JUST FOR CODE

LEARN SOFTWRE ENGINEERING

Programming

The method of creating software is called programming. These methods are written in a particular language and that language is called programming language.

Name of some programming languages

1. Python
2. C
3. Java
4. Php

Coding or code

The words we use while programming are called coding.

Note :-

Low-Level language is the only language which can be understood by the computer. Low-level language is also known as Machine Language. The machine language contains only two symbols 1 & 0. All the instructions of machine language are written in the form of binary numbers 1's & 0's.

High-Level Language Write in english	**Low-Level Language** Write in binary
These are programmer-friendly languages that are manageable, easy to understand, debug, and widely used in today's times.	These are machine-friendly languages that are very difficult to understand by human beings but easy to interpret by machines.

High-level languages require the use of a compiler or an interpreter for their translation into the machine code.	Low-level language requires an assembler for directly translating the instructions of the machine language.

These are portable from any one device to another.	A user cannot port these from one device to another.
High-level languages do not depend on machines.	Low-level languages are machine-dependent and thus very difficult to understand by a normal user.
High-level languages take more time for execution as compared to low-level languages because these require a translation program.	The translation speed of low-level languages is very high.
One does not require a knowledge of hardware for writing programs.	Having knowledge of hardware is a prerequisite to writing programs.
High-level languages do not provide various facilities at the hardware level.	Low-level languages are very close to the hardware. They help in writing various programs at the hardware level.
Some examples of high-level languages include python, php, java	Some examples of low-level languages include the Machine language and Assembly language.

Compiler

Compiler is a translater which translates english word into binary (machine code)

Interpreter

Interpreter is a translater which translates english word into binary (machine code)

Differences between compiler and interpreter

A compiler translates the entire source code in a single run. An interpreter translates the entire source code line by line

Python definition

Python is a high-level programming language.

Python Inventions

Invented by Guido van rossum on 20 february 1991

Data
Number character files commonly these are known as data

Characters
a, b, c, d

String
Just, for, code,

Files
test.mp4, test.jpg, test.pdf test.mp3, test.audio

Statements or instructions
A statement is a single line of code that performs a specific task

Variables
Variables are the way to store data in programming.

Lowercase

All letters in small **Example** : myvariable

Uppercase

All letters in capital **Example** : MYVARIABLE

Camelcase

First letter is small but next word first letter is capital **Example** : my**V**ariable

Snakecase

First letter is capital and also next word first letter is capital **Example** : **M**y**V**ariable

Variable declaration

x = 18
Y = 32

Variable declaration in shorthand

x , y = 14 , 16

Same data in multiple variables

x = y = z = 22

Keyword

Keywords are predefined, reserved words used in programming that have special meanings to the compiler

35 Keywords are there in pyhton

False	await	else	import	pass
None	break	except	in	raise
True	class	finally	is	return
and	continue	for	lambda	try
as	def	from	nonlocal	while
assert	del	global	not	with
async	elif	if	or	yield

Keyword`s Uses

def : def keyword is used to create a function

return : return keyword is used return something from a function

Functions

A function splits the code into several parts to keep all the code organized

There are two types of function

1. **User-defined function** : A function that is created by user (**we define and we call**)

2. **Built-in Or Predefined function** : A function that is created by programming language itself (**we only call but we can not define**)

Some Built-in functions

1. print()
2. int()
3. float()
4. str()
5. input()

Data Types

1. String type
2. Numeric type
3. Boolean type
4. Set type
5. Sequence type
6. Mapping type
7. Binary type
8. None type

String Type

Type	**Example**
str	“alok kumar”, ‘a’

Numeric Type

Type	**Example**
int	53151, -211
float	120.22, -52.36

Boolean Type

Type	**Example**
bool	True , False

Example to checking data type

```
type = type(123) print(type)
```

```
type = type(120.36) print(type)
```

```
type = type(“alok kumar”) print(type)
```

```
type = type(True) print(type)
```

Operator

Mathematical symbols are known as operator.

1. **Arithmetic operators**

+ Addition

- Subtraction

* Multiplication

/ Division

% Modulus

** Exponentiation

// Floor division

2. Comparison operators

== Equal

!= Not equal

> Greater than

< Less than

>= Greater than or equal to

<= Less than or equal to

3. Assignment operators

=

+=

-=

*=

/=

%=

//=

**=

&=

|=

^=

>>=

<<=

4. Logical operators

and
or
not

5. Identity operators

is

is not

6. Membership operators

in
not in

7. Bitwise operators

& AND
| OR
^ XOR
~ NOT

<< ZERO FILL LEFT SHIFT

>> SIGNED RIGHT SHIFT **Conditions**

Conditions

Condition helps you to make decisions in programming language

Syntax - 1

if **expression** :

    statement

else :

    statement

Syntax – 2

if **expression** :

    statement

elif **expression** :

    statement

else :

    statement

Expressions example

1. 2 == 2
2. 10 > 5
3. 56 < 6
4. 10 != 15