

Embedded C

yay

Basic C Review

- Starting a C file
- Making functions
- Loops
- Conditional Statements

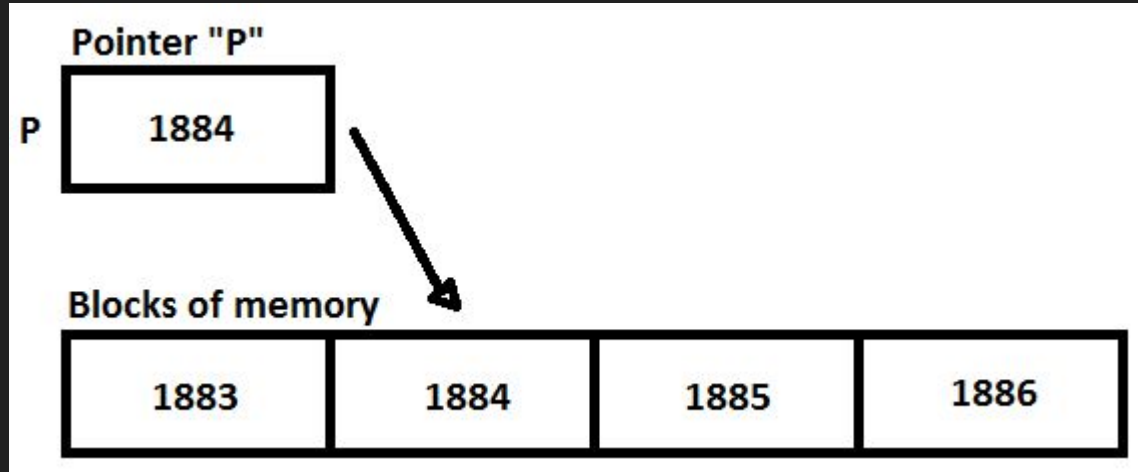
```
#include <stdio.h>

int main(){
    printf("Hello!\n");

    return 0;
}
```

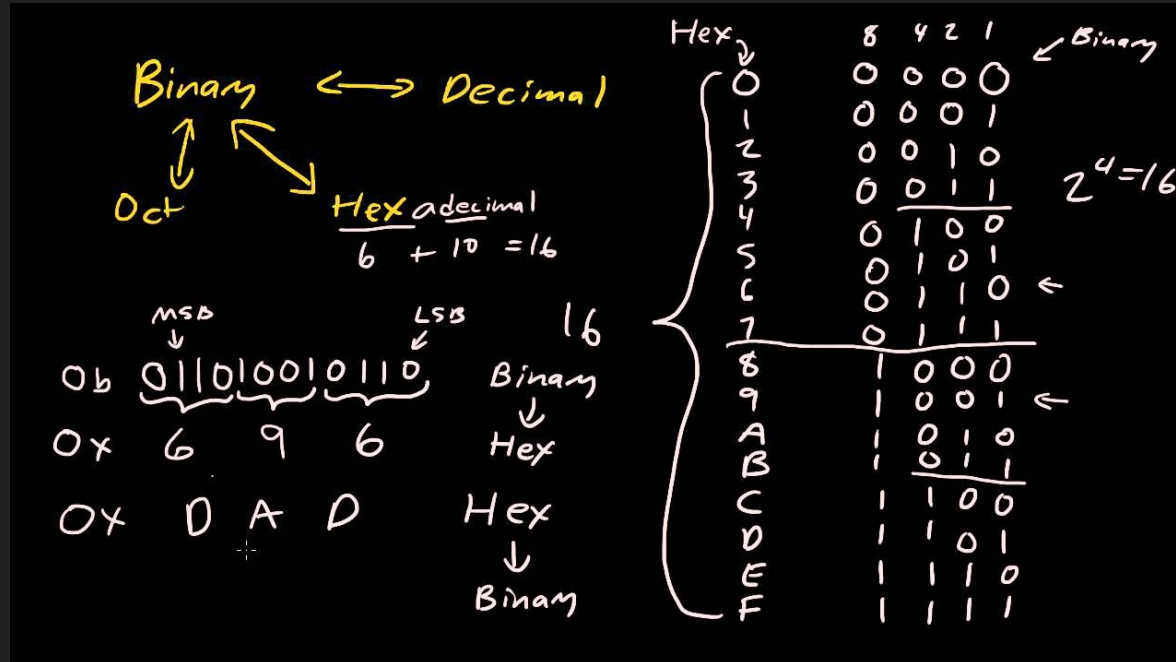
Pointers

- Pass by Reference vs Pass by Value
- Constant size
- Stack vs Heap



Basic Binary Review

- 100110110



Advanced C Review

- Logical Operators
- Bit-Wise Operators
- Macros and Pre-Processor Directives
- Ternary Operator - ?
- Function Pointers
- Structures

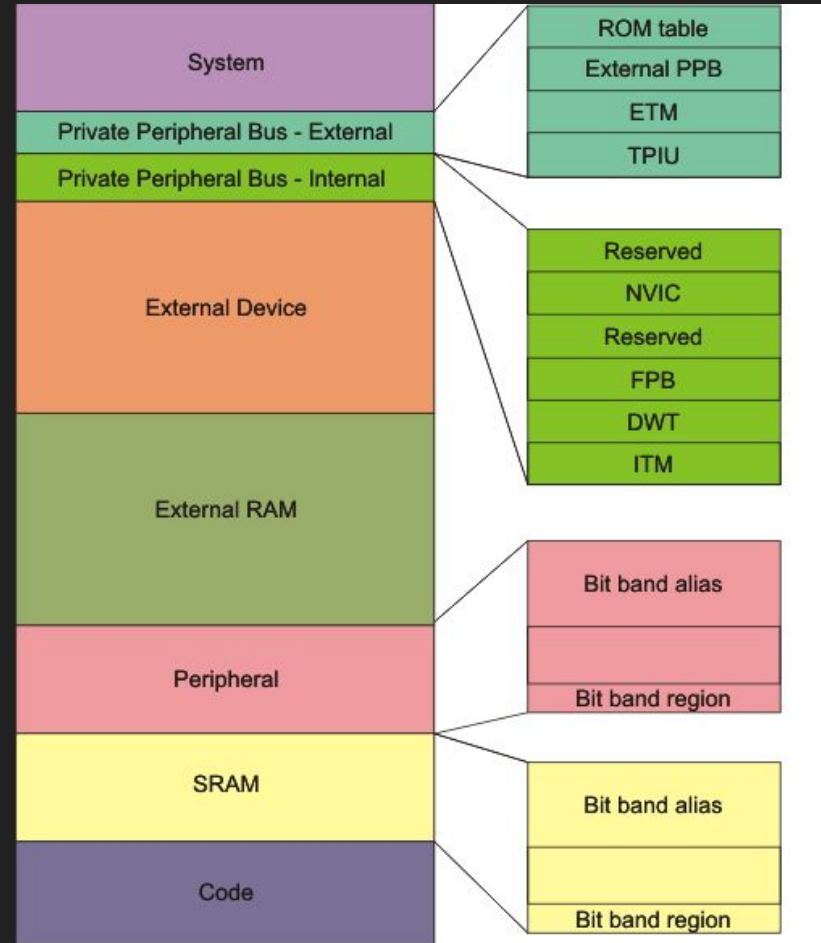
Microcontroller Review

- What is a microcontroller?
 - Processing Code
 - GPIO (General Purpose Input Output)
 - Communication
 - Timers



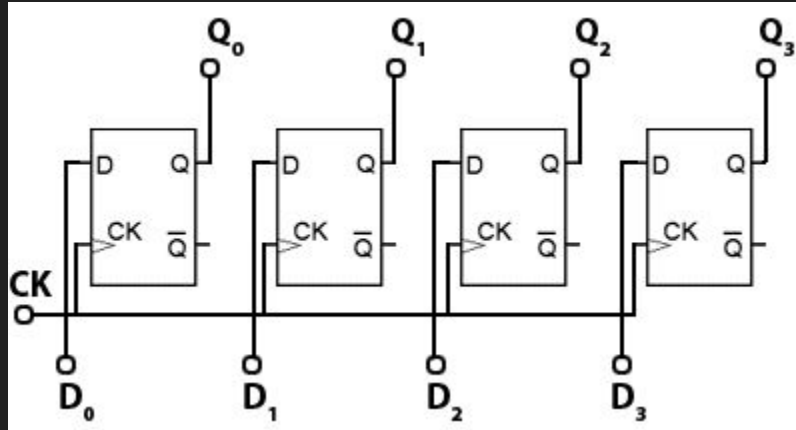
Memory Map

- Different Types of Memory
 - Flash
 - ROM (Read-Only Memory)
 - RAM (Random Access Memory)
- Volatility



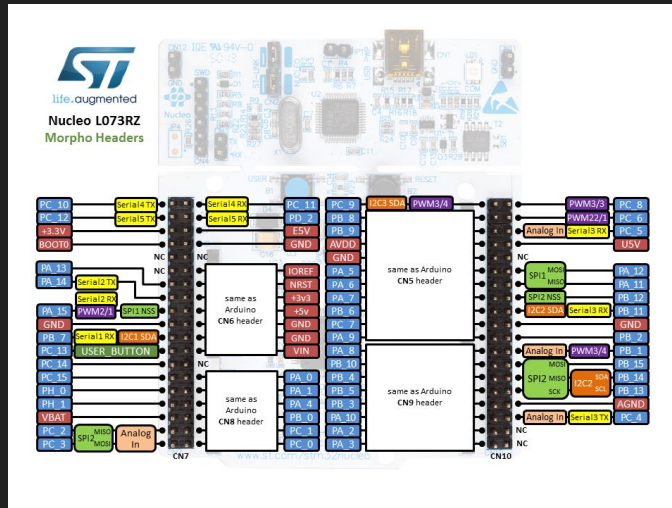
Registers

- Manipulating GPIO and peripheral settings
- `P3DIR |= BIT3`



General Purpose Input Output

- GPIO
- Most pins can be set as this
- Is what is sounds like



Interrupts

- Interrupts vs Polling
- NVIC (Nested Vector Interrupt Controller)
- Types of Interrupts
 - GPIO
 - Timers
 - Communication

Communication

- I2C (Inter-Integrated Circuit)
- SPI (Serial Peripheral Interface)
- USART (Universal Synchronous/Asynchronous Receiver/Transmitter)
- RS232
- PWM (Pulse Width Modulation)