Lab7 Part1 Functions

```
//////////////////////
// button_setup
//
// sets up the button inputst - fixed port location
//
// inputs: none
// output: sets button port direction to input
// return: none
//////////////////////
void button_setup(void){
```

```
//////////////////////
// led_setup
//
// sets up the LED output - fixed port location
//
// inputs: none
// output: sets LED port direction to output
// return: none
//////////////////////
void led_setup(void){
```

```
//////////////////////////////////
// check_pin
//
// uses a debounce algorithm to read a pin
//
// inputs: pointer to store pin value, pointer to the pin register, bit mask
// output: modifies the pin value pointer to match pin value 0 or 1
// return: none
//////////////////////////////////
void check_pin(int* pin_val_ptr, const volatile uint8_t* pin_reg, uint8_t pin_mask){
```

```
//////////////////////////////////
//  pin_change
//
// checks to see if the pin has changed
//
// inputs: the current pin value, pointer to old pin value, pointer to pin_changed
variable
// outputs: if the current pin value is different than the old pin value, updates
//          the old pin value pointer and sets the pin_changed pointer value to 1
//          if the current pin value is the same as the old pin value, leaves
//          the old pin value pointer the same and sets the pin_changed pointer value to
0
// return: none
//////////////////////////////////
void pin_change(int pin_val, int* pin_old_ptr, int* pin_changed_ptr){
```

```
//////////////////////////////
// update_count
//
// updates the count on falling pin changes
//
// inputs: pointer to the count, pin1 value, pin1 changed value, pin2 value, pin2 changed
value
// outputs: increments count pointer if pin1 changed and is currently 0
//          sets the count pointer to 0 if pin2 changed and pin2 is currently 0
// return: none
//////////////////////////////////
void update_count(int* cnt, int pin1_val, int pin1_changed, int pin2_val, int
pin2_changed){
```

```
//////////////////////////
// led_out
//
// shifts a 1 across the LED bar by count amount
//
// inputs: pin register pinter, count
// output: changes LEDs via pin change pointer
// return: none
//////////////////////////
void led_out(volatile uint8_t* pin_reg, int count){
```