Clock display

* Displays HH:MM:SS (either a.m./p.m. OR 24 hour mode)
* Set time functionality
* Set alarm functionality
* Alarm enable/disable; display indicates whether alarm is enabled and alarm time
* Indicator for day/night
* Single button daylight savings/standard time adjustment

Day/night mode

* Set time limits for day/night mode
* Backlight off during day (key to switch on backlight momentarily OR toggle during day mode)
* Backlight on when motion detected during night mode; stays on for reasonable time

Alarm mode

* Backlight comes on until alarm disabled
* Servo motor used to clap against “bell” for alarm
* When alarm active, motion can be used to enable “snooze”
* Button press to turn alarm off

“Extra” possibilities

* Use “blink” LED for some indication
* Use output to Scope for some indication (could even use both channels)
* Speedup mode to make day/night testing easier