* Oral *

initially designed by Guido van Rossum in 1991

Q. what is programming ?

⇒ Just like we use Hindi, English, Marathi to communicate each other we use a programming language like python to communicate with the computer.

Q. what is python ?

⇒ python is simple and easy lang to understand language which feels like reading simple english. psedo code nature of python makes it easy.

Q. Fetures of python

- Easy to understand
- Free & open source.
- Highe level language.
- portable on linux / windows / mac

Q. pip : you can use pip to install a module.

Q. Types of module - i) Buil in
ii) External

Q. comments : coments are used to write something which the programmer does not want to execute.

* Variable

A variable is the name given to a memory location in a program.

* Datatypes

1) Integer
2) Floating point numbers
3) Strings
4) Booleans
5) None

* Operators

1) Arithmetic
2) Assignment
3) Comparison
4) Logical

* String : String is a datatype in py
String is a sequence of characters

* Lists : python lists are containers to store a set of values of any data type

List methods
1) sort
2) reverse
3) append
4) insert
5) pop
6) Remove

* Tuples in python :

A tuple is an immutable data type
& cannot change

Tuple method

1) count
2) index

* Dictionary : Dictionary is a collection of key value pairs

* properties of dictionary :

- mutable
- indead
- cannot contain duplicate keys
- unordered.

* Dictionary methods :-

- items
- keys
- update
- get

* Properties of Sets :-
1) sets are unordered
2) sets are unindexed
3) There is no way to change items in sets
4) sets cannot contain duplicate values

* Operations on Sets
1) s.len
2) s.remove
3) pop
4) s.clear
5) union
6) intersection

* Logical operators
In python operators operate on conditional statements Ex. and or not

* Loops : sometimes we want to repeat a set of statement in our program for instance : print 1 to 100
Loops make it easy for a programer to tell the computer which set of instructions to reapeat and how

Loop control : Used to change the flow of execution

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* Types of loop 1) while
2) for

* Function :
A function is a group of statements performing a specific task

* Types of functions 1) Built in
2) user defined.

* Recursion : Recursion is a function which calls itself
It is used to directly use a mathematical formula as a function

* Inheritance : It is a way of creating a new class from an existing class

* Type of inheritance
1) Single
2) multiple
3) multilevel

* oops : operators in python can be overloaded using dunder methods!

* Keywords :- A coord that serves a specific function in python
36 Keywords in python.

Ex. print, return, if, else, class, true, false.

* Literals : a data type and can hold any value type, such as Strings, Numbers

* RegEx : It is a sequence of characters that forms a search pattern.

* Comprehension : provide a expressive way to create, list and dictionaries and sets.

* Dicision making State. :
Specify conditions with boolean expresions evaluated to a true or false boolean value.

* Constructor : a special class method for creating and initializing an Object instance of that class.

* Destructor : A special method in object oriented programming lang. that is invoked when an objects lifecycle ends.

* OOPs : It is a programing paradigm uses objects and classes.

* Class : a code templete for creating objects

* Object : variables that contains data & functions that can used to manipulate the data.

* Encapsulation : describes the idea of wrapping data and the methods that work on data within one unit.

* polymorphism : a term used to refer to an objects ability to take on multiple forms.

* Data abstraction : The process by which data and fanctions are defined in such a way that only essential details can be seen and unnecessary implementations are hidden

* module : file with py extension containing code that can be imported inside another Python moduels operation program.

* Exception Handling :- Arisses when an error occurs that can causes the program to terminate.

* File Handling :- allows us to store data that can be accessed by our code for various puposes like reading, writting modefying and deleting data from files.