21 May **Python Basic - 2**

Q.1. Create two int type variables, apply addition, subtraction, division and multiplications and store the results in variables. Then print the data in the following format by calling the variables:

First variable is \_\_ & second variable is \_\_.

Addition: \_\_ + \_\_ = \_\_

Subtraction: \_\_ - \_\_ = \_\_

Multiplication: \_\_ \* \_\_ = \_\_

Division: \_\_ / \_\_ = \_\_

Code

a=6

b=5s

add=a+b

sub=a-b

mul=a\*b

div=a/b

print("First variable is a & second variable is b")

print(f"Addition: a+b={add}")

print(f"Subtraction: a-b={sub}")

print(f"Multiplication: a\*b={mul}")

print(f"Division: a/b={div}")

Q.2. What is the difference between the following operators:

1. ‘/’ & ‘//’
2. ‘\*\*’ & ‘^’

i)‘/’ and ‘//’- Both the operators are used for division purpose but the output format varies in both the cases.

When two variables are divided by / we get output in floating values but when the same numbers are divided by // we get only whole numbers without decimal value i.e. floor division.

Eg: 6/5=1.2 and 6//5=1

ii) ‘\*\*’ and ‘^’ –‘\*\*’ refers exponentiation operator. Eg 2\*\*4 will output 16.

‘^’ is the XOR it is one of the bitwise operators and sets each bit to 1 if one of the operand is 1. Eg- 1^0=1

* 1. List the logical operators.

Logical operators are and ,or and not

* 1. Explain right shift operator and left shift operator with examples.

Left shift operator

The bitwise left shift operator in Python shifts the bits of the binary representation of the input number to the left side by a specified number of places. The empty bits created by shifting the bits are filled by 0s.

Eg: Suppose we have to shift the bits of 14 by 2 places. We will first convert it into binary format.14 in binary format is written as 1110.

After shifting, the empty rightmost bits will be filled with 0s. The output of 14 << 2 will be 111000 in binary which converts to the value 56 in integer format.

Right shift operator

The bitwise right shift operator in python shifts the bits of the binary representation of the input number to the right side by a specified number of places. The empty bits created by shifting the bits are filled by 0s.

Eg: Suppose we have to shift the bits of 14 by 2 places. We will first convert it into binary format.14 in binary format is written as 1110.

After shifting, the two rightmost bits 1 and 0 will be discarded and the empty leftmost bits will be filled with 0s. The output of 14 >> 2 will be 0011 in binary which converts to the value 3 in integer format.

Q5. Create a list containing int type data of length 15. Then write a code to check if 10 is present in the list or not.

code

ilist=list(range(15))

10 in ilist