

NANO SCIENTIFIC RESEARCH CENTRE PVT.LTD

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python

PYTHON SYLLABUS

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1. Python
2. How to install python
3. Packages
4. How to install packages
5. Python 3
6. How to use Python
 - (a) The interpreter
 - (b) Scripting mode
7. Print statements
 - (a) Values and its types
8. Variables
9. Keywords
10. Operators
 - (a) Integers
 - (b) Float
 - (c) Boolean
11. Control statements
 - (a) If statements
 - (b) Indentation
 - (c) If-else statements
 - (d) For loops
 - (e) While loops
 - (f) Continue
 - (g) Break
 - (h) Pass

12. Functions

- (a) Simple examples
- (b) Def
- (c) Body

13. Return

14. How to call a function

15. Everything is an object

16. Scope

17. Functions within functions

18. Global keyword

19. Default arguments

20. More on default arguments

21. Doc string

22. Lambda functions

23. Data types

(a) String

- (1) Everything turned into a string!
- (2) String format
- (3) Split
- (4) Upper and Lower case
- (5) Join

(b) List

- (1) Accessing elements
- (2) Slicing & adding
- (3) Multiplication
- (4) Lists & mutable
- (5) Copying a list
- (6) Functions modify lists
- (7) Why does the list change, but variables do not
- (8) More control over list
- (9) Looping over elements
- (10) Map
- (11) Filter
- (12) List comprehensions
- (13) Implementing map using list comprehensions

(c) Tuples

- (1) Tuples are immutable
- (2) Packing & Unpacking
- (3) Functions with multiple return values

(d) Dictionaries

- (1) Defining a dictionary
- (2) No duplicate keys
- (3) Access
- (4) All keys, values or both
- (5) Small exercise

(e) Sets

- (1) Set comprehensions

24. Modules

- (a) Importing a module
- (b) Importing as
- (c) In case we only need some part of module
- (d) Import all from module
- (e) Writing your own modules
- (f) Only running code when main file

25. File input & output (I/O)

- (a) The file object
- (b) Opening a file
- (c) with open () as f
- (d) Reading files
- (e) Writing a file
- (f) More writing examples

26. Classes

- (a) Defining our own objects
- (b) OOps
- (c) Simplest examples
- (d) Initializing an object
- (e) Self
- (f) Another examples
- (g) Class attributes
- (h) Inheritance
- (i) Base methods
- (j) Examples :-
 - (1) Implementing rational numbers
 - (2) GCD

- (k) Representing your class: operator overloading
 - (1) Adding two rational
 - (2) Comparing
- (l) more on operator overloading

27. Generator & iterators

28. Exception handling

- (a) Exception handling
- (b) A naked except
- (c) Try except else
- (d) Raise
- (e) Finally



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