

Python Core Topics

1. Basics of Python
 - Introduction
 - Features
 - Installation
2. Fundamentals
 - Identifiers
 - Variables
3. Data Types
 - Integers
 - Floats
 - Strings
 - Booleans
4. Keywords
5. Operators
 - Arithmetic operators
 - Comparison operators
 - Assignment Operators
 - Logical Operators
 - Bitwise Operators
 - Membership Operators
 - Identity Operators
6. Control Flow Statements
 - Conditional statements (if, elif, else)
 - Loops (for, while)
 - Break, continue and pass statements
7. Functions
 - Advantages of Functions
 - Defining and calling functions



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- Function parameters and return values
 - Recursion
 - Python Built-in Functions
 - Lambda Functions
8. Strings
- String manipulation and formatting
 - Common string methods
9. Python Data Structures
- List
 - Tuple
 - Set
 - Dictionary
10. Error Handling
- Handling exceptions with try, except, finally
 - Raising custom exceptions
11. Python Date Time
- Date Module
 - Time Module

Python Advanced Topics

1. Object-Oriented Programming (OOP)
- Classes and objects
 - Constructor
 - Methods
 - Inheritance
 - Polymorphism
 - Data Abstraction
 - Encapsulation
2. Modules
- Importing modules
 - Creating and using custom modules
3. Packages



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- Creating Packages
 - Importing Packages
4. File Handling
 - Reading and writing files
 - Using the open () function
 5. Iterators
 - Iterators
 - Iteration with for loops
 6. Decorators
 - First-Class Objects
 - Inner Functions
 - Python Decorators
 7. Database Connection
 - Working with MYSQL Database
 - Driver installation
 - Connect and access database
 - Execute Queries
 - Perform CRUD operations

Backend (Database) Development

1. MYSQL
 - Installation
 - Work Bench
 - Database Queries
 - Data Types
 - Table Queries
 - Constraints
 - SQL Commands
 - Joins
 - Stored Procedures



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Frontend (UI) Development

2. HTML

- HyperText
- Markup language
- Web Page
- HTML Tags
- Unclosed HTML Tags
- HTML Meta Tags
- HTML Text Tags
- HTML Link Tags
- HTML Image and Object Tags
- HTML List Tags
- HTML Table Tags
- HTML Form Tags
- HTML Scripting Tags
- HTML Attribute
- HTML Formatting
- HTML Heading
- HTML Paragraph
- HTML Table
- HTML Lists
- HTML Form

3. CSS

- External Style Sheet
- Inline Style
- CSS Colors
- CSS Backgrounds
- CSS Borders
- CSS Margins
- CSS Padding
- CSS Box Model
- CSS Text



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- CSS Fonts
- CSS Icons

4. Bootstrap

- Bootstrap 5
- Containers
- Colors
- Tables
- Images
- Jumbotron
- Alerts
- Buttons
- Spinners
- Pagination
- Cards
- Dropdowns
- Collapse
- Navs
- Navbars
- Carousel
- Modals

Python Frameworks

1. Flask

- What is Flask?
- Installation
- Flask First Application
- App routing
- URL binding
- HTTP methods
- Templates
- Static Files



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- Request Object
- Cookies
- Session
- File Uploading
- SQLite

2. Django

- What is Django?
- Installation
- Project creation
- Application creation
- Configure Application
- Running Project
- MVT
- Display Dynamic Message
- Display Customized Message
- View
- Multiple Views
- Multiple Applications in Project
- Defining URLs at Application level
- Template
- Template based application
- Jinja2 Syntax
- Send Data from View to Template
- Static Files
- Static Files with Template
- Model
- Model class
- Models with Database
- Configure database
- ORM
- Database connectivity
- Creation of Super user
- Admin interface



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- Faker module
- Model and Database with Custom Template
- Forms
- Model Forms
- Django Forms
- Form validation
- File upload
- CRUD Operations

3. REST API

- Django REST Framework
- HTTP Request Methods
- JSON
- Postman Client

4. FastAPI

- HTTP Request Methods
- JSON
- Postman Client



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