A screenshot of a computer program

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A computer with a device connected to it

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A screenshot of a computer

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Using the debugger it seems like the function goes into the for loop 1 time too many

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So for power of 2 it should only go into the loop once however because I starts at 1 it goes into the loop 2 times which results in it cubing the number instead of squaring. An easy solution would be to remove the <= and making it a <. This fixes this issues. However there is also the issue with negative numbers, this happens because of the usage of int8 which can only reach a maximum value of 128. To fix this a larger data type could be used like uint16 or int16.

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This code results in

A screenshot of a computer screen

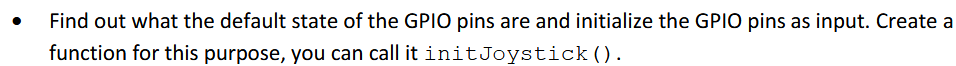
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Which is now correct



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Since we pull the input down its default value is 0 and the code for initializing is shown below

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A white paper with black text

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Use the same code from the joystick and now made some for the LED

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A screenshot of a computer code

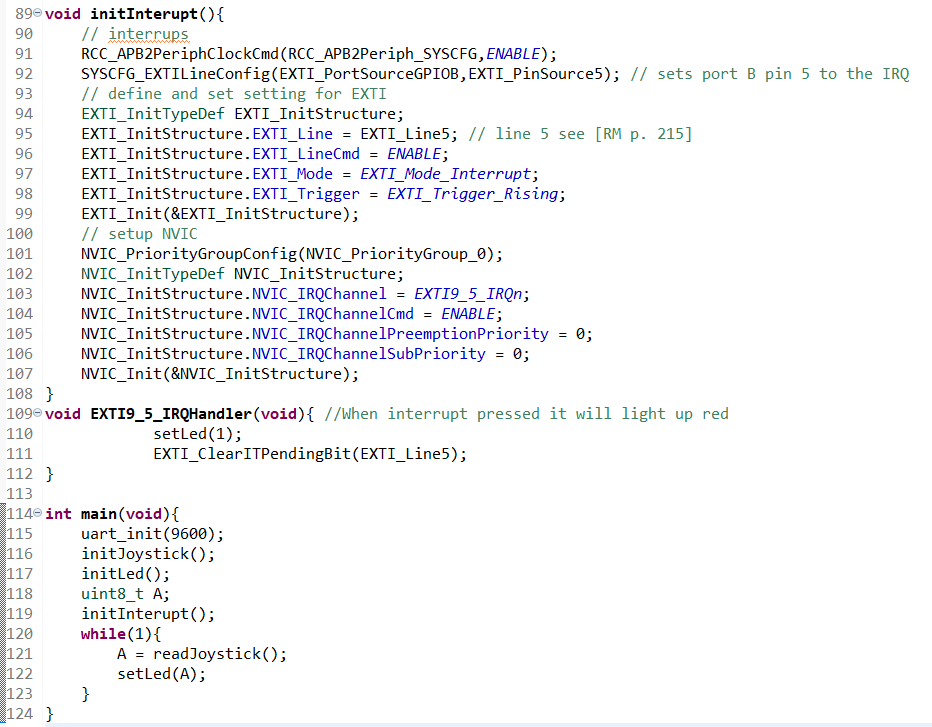
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A screen shot of a computer code

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Same program for joystick as last time



Made it so that when the center button is pressed the LED will light up red

|  |  |
| --- | --- |
| initInterupt | Intitializes the interrupt |
| Syntax: | void initInterupt(); |
| Parameters: | void |

This function sets up the interrupt with all the required setups for the pins, the sensitivity, priority, trigger etc.

|  |  |
| --- | --- |
| EXTI9\_5\_IRQHandler | Handles the interrupt |
| Syntax: | void EXTI9\_5\_IRQHandler (); |
| Parameters: | void |

Lights up the LED red when the interrupt button is pressed

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Made it so that the led will blink every 1/100th of a second and then when the center is pressed it will turn off. A close up of text

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A black text with black text

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A screen shot of a computer code

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|  |  |
| --- | --- |
| initTimer | Intitializes the timer |
| Syntax: | void initTimer(); |
| Parameters: | void |

This function sets up the timer with all the required setups for the pins, the prescaler, period, clockdivider, clockmode etc.

|  |  |
| --- | --- |
| EXTI9\_5\_IRQHandler | Handles the interrupt |
| Syntax: | void EXTI9\_5\_IRQHandler(); |
| Parameters: | void |

Turns off the timer when the interrupt button is pressed

|  |  |
| --- | --- |
| TIM2\_IRQHandler | Handles the timer |
| Syntax: | void TIM2\_IRQHandler(); |
| Parameters: | void |

Turns on the LED whenever the timer interrupt is activated



A computer code with numbers and symbols

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A black background with white numbers and symbols

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# Block diagram and flowchart

## Interrupt

A black grid with white text

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A diagram of a computer

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## Timer

A diagram of a program

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A diagram of a program

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