Linnæus University

Lab 3

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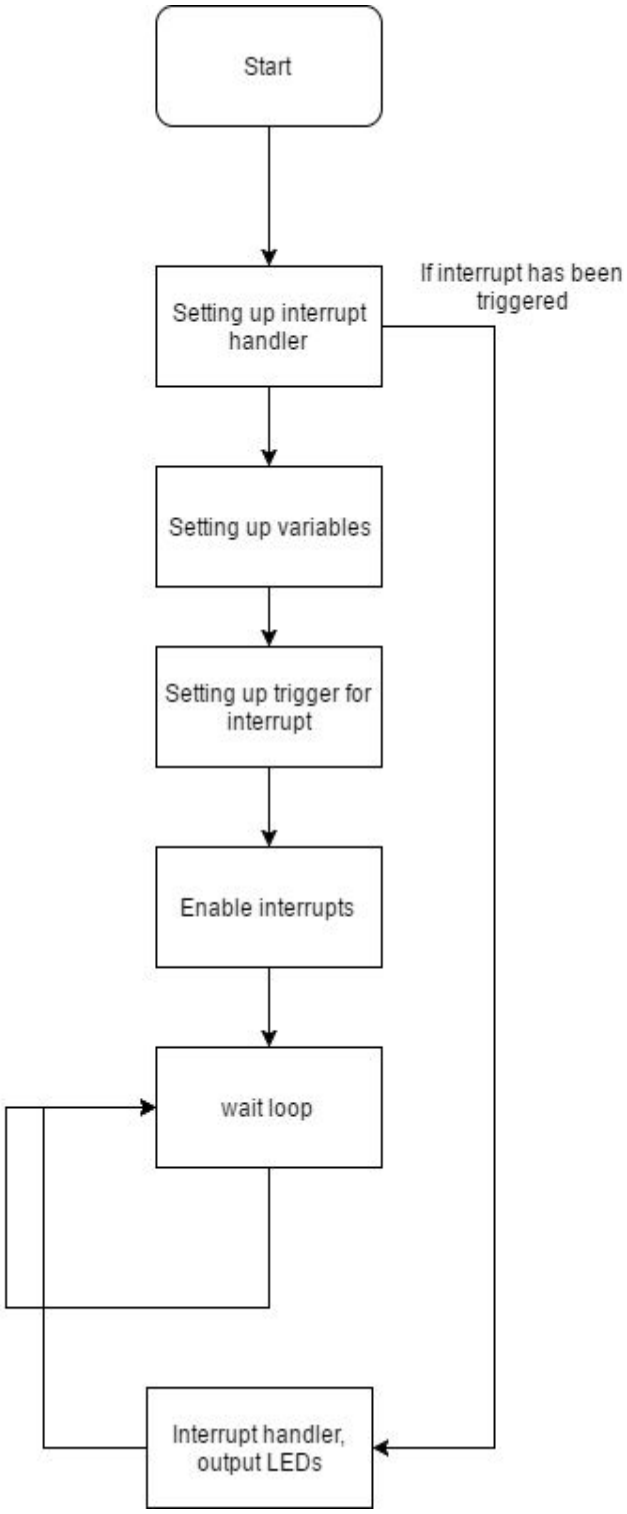
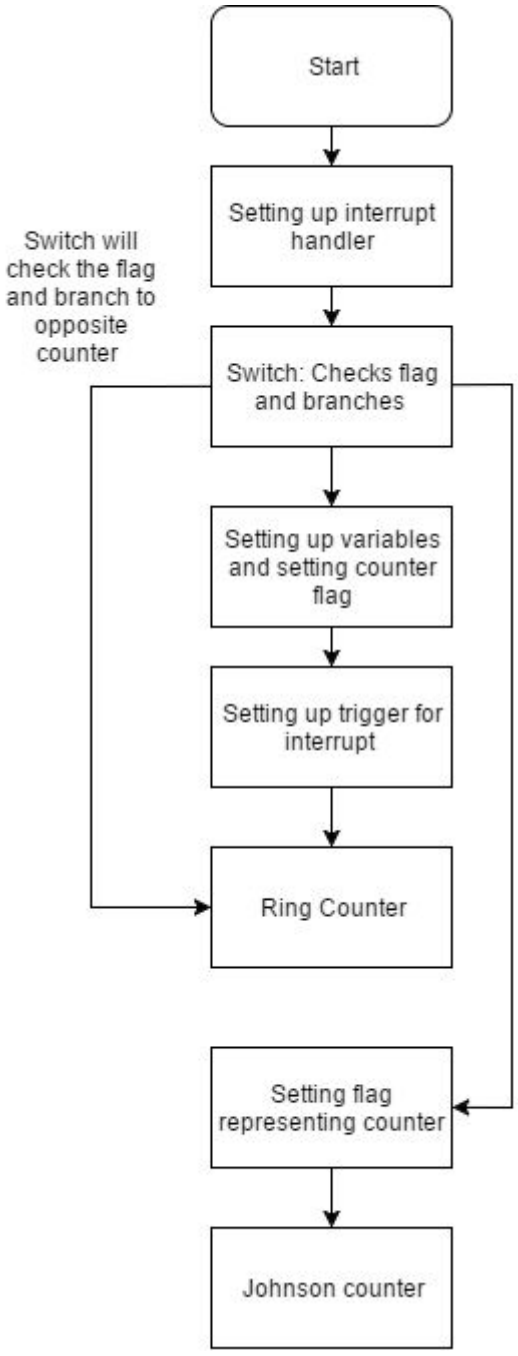
Task 1

Task 1 has a simple wait loop that performs no operations and a subroutine that handles the interrupt triggered by the switch press. If the switch is pressed the interrupt will break out of the wait loop and jump to the interrupt handler to output to the LEDs



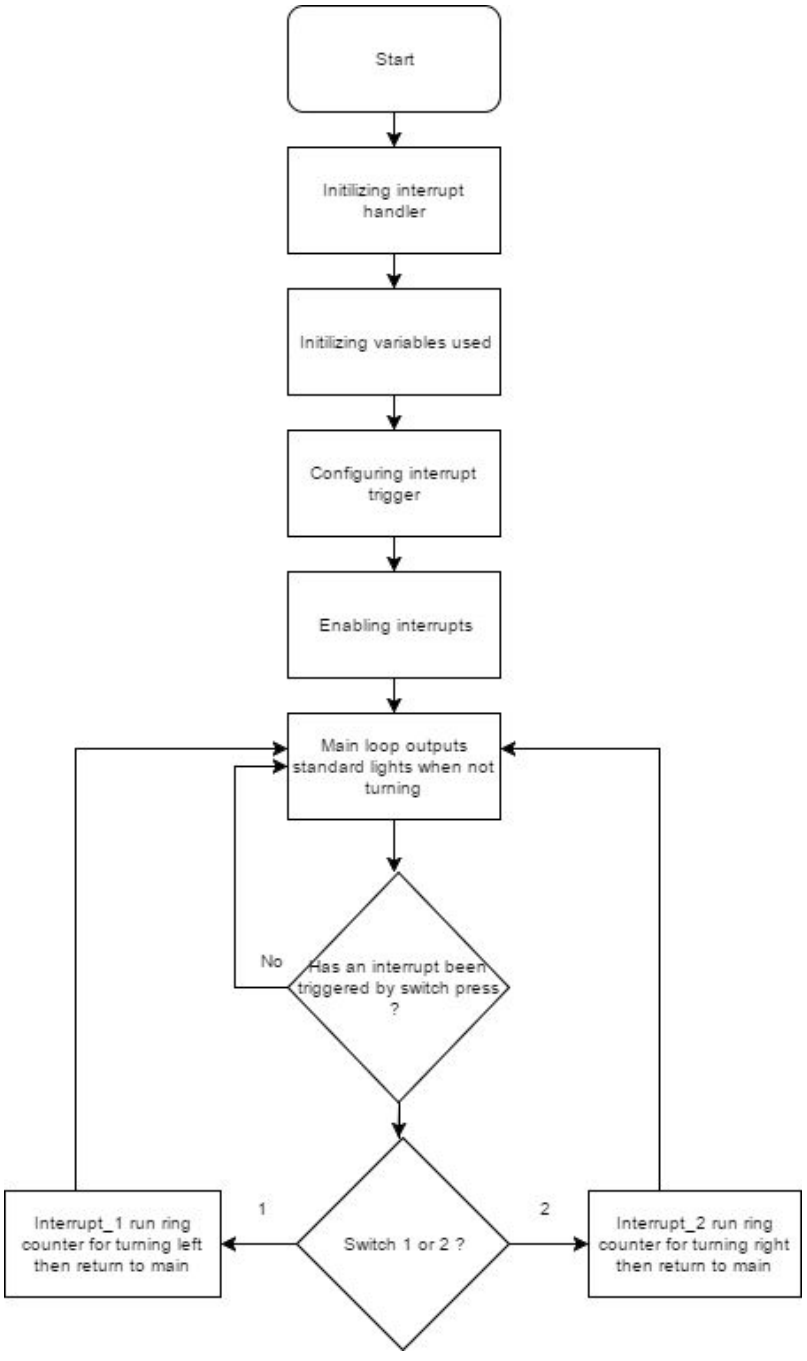
Task 2

2 big subroutines were made to encompass each of the counters. A flag was placed at the start of the respective subroutine to identify which counter was currently being displayed. When the interrupt is triggered the flag is checked and then the opposite counter will be jumped to



Task 3

The main loop outputs the standard lights continuously. There are two interrupts triggered by their respective switches. When the switch is pressed the interrupt will be handled by outputing the ring counter in the direction respective of the interrupt then returning back to the main loop.



Task 4

Task 4 builds on top of task 3 and has directional flags which are given during turning either left or right. These flags are checked in the display subroutine if also the breaking button has been pressed. The direction subroutine then decides based on the flags which subroutine to call either breakright or breakleft.