PYTHON

* Python is a general purpose interpreted interactive high level object-oriented scripting language.
* It is used in web development, machine learning, artificial intelligence and etc..
* It is simple, easy to learn.
* Compared to other languages it contains minimal number of code.
* Python was first discovered by Guido van Rossum in 1991.

FEATURES OF Python:

1. Easy to code
2. Automatic memory management
3. Fully dynamic type system
4. Designed to be highly readable
5. Platform independent
6. Portable
7. Easy to debug
8. Interpreted

ROOTS OF python:

C++ -> Simplicity

JAVA ->object oriented

Hashell-> Lambda and math

Perl ->Interpreted

DIFFERENCE BETWEEN COMPILER AND INTERPRETER:

COMPILER:

It checks all kinds of limit, range and errors etc.,

Compiler goes to through the entire program and then translates the entire program into machine codes.

SOURCE CODE 🡪 COMPILER 🡪OBJECT PROGRAM

INTERPRETER

It translates only one statement of the program at a time.

It does not convert source code into object code instead it scans line by line.

It execute the program until the error occurred.

COMMENTS

Comments help the programmers to understand the code.

It does not print in the output.

It only seen in the input page.

They are two types of comments. They are

Single line comment

Multi line comment

Single line comment(#):

If the comment in single line use the single line comment.

Multiline comment(‘ ‘ ‘ ‘ ‘ ‘):

If the comment more the oneline use this type of comment.

DATA TYPES:

Data types are the categorization of the data items.

* Text type : str
* Numeric type : int,float,complex
* Sequence type : list,tuple,range
* Mapping type : dict
* Boolean type : True, false
* Set type

CASTING

It is used to specify the type of the data in a variable.

For example,

Int, float, String etc…

TYPE CONVERSION

It is used to covert the variable data type into the another data type.

For example,

Covert the int into float etc.,

VARIABLE:

It is a container to store the values.

Variable should be written in the below formats:

* num=10
* num\_sum=10
* MYNUM=10
* Mynum2=10

Variable should not be written in the below formats:

* 2mynum=10
* My num=10
* my-num=10

1. Camel case=myVariableName
2. Pascal case=MyVariableName
3. Snake case=my\_Variable\_name

IDENTIFIERS

It is used to identify the variable, class, module etc.,

OPERATORS

Operators are used to done the operation using operants.

TYPES OF OPERATORS

* Arithmetic operator
* Assignment operator
* Comparison operator
* Logical operator
* Identity operator
* Membership operator
* Bitwise operator

ARITHMETIC OPERATOR

It is used to perform mathematical operation

* Addition 🡪 +
* Subtraction 🡪 -
* Multiplication🡪 \*
* Division 🡪 /
* Modulus 🡪 %
* Exponentiation🡪 \*\*
* Floor division 🡪 //

COMPARISON OPERATOR

* == 🡪 Equal to
* >= 🡪 Greater than equal to
* <= 🡪 Less than equal to
* >🡪 Greater than
* < 🡪 Less than
* != 🡪 not equal to

LOGICAL OPERATOR

* And
* Or
* Not+++++

IDENTITY OPERATOR

* is
* is not

Membership operator

* in
* not in

Bitwise operator

* & 🡪 and
* | 🡪 or
* ~ 🡪not

Assignment operator

* +=
* -=
* \*=
* /=
* %=
* //=
* \*\*=

STRINGS

* Sequence of character

Length of string

* It is used to identify the length of the given string
* Print (len())

Check string

It is used to identify the word that present in the particular line or not.

Doc string

Written line in the comment section shows in the output using doc string.

\_\_doc\_\_

Directory

dir()

Return all properties and methods of the specified object without the values.

ESCAPE CHARACTER

|’ 🡪 Single quote

|| 🡪Backslash

\n 🡪new line

\t 🡪tab

\b🡪backspace

(|)🡪Quotes

\r🡪Carriage return

String concardenate

String concordenate means joint the two separated string or string and variable etc.,

FORMAT METHOD

The format method formats the specific value and insert them inside the string placeholder.

The placeholder defines the curly bracket{}.

PYTHON STRING METHODS:

* capitalize
* upper()
* lower()
* strip()
* split()
* isalpha()
* isalnum()
* partition()
* rpartition()
* isupper()
* islower()

STRING INDEX

Find the first occurence of the specified value.

SYNTAX:

String index(value,start,end)

Two types of index:

* Positive index
* Negative index

The index() method and find() method are almost same but one difference between is that the find() method return -1 if they did not found the value in the given string.

STRING SLICING:

Return a range of characters by using slice index.

They are two types. There are

* Positive index
* Negative index

SYNTAX:

[start:stop]

[start: ]

[ : end]

[start:stop:step]

POSITIVE INDEX

It means using the positive value and the range was start from left and end in the right .

NEGATIVE INDEX

It means using the negative value and the range was start from right side and end in the left side.

Reverse order also done in this type.

|  |  |
| --- | --- |
|  | I |
|  |  |
|  |  |
|  |  |
|  |  |
|  |  |
|  |  |