



The Python Language

1. Introduction to Python

- What is Python
- The application areas of Python
- Download and install Python
- Execute Python program from command prompt and using IDLE
- Save programs with .py extension and execute it from prompt

2. Python Basics

- Data types and variables
- Operators and operator precedence
- Data type conversions
- Command line argument
- Data input
- Comments
- Import modules

3. Python Flow Control

- If statement
- If.. elif.. else statement
- While loop
- For loop
- Break & continue
- Else clause

4. Introduction to Python IDE – PyCharm



5. Python Sequences

- Range
- String
- List
- Tuple
- Dictionary
- Set

6. Shallow and deep copy

7. Functions and modules

- What is function
- Define a function
- Pass arguments
- Arguments with default values
- Arbitrary arguments
- Local and global variables
- Return a value from function
- Return multiple values
- Documentation Strings

8. Python built in functions

- Mathematical functions
- Random number functions
- Mathematical constants

9. Python Modules

- What is module?
- Import module using import statement
- Use from... import statement
- Use from ... import* statement
- Location modules
- PYTHONPATH variable
- Namespaces and scoping
- Dir(), globals(), locals() and reload()

10. File Handling

- Reading
- Writing
- File manipulations
- Directories

11. Exception Handling

- What is exception?
- Python built-in exceptions
- Try
- Except
- Finally
- Raise exceptions
- User defined exception
- Assertions

12. Python classes and objects

- Class definition
- Creating objects
- Constructors
- Accessing attributes
- Built-in class attributes
- Destructors
- Inheritance
- Overriding
- Overloading
- Data hiding



13. Regular Expressions

- Match()
- Search()
- Search and replace
- Modifiers
- Patterns
- Character classes
- Repetitions

14. Database programming

- With SQLite
 - Installing SQLite browser
 - Creating database
 - CRUD operations

15. Python GUI Programming with Tkinter

- Widgets
- Geometry managers / layout managers
- Variable classes
- Events and binds

16. What is Django?

17. What is Data Analysis and machine learning?