Practical NO – 3

* Aim :- Write simple python program using operators Arithmatic operators, logical operators, Bitwise operators

* Resources used :-

SR. NO.	Name of Resources	Specification	Quantity	Remark
1.	Computer System	Windows 10	1	
2.	Software	Python IDE	1	

* Practical Related Questions :-

1) Mention the use of //, **, %/ operators in python

→ 1. // → It rounds the result down to the nearest whole number.

2) ** → It gives the expantial number of left hand side to the right hand side.

3) %/ → It calculate the modules at two number

2) Describe ternary operator in python.

→ Ternary operators also known as conditional expression are operators that evaluate something based on condition being true or false.

eg.

min = a if a<b else b

3) Describe about different logical operators in python with appropriate examples.

→ 1) and - logical AND returns true if both the operators are true.

eg.

a = 3 and b = 5

a < b and b > a will return true.

2) or - logical OR returns true if both the operands conditions are true.

eg.

a = 3 and b = 5

a < b and b > a will returns true.

3) not - logical not will return true if operand is false.

eg.

a = 3 & b = 5

a < b and b > a will returns true.

4) Describe about different Arithmatic operators in python with appropriate examples.

→ 1. "+" adds two operators side operands

eg. 3+4 will give output 7

2) '-' — substract two operands.
eg. 4-3 output = 1

3) '*' — multiply two operands.
eg. 4*3 = 12

4) '/' — divide two operands.
eg. 12/4 = 3

5) '//' — divide 1st operands by second and gives whole number.
eg. 15//3 = 7

6) '%' — Returns Remainder when 1st operand is divided by second.
eg. 5%2 output = 1

5) Describe the different Bitwise operators in python with appropriate example.

→ 1) '&' — Returns 1 if both bits are 1 else 0
eg. a = 10 = 1010 (Binary)
b = 4 = 0100 (Binary)
a&b output = 0

2) '|' — Returns 1 if either of the bits is 1 else 0

eg. a = 10 = 1010 (Binary)
b = 4 = 0100 (Binary)
a | b // output = 14

3) '~' — Returns one's compliment of the number.

eg. a = 10 = 1010 (Binary)
b = 4 = 0100 (Binary)
~a = -11
~b = -4

4) '^' — Returns 1 if one of the bits is 1 and other is 1 else return false.

eg.
a = 10 = 1010 (Binary)
b = 4 = 0100 (Binary)
a ^ b // output = 14

5) ">>" — shifts the bits of the number to the right and fills 0 on voids left as a result.

eg. a = 10
a >> 1 // output = 5

6) "<<" — shifts the bits of the number to the left and fills 0 on voids as a result

eg. a = 5
a << 1 // output = 10

Exercise:

1. Write a program to convert U.S dollars to Indian rupees.

Program:

```
usd = float (input("Enter currency in USD $: "))
inr = usd * 73
print("The currency in INR is:",inr, “rupees”)
```

output:

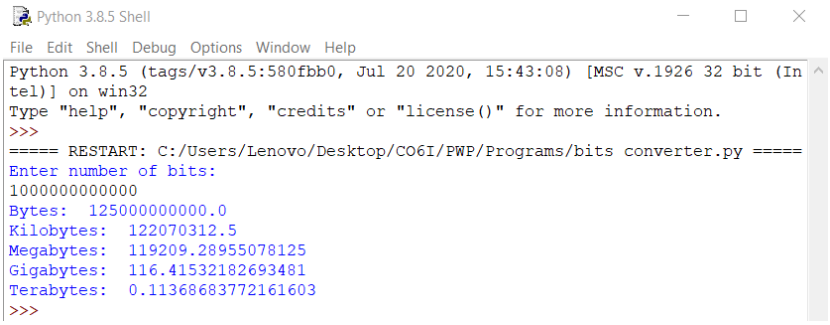
```
========== RESTART: D:/CO6I/PYTHON/PR 3A.py ==========
Enter currency in USD $: 34
The currency in INR is: 2482.0 rupees
>>>
```

2. Write a program to convert bits to Megabytes, Gigabytes and Terabytes.

Program:

```
bits = int(input("Enter number of bits:\n"))
byte = bits/8
kb = bits/8192
mb = bits/8388608
gb = bits/8589934592
tb = bits/8796093022208
print("Bytes: ",byte)
print("Kilobytes: ",kb)
print("Megabytes: ",mb)
print("Gigabytes: ",gb)
print("Terabytes: ",tb)
```

output:



3. Write a program to find square root of a number.

Program:

```
num = input("enter a number: ")
num_sqrt = num ** 0.5
print("the square root of %0.3f is %0.3f"%(num,num_sqrt))
```

output:

```
========== RESTART: D:/CO6I/PYTHON/PR 3C.PY ==========
enter a number: 8
the square root of 8.000 is 2.828
>>>
```

4. Write a program to find area of rectangle.

Program:

```
width = int(input("enter width of rectangle: "))
height = int(input("enter height of rectangle: "))
area = width * height
print("area of rectangle %0.3f:"%(area))
```

output:

```
========== RESTART: D:/CO6I/PYTHON/PR 3D.PY ==========
enter width of rectangle: 34
enter height of rectangle: 4
area of rectangle 136.000:
>>>
```

5. Write a program to calculate area and perimeter of square.

Program:

```
length = int(input("enter length of one side: "))

area = length * length
perimeter = 4 * length
print("area of square %0.3f:"%(area))
print("perimeter of square %0.3f:"%(perimeter))
```

output:

```
========== RESTART: D:/CO6I/PYTHON/PR 3E.py ==========
enter length of one side: 45
area of square 2025.000:
perimeter of square 180.000:
>>>
```

6. Write a program to calculate surface volume and area of a cylinder.

Program:

```
pi = 3.14
height = float(input("enter height of cylinder: "))
radian = float(input("enter radian of cylinder: "))
volume = pi * radian * radian * height
sur_area = ((2*pi*radian) * height) + ((pi*radian**2)*2)
print(" surface area of cylinder %0.3f"%(sur_area))
print("suraface volume of cylinder %0.3f"%(volume))
```

output:

```
========== RESTART: D:/CO6I/PYTHON/PR 3F.py ==========
enter height of cylinder: 20
enter radian of cylinder: 12
 surface area of cylinder 2411.520
suraface volume of cylinder 9043.200
>>>
```

7. Write a program to swap the value of two variables.

Program:

```
a = int(input("enter first number:"))
b = int(input("enter second number:"))

temp = a
a = b
b = temp
print("swapped value of a:{}".format(a))
print("swapped value of b:{}".format(b))
```

output:

```
========== RESTART: D:/CO6I/PYTHON/PR 3G.PY ==========
enter first number:5
enter second number:7
swapped value of a:7
swapped value of b:5
>>>
```