Recruitment EDGE

Python Programming

Session 3

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Operators in Python

Types of Operators

- Arithmetic Operators
- Comparison (Relational) Operators
- Assignment Operators
- Logical Operators
- Bitwise Operators
- Membership Operators
- Identity Operators

Arithmetic Operators

+ Addition	Adds values on either side of the operator.	a + b = 30
- Subtraction	Subtracts right hand operand from left hand operand.	a – b = -10
*** Multiplication**	Multiplies values on either side of the operator	a * b = 200
/ Division	Divides left hand operand by right hand operand	b / a = 2
% Modulus	Divides left hand operand by right hand operand and returns remainder	b % a = 0
**** Exponent**	Performs exponential (power) calculation on operators	a**b =10 to the power 20
//	Floor Division	9//2 = 4 and 9.0//2.0 = 4.0,

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Comparison Operators

Operator	Description	Example
= =	**If the values of two operands are equal, then the condition becomes true.**	**(a == b) is not true.**
!=	**If values of two operands are not equal, then condition becomes true.**	
>	**If the value of left operand is greater than the value of right operand, then condition becomes true.**	**(a > b) is not true.**
<	**If the value of left operand is less than the value of right operand, then condition becomes true.**	**(a < b) is true.**
>=	**If the value of left operand is greater than or equal to the value of right operand, then condition becomes true.**	**(a >= b) is not true.**
<=	**If the value of left operand is less than or equal to the value of right operand, then condition becomes true.**	**(a <= b) is true.**

Assignment Operators

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Operator	Description	Example
=	Assigns values from right side operands to left side operand	c = a + b assigns value of a + b into c
+=	It adds right operand to the left operand and assign the result to left operand	c += a is equivalent to c = c + a
-=	It subtracts right operand from the left operand and assign the result to left operand	c -= a is equivalent to c = c - a
*=	It multiplies right operand with the left operand and assign the result to left operand	c *= a is equivalent to c = c * a
/=	It divides left operand with the right operand and assign the result to left operand	c /= a is equivalent to c = c / ac /= a is equivalent to c = c / a
%=	It takes modulus using two operands and assign the result to left operand	c %= a is equivalent to c = c % a
**=	Performs exponential (power) calculation on operators and assign value to the left operand	c **= a is equivalent to c = c ** a
//=	It performs floor division on operators and assign value to the left operand	c //= a is equivalent to c = c // a

Bitwise Operators

Operator	Description	Example
& Binary AND	Operator copies a bit to the result if it exists in both operands	(a & b) (means 0000 1100)
| Binary OR	It copies a bit if it exists in either operand.	(a | b) = 61 (means 0011 1101)
^ Binary XOR	It copies the bit if it is set in one operand but not both.	(a ^ b) = 49 (means 0011 0001)
~ Binary Ones Complement	It is unary and has the effect of 'flipping' bits.	(~a) = -61 (means 1100 0011 in 2's complement form due to a signed binary number.
<< Binary Left Shift	The left operands value is moved left by the number of bits specified by the right operand.	a << = 240 (means 1111 0000)
>> Binary Right Shift	The left operands value is moved right by the number of bits specified by the right operand.	a >> = 15 (means 0000 1111)

Logical Operators

Operator	Description	Example
and Logical AND	If both the operands are true then condition becomes true.	(a and b) is true.
or Logical OR	If any of the two operands are non-zero then condition becomes true.	(a or b) is true.
not Logical NOT	Used to reverse the logical state of its operand.	Not(a and b) is false.

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Identity Operators

Operator	Description	Example
is	Evaluates to true if the variables on either side of the operator point to the same object and false otherwise.	x is y, here **is** results in 1 if id(x) equals id(y).
is not	Evaluates to false if the variables on either side of the operator point to the same object and true otherwise.	x is not y, here **is not**results in 1 if id(x) is not equal to id(y).

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Membership operators

Operator	Description	Example
in	Evaluates to true if it finds a variable in the specified sequence and false otherwise.	x in y, here in results in a 1 if x is a member of sequence y.
not in	Evaluates to true if it does not finds a variable in the specified sequence and false otherwise.	x not in y, here not in results in a 1 if x is not a member of sequence y.

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Operators Precedence

Operator	Description
**	Exponentiation (raise to the power)
~ + -	Complement, unary plus and minus
* / % //	Multiply, divide, modulo and floor division
+ -	Addition and subtraction
>> <<	Right and left bitwise shift
&	Bitwise 'AND'
^ |	Bitwise exclusive `OR' and regular `OR'
<= < > >=	Comparison operators
<> == !=	Equality operators
= %= /= //= -= += *= **=	Assignment operators
is is not	Identity operators
in not in	Membership operators
not or and	Logical operators

Thank

You !!