Python

Data types, operators & operator precedence

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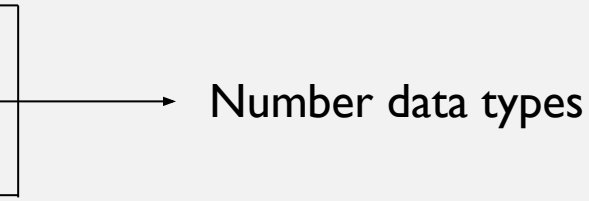
DATA TYPES

- Integers
- Floating points
- complex number
- strings
- Booleans (True/False)
- Inbuilt methods
- List, tuple, dictionary



Number Data-types

- Python supports integers, floating point numbers and complex numbers. They are defined as int, float and complex class in Python.
- Integers and floating points are separated by the presence or absence of a decimal point. 5 is integer whereas 5.0 is a floating point number.
- Complex numbers are written in the form, x + yj, where x is the real part and y is the imaginary part.
- We can use the type() function to know which class a variable or a value belongs to and isinstance() function to check if it belongs to a particular class.
- While integers can be of any length, a floating point number is accurate only up to 15 decimal places (the 16th place is inaccurate)

Strings

- Strings are created simply by enclosing characters in quotes.
- Python treats single quotes same as double quotes.
- Triple quotes are used to define multi-lines strings.
- Strings are immutable in python i.e., assignment operator can not be used.
- String concatenation is performed using '+' operator.
- (*) produces duplicate copies on the given string.
- Stings supports lot of built-in string methods.

Built-in methods

- dir(__builtins__) returns list of all existing built-in methods in python.
- Examples: print, input, len, sum,sorted, ord, chr, min, max, open,read,write
- print(ord('a')). ## returns ascii value of a character
- Print(chr(ord('a')) ## returns character from ascii value

OPERATORS

- Arithmetic operators
- Comparison/relationship operators
- Logical operators
- Assignment operators
- Identity operators
- Membership operators

OPERATORS

Arithmetic operators: +,-,/,//,**,*,%

- works on number data types only
- try: take two integer inputs from users and display results using /,// operators

comparison operators: ==,!=,>,>=,<,<=

- returns either true or false (boolean)
  - try: take two integer inputs from users and display results using !=,== operators

Logical operators:

- and, or, not

operators

Assignment Operators

- =,+=,*=,-=,/=,%=,//=

Identity operator

- is, is not
- works on both scalar & vectors

Membership operators

- in, not in
- works only with iterables

Operators precedence

SR.NO.	OPERATOR	DESCRIPTION
1	**	Exponentiation (raise to the power)
2	~ + -	Complement, unary plus and minus (method names for the last two are +@ and -@)
3	* / % //	Multiply, divide, modulo and floor division
4	+ -	Addition and subtraction
5	>> <<	Right and left bitwise shift
6	&	Bitwise 'AND'
7	^ |	Bitwise exclusive `OR' and regular `OR'
8	<= < > >=	Comparison operators
9	<> == !=	Equality operators
10	= %= /= //= -= += *= **=	Assignment operators
11	is is not	Identity operators
12	in not in	Membership operators
13	not or and	Logical operators