



High School Programming

Lecture: 01

WELCOME TO









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Agenda

-  Rule and Regulations
-  Course Overview
-  How Computer Works?
-  What is programming? Why need programming?
-  Data and Information
-  What is C# programming and .NET?

Rules and Regulations

📋 We must apply below listed rules and regulation:

- ✓ Be patience and calmness
- ✓ Passion and Dedication
- ✓ Try to be a good and ethical person
- ✓ Discipline and Positivity
- ✓ Build up communication
- ✓ Follow the instructors guidelines and more



Course Overview

📋 What we learn throughout this course:

- ✓ Basic Programming
- ✓ Problem Solving
- ✓ Object Oriented and Advance Programming
- ✓ Database Design and Implementation
- ✓ Real World Based Projects
- ✓ Career Guidelines



How computer works

A computer is an electronic device that receives input, stores or processes the input as per user instructions and provides output in desired format.

■ Here's a high-level overview of following components:

Input: Input units are devices that allow you to enter information into your computer through keyboards, mouse, scanner, cameras and microphones for processing.

Storage: A computer stores documents and files on a hard drive, which is a large magnetic storage device. Smaller devices like digital cameras and cellphones use flash memory cards for storage.

Processing: The central processing unit (CPU) is the brain of the computer, where actual data manipulation or Operations happen using ALU (Arithmetic and Logical Unit).

Output: After processing, the computer provides output through devices like monitors, printers, and speakers.

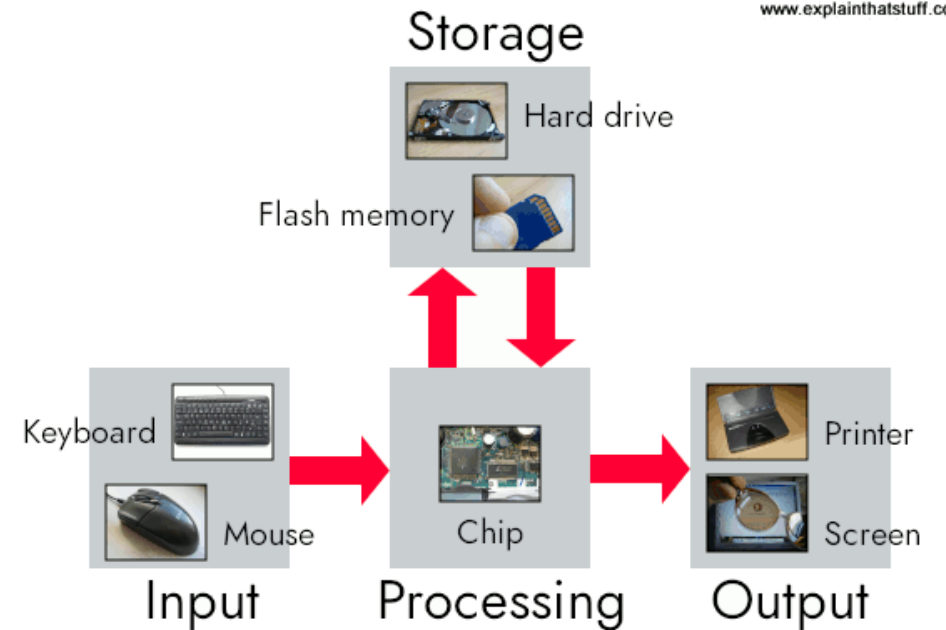


Fig: Computer Architecture

What is Programming

Programming is the process of creating instructions that a computer can understand and execute to perform specific tasks. It's about writing a set of steps, called a program.



Fig: Programming

Why need programming

- ✓ Instructs computer or machines to complete specific actions.
- ✓ Programming tells a machine which actions to perform and how to complete tasks.
- ✓ It main building blocks to build any applications or software.
- ✓ Enjoying with computers
- ✓ Job opportunity in tech sectors



Fig: Why?

Types of programming language

A Programming Language or Computer Language is a language that comprises a set of instructions that is used to communicate with the computer.

Here are the types of Programming Language:

- **Low-level programming language:** Low-Level Programming Languages are languages that the system can easily understand. These are system-dependent languages.
Examples: Machine Language and Assembly Language
- **High-level programming language:** The High-Level Programming Languages are syntactically similar to English and easy to understand. It is a user-dependent language. A High-Level Programming Language combines alphabets, digits, and symbols.
Examples: C, C++, VC++, JAVA, C#, Swift, Objective C, D-Language.

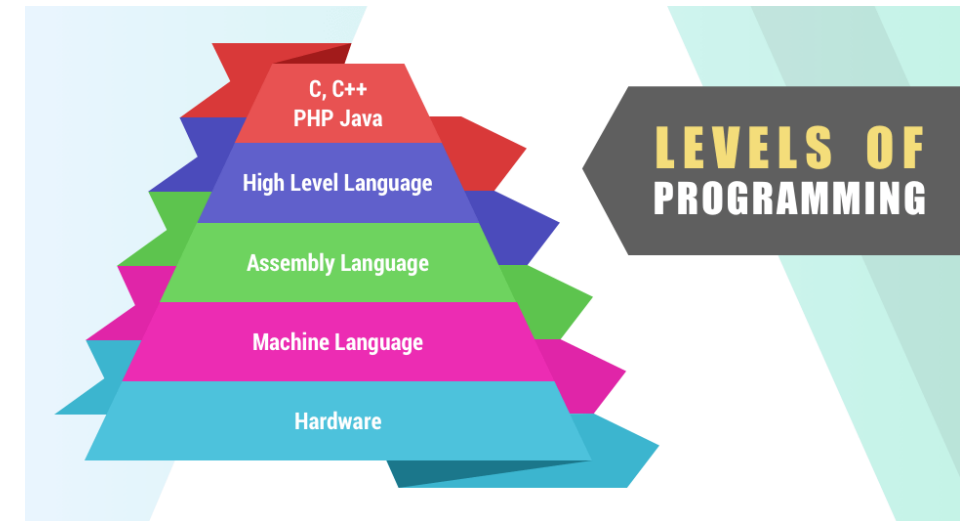


Fig: Types of Computer Language

Data and Information

- ✓ **Data** is an individual unit that contains raw materials which do not carry any specific meaning. For examples numbers, dates, and text strings. Data doesn't depend on information.
- ✓ **Information** is a group of data that collectively carries a logical meaning. Information depends on data. For example it gives context and meaning to these data points, explaining what happened on that specific date.



Fig: Data processing

What is .NET

.NET is a software framework created by Microsoft that provides a large library of pre-built code and tools for developing and running applications. It includes a runtime environment called the Common Language Runtime (CLR) that manages the execution of code written in languages like C#.

☰ Different types of .NET :

- ✓ **.NET Framework:** .NET Framework is the original implementation of .NET. It supports running websites, services, desktop applications, and more on Windows OS Only.
- ✓ **.NET:** .NET is a cross-platform implementation for running websites, services, and console applications on Windows, Linux, and macOS. [.NET is open source](#) on GitHub and .NET was previously called **.NET Core**.
- ✓ **Xamarin/Mono:** Xamarin/Mono is a .NET implementation for running apps on all the major mobile operating systems, including iOS and Android.



Fig: .NET

C# Programming

C# (C-Sharp) is a programming language developed by Microsoft that runs on the .NET Framework. C# is used to develop web apps, desktop apps, mobile apps, games and much more.

💡 Example:

```
using System;

namespace HelloWorld
{
    class Program
    {
        static void Main(string[] args)
        {
            Console.WriteLine("Hello World!");
            Console.WriteLine("Hurray!, Our programming journey start now.");
        }
    }
}
```

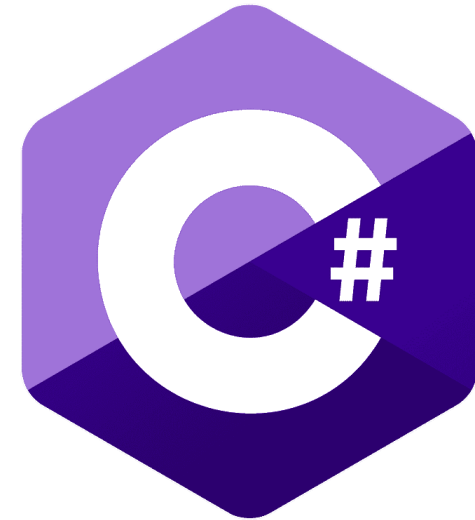


Fig: C#

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Thank You