Are you editing or viewing?)
- BTN1 corresponds with increment if you are the “set state”
- BTN0 corresponds with decrement if you are in the “set state”
- LD7-LD1 will show the day of the week; LD0 will indicate the “set state”

These button signals will also be asynchronous so the operator can press them in rapid succession or hold and increment every second. Here is a top-level diagram representing the basic logic behind the watch.



Timeline

There remain only two weeks to complete this project.

During the first I will construct the clock counting functionality and test the displaying of each different set of numbers switching through modes by initializing the clock to preset values that can be displayed. Furthermore I will add a mux that will alternate between the slower 1-second clock cycle when SW0 is off and a faster clock cycle when SW1 is on so that the clock can be observed naturally cycling through all seconds, minutes, hours, days of the week, days and months

During the second week I will implement functionality for the user to update the time and set it to load at an initial time close to the date of manufacture.

Conclusion