

Course

[Complete Data Science, ML, DL, NLP]

Day 1

[Note]: Creating environment with python : `python -m venv myenv`
OR `conda create -p venv python==3.10 -y` `myenv\Scripts\activate`

Python

Syntax and Semantics → What the code is supposed to do when it runs.
Correct arrangement of words & symbols in a code

Basic Syntax rules in python

- ↳ Case sensitive (it is case-sensitive lang.)
- ↳ Indentation (uses it to define blocks of code)
- ↳ Comments (single line & multiline)
- ↳ Line continuation
(total = 1+2+3+1 # gives o/p: 21)
4+5+6
(use backslash to continue a statement to the next line)

Variables in python

- ↳ fundamental elements in programming
- ↳ used to store data that can be referenced & manipulated
- ↳ In python, they do not need to be explicitly declared
- ↳ Declaration happens automatically when you assign value to variable

Naming Conventions :

- 1) Should be descriptive
- 2) Must start with letter or _
- 3) contains letters, no.'s & underscores
- 4) Case sensitive
- 5) must not reserve word

→ Python is dynamically typed — type of variable is determined at runtime. It also allows type of a var. to change as the program executes.

Variable types : Int float str bool

Type checking : `type(var-name)`

Typecasting : Ex: `float(int(var-name))`

Data types in python

- Are a classification of data which tell the compiler or interpreter how the programmer intends to use the data.
- Data types ensures data is stored in an efficient way.
- They help in performing correct operations on data & can prevent errors & bugs in the program.

Basic data types : Integers, Floating pt. no's, strings, booleans

Advanced data types : Lists, Tuples, Sets, Dictionaries

Operators in python

Arithmetic : Addⁿ, subⁿ, Multiplicatⁿ, division, floor division, modulus, exponentiatⁿ

Comparison : equal to, not equal to, >, <, >=, <=

logical : And, Or, not

- Conditional Statements: if, else, elif, nested
- Loops in Python: for, while, nested loops
- Loop control statements: break, continue, pass