Intro to Programming

C/C++

Sankalp Gupta
moklaeducation@gmail.com

Learning Goals

- Comfort with
  - Basics of C/C++
  - Basics of Computer Science
- Familiarity with IDE
  - Visual Studio Community Edition
- Thinking logically
  - i.e. One step at a time
  - And Visualizing how computer works
- Independence of technology

Why C/C++

- Foundational understanding
  - Understand Computer Science
- Speed and control
  - Fastest programming language
- Really small programming language
  - C has 32 keywords
  - C++ has 92 keywords as of 2023
- Makes you digital native

When NOT C/C++?

- Slower manual speed of writing code
- Don’t care about speed
- Don’t care about deep Computer Science
  - Although this may not be achievable

Bit : Smallest unit of memory

- Bits are used for representing everything
- Have 2 states : 0 and 1 , like a bulb
  - On : 1
  - Off : 0
- Nibble : 4 bits
- Byte : 8 bits
- int (integer) 4 bytes
- char (character) 1 byte

Hertz : Unit of time and speed in Computers

- 1 Hertz : once per second
  - 1 unit of work per clock instruction
- Modern processors
  - Measured in Giga hertz
  - High Core Counts
  - More instructions

Hello World

- Let's go ,
- Program to print "Hello World"

```
#include <iostream>

using namespace std;

int main()
{
    cout << "Hello World";
    return 0;
}
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Print a diamond pattern

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