x = bool(5)

→ to get the type of datatype

type(x)

→ inbuilt data type → defaultly present in python.

Variable declaration methods

```
a=1
b=2
c=3
print(a,b,c)
```

```
a=1; b=2; c=3
print(a,b,c)
```

```
a,b,c= 1,2,3
print(a,b,c)
```

→ Float is better than int

bcz it can read both int & float data.

Operators

It is a special symbol used for particular operation blw 2 variables.

Operators are used to perform operations on variables & values.

a+b = c +, = → operators a, b, c → operands.

1. Arithmatic operator → +, -, *, /, %, //, **
2. Assignment operator → =, +=, -=, *=, /=, %=, //=, **=

used to assign values to variable.

/ → returns float & // → returns integer

eg: a = a+2

b += 2

3. Relational [comparison operator → ==, !=, <, >, <=, >=

- returns true or false based on comparison
- do compare 2 values.

eg: x = 2

y = 3

print(x == y) → result false

4. Logical Operators → and, or, not

used do combine conditional statements

and → returns true if both stmts are true.

eg: x < 5

print(x > 3 and x < 10) → o/p true.

or → returns true if one of the stmts is true.

not → reverse the result

5. Membership operator → in, not in

used to test whether a value or variable is present in a sequence.

eg: group = [1, 2, 3, 4, 5]

print(2 in group) → o/p True.

6. Identity Operator → is, is not

used to compare the memory locations of 2 objects

They check whether the 2 variables refers to the same object, not whether their

eg: a = 2
b = 3
print (a is b) → false
print (a is not b) → true.

7. Bitwise operators → used to compare binary numbers.

& - and - sets each bit to 1, if both bit are 1 - x & y.

| - or - sets each bit to 1, if any of bit is 1 - x | y.

^ - XOR - sets each bit to 1, if only one of the bits is 1

~ → NOT - inverts all the bits.

>> → ~~zero fill left shi~~ signed right shift

<< → zero fill left shift

1. write a python pgm that takes length & width of a rectangle from the user & prints its area.

```
length = int(input("enter length:"))
width = int(input("enter width:"))
area = length * breadth
print(f" area of rectangle is {area}")
```

2. write a pgm that ask the user for the side of a square & print its perimeter.

```
side = int(input("enter length of side:"))
perimeter = 4a
print(f" perimeter is {perimeter}")
```

3. Take the base & height of triangle as i/p & print its area.

```
base = int(input("enter base:"))
height = int(input("enter height:"))
area = 0.5 x base x height
print("area is", area)
```

4. write a pgm to ask the user of the radius of a circle & print circumference

```
radius = int(input("enter radius:"))
circumference = 2x3.142xradius
print("circumference is:", circumference)
```

5. Take principal (P), Rate (R) & Time (T) as i/p from user & print the simple interest.

```
P = float(input("enter principal"))
R = float(input("enter rate:"))
T = float(input("enter time"))
SimpleInterest = (P * R * T) / 100
print(f"Simple interest is {simpleinterest}")
```