

What are Compilers?

In []: ==>Compilers are used to Convert High Level Language into Machine Language.It **is** working **as** Translator.

==> High Level Language : The language that can understand by Humans(English)

==> Machine Language : The language that **is** undertandable by Computer(Binary Language)

What is Programming?

In []: Programs/Codes : A set of Instructions that we will give to computers to solve a problem.

Computer Programming ==> The Process of Creating a set of Instructions that tell computers how to what task computers need to do.

Computer Programming can be Done **with** the help of Different Programming Languages.

Example:

C,C++,python,java,javascript,golang

Types of Programming language

In []: Types of Programming language:

==> Static Programming language are those languages **in** which we need to define **or** declare the type of data that we are using **in** our program.

In Static programming we need to specify the datatype first before execution.

Example: Java,c,c++

==> Dynamic Programming language are those language **in** which we need **not** to define the datatype. At the Runtime Compiler will automatically analyze the datatype.

Example: Python **and** Javascript

What is Python Programming?

In []: Python **is** a General Purpose High Level Programming Language.

General Purpose ==> Common Purpose(You can use this programming language anywhere anytime).

High Level Programming ==> It's **syntax is similar to english Language**.

==> If we are writing any code we need to take care about low level activites(Memory Utilization,Datatype,Pointers) such type of programming language are known **as** programmer friendly progr

Example:

In C language **if** you want to add Two Number:

```
#include<stdio.h>
#include<conio.h>
int main()
{
    int a=10;
    int b=20;
    int c=a+b;
    printf("Sum is %c",c);
}
```

In python **if** we want to Add of Two number

```
a=10
b=20
c=a+b
print(c)
```

History of Python

In []: ==> Python has developed by Guido Van Rossum **in** 1989 **while** working at National Research Institute at Netharland.

==> The Official Date of Birth of Python **is** 20th Feb 1991.

==> Python **is** Implemented Before Java(1996 jdk 1.0)

Where we Can Use Python?

In []: ==> Machine Learning Algorithms --> Scikit Learn(Each **and** Every Machine Learning Algorithms are already written **in** Python Programming)

==> Web Application --> Django,Flask,Tornado (Framework are having inbuilt code that code we can use **for** furthur process)

==> Data Science **and** Data Analysis --> Numpy,Pandas

==> Data Visualization --> Seaborn **and** Matplotlib

==> IOT(Internet of Things) --> AI

==> Game --> Pygame

==> Desktop Application --> Tkinter

Where We can use Java?

In []: ==> Web Applications --> Springboot **and** Spring

==> Android developemnt --> Java **and** Kotlin

Worst Case of Using Python

In []: ==> Android Application --> Java **and** Kotlin

==> For Implement Compiler --> C **and** C++

Features of Python

In []: ==> Simple **and** Easy --> The Syntaxes of python **is** approximately similar to english language.

==> Free **and** Open Source --> We need **not** to spend a single penny **for** writing python code.

==> High Level Programming Language --> Programmer Friendly

==> Platform Independent --> **if** we are any python code **in** any one operating system(windows,Linux, Mac Os) then we also run same code on any other operating system.

The output of that python code **is** same **in** every operting system.

==> Both Functional **and** Object Oriented Programming --> We can write python programs **with** the help of functions **as** well **as with** the help of classes **and** object.

==> Dynamic Typed Programming Lanaguage --> If we are writing a code **in** that code we need **not** to define which kind of data we are going to use **in** our programming.

==> Interpreted Programming Language --> Line by Line statements of the program will be executed.

==> Rich Libraries **and** Frameworks --> In Python we are having million of libraries **and** Packages **and** we can use all those libraries **and** Packages **for** different Technologies.

Example of Static Types and Dynamic Typed Programming Language

C Program to Add Two Numbers

In []: #include<stdio.h>
#include<conio.h>
int main()
{
 int a=10;
 int b=20;
 int c=a+b;
 printf("Sum is %c",c);
}

Python Program to Add Two Numbers

In []: a=10
b=20
c=a+b
print(c)