

21/05

Day One

> Python

Python is a high-level general-purpose programming language.

> It is an Interpreted Language.
because it does not need a separate compilation step before running.
Instead it checks line by line.

> Features

- > Easy to learn + use
- > Expressive language
- > Interpreted language
- > Free and open source
- > Dynamic memory allocation

Application

- > web application
- > Software development
- > business application
- > enterprise application
- > game processing application,

Comments:

It is a part of code, but does not take any place in execution.

Type of comments

- 1) Single Line Comment
- 2) Multi Line Comment

Single Line

→ denoted by `#`

at pgm.

Multi Line

Denoted by `'''` or `"""`

`''' wapt calculate student result '''`.

Keywords

are special reserved word that have special meaning and cannot be used as identifiers. (variables, func, names etc)

Ex:- True, False, try, etc.

Datatypes

It is a predefined data, to mention what type of data it was

→ str, int, float, bool

sequence datatype (Data structure)

Str

List

Tuple

Set

Day-2

Variables :-

- > Variables are identifiers of a physical memory location, which is used to hold values temporarily during execution.
- > Like many other programming lang no need to define variables at any soon as assigned & it is automatically declared. This is why python is called a dynamically typed language.

Rules to follow

- Variable names are case-sensitive
- must begin with a letter or underscore
- can only contain alphanumeric characters and underscore
- name can not contain space
- Reserved words cannot be used as variable name.

the

a = 7

A = Gayatri.

Input / Output function

Input function.

- Python uses the `input()` function to take input from the user
- It always returns a string
- Convert it into int, float etc if needed.

```
name = input ("Enter your  
name")  
print ("Hello ", name)
```

Date _____
Page _____

Enter your name Gayatri
Hello Gayatri

Output function

- 2 use the `print()` function to display op.
- 2 `print()` string, variables or even multiple values..

6c

$$x = 10$$

$$y = 20$$

`print("The sum of " + x + " and, y,
is: " + x + y).`

Operators

- 2 operators are the construct which can manipulate the value of operands - These are the symbol used for the purpose of logical, arithmetic & various other operations.

6c:

$$4 + 5 = 9$$

4 and 5 are operands
+ is an operator

Types of operator

- * Arithmetic operator
- * Comparison
- * Assignment
- * Logical
- * Bit wise
- * Membership
- * Identity

1) Arithmetic operator

Addition → used to add the two given numbers
 ex. $a + b$

Subtraction → It is used to find the difference of 2 given numbers.
 ex. $a - b$

Division → It returns the op after dividing the 2 numbers.
 ex. a / b

Multiplication → used to multiply and operand with one another
 ex. $a * b$.

Remainder → It returns the remainder after dividing a no b

Floor division → $10 \div 3$ provides the quotient floor value.

- 3) Comparison operators → compare the values on either side of them and decide the relation among them. They are also called relational operators.

operator	Name
$= =$	Equal
\neq	not equal
$>$	Greater than
$<$	Less than
\geq	Greater than or equal to
\leq	Less than or equal to

- 3) Assignment operators → are used to assign values to variables. These operators includes simple operators.

operator	Name
$=$	Assignment Operator
$+ =$	Addition Assignment $a = 5 \quad a = a + 5$
$- =$	Subtraction Assignment $a = 5 \quad a = a - 5$
$* =$	Multiplication
$/ =$	Division
$\% =$	Remainder
$++ =$	Exponent $0^{++} = 2$
$// =$	Floor division $9 // 3 = 3$

Bit wise operator

→ Bitwise operator works on bit and performs bit by bit operator

operator

&

|

^

~

<<

>>

Name

Binary and

OR

XOR

complement

Left Shift

Right Shift

AND - If both bits are true.

OR - If either of them are true.

XOR - Sets each bit to 1 if only one of bit is 1.

<< - Shift left by pushing zeros in from the right and let the leftmost bit fall off.

>> - Shift right by pushing copy of the left most bit in from the left.

Logical operators

The assessment of expression
to make decisions typically
makes use of logical operators

operator

Description

Example

AND

If both the
operands are
true then
condition is
true.

$a \& b$ are
true

OR.

If any of the
2 operands
are non-zero
then condition
is true.

$(a \text{ or } b)$
true

logical

unless the
Logical
value

NOT

$\text{NOT}(a \& b)$
is false.

→ membership operators.

Python's membership operators used for
membership in sequence
such as string, list or tuple.

operator

in

5 in {1, 2, 3, 4, 5}

It returns true if it finds the corresponding value in a specified sequence.

NOT IN

5 not in {1, 2, 3, 4, 5}

It returns true if it does not find the corresponding value.

Conditional Statements

- Conditional statements act depending on whether a given condition is true or false.

4 types:-

If statement

if - else

if - elif - else

nested if