Study Notes

Simplification of expressions in Python Creation of expressions- M-14

Class -XI

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Expressions

An expression is defined as a combination of constants, variables, and operators. An expression always evaluates to a value. A value or a standalone variable is also considered as an expression but a standalone operator is not an expression. Some examples of valid

expressions are given below.

(i) 100 (iv) 3.0 + 3.14

(ii) num (v) 23/3 -5 * 7(14 -2)

(iii) num – 20.4 (vi) "Global" + "Citizen"

Expression in Python can be of arithmetic expression string expression relational expression and logical expression

Arithmetic Expression

Expression arithmetic expression involves numbers and arithmetic operators.

Examples: a=c+b,SI=P*R*T

Relational Expression

An expression having literals and or variables of any type and relational operators is a relational expression.

Examples

x>y, x>=y

Logical Expression

An Express having literals and variables of any type and logical operators is a logical expression

Examples

A or B,B and C

String Expressions

Expressions made up of two string operators + and * and string operands form string expressions

Example

“hello”*3,“hai “+”there”

Evaluating arithmetic expression

1. Determines the order of evaluation in an expression

2. identifies the subexpressions as per priority

3. each sub expression is evaluated

4. performs implicit conversion in case of mixed datatype expressions

5.Compute the result based on operator

6.Rreplaces the Sub expression with computed result

7.evaluartes the expression and final result is obtained

Implicit type conversion

Implicit type conversion is a conversion performed by the compiler to upgrade the type of an of operand in a mixed expression were different type of operands are present.

Evaluating relational expression

Relational expressions are evaluated from right to left since all comparison operators have same priority.in case of a mixed expressions subexpressions are evaluated according to their priority. Lastly relational operator evaluated and the result will be a Boolean value True or False.

Examples

a >b

a>b>c

Evaluating logical expression

Logical operators and not and or makes logical expressions. If an expression contains both arithmetic and logical operators' arithmetic operators are executed first then logical operator applied.

In case of relational operators, relational operators will be executed first when logical operators are applied

Examples

a>b and b>c

a=not(b)

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