

Andrea Smith

EE 2361

Lab 4 Report

Functions

1. `void initServo(void);`

This function uses Peripheral Pin Select (PPS) to attach Output Compare 1 to RP6/RB6 and sets up Timer 3. AD1PCFG setup could have been included here, but I created another `setup()` function that sets initializes it to 0x9fff. `initServo()` takes no arguments.

2. `void setServo(int Val);`

This simple function sets the servo position. It receives the desired value and sets the pulse width by setting OC1RS equal to the input. It takes a single integer argument, `Val`.

3. `void initPushButton(void);`

This function uses PPS to attach Input Capture 1 to RP8/RB8 and sets up Timer 2 to have a maximum period of ~1s to avoid overflows as much as possible. It also configures the IC1 module to capture every rising and falling edge, which is used for button debouncing. `initPushButton()` takes no arguments.

Difficulties

For the first week, the most difficult part was simply remembering each peripheral's functionality and deciding which were needed to set up the needed timer and interrupt. However, during the second week, I spent the most significant amount of time creating the button debouncing method. Even though I could roughly estimate the number of cycles there should be

between proper button presses, it took some trial and error to find a value that worked somewhat consistently, and even so the circuit's functionality sometimes breaks down if it reads less than 3 button presses every time.