# ADVANCE PYTHON

# OOPS concepts

* **Introduction to OOPS programming**
* **OOPS principles**
* **Encapsulation**
* **Defining Classes**
* **Creating objects**
* **Class variables**
* **instance variables**
* **Parameters**
* **Local variables**
* **Defining methods**
* **Differences between functions and methods**
* **Instance method**
* **Static method**
* **Class method**
* **Difference static and class methods**
* **Constructors**
* **destructors**
* **Inheritance**
* **Types of inheritances**
* **Polymorphism (over loading & over riding)**
* **Super() statement**
* **Built in properties of class**
* **Inner classes**

## Exception Handling

* **Syntax Errors**
* **Runtime Errors**
* **What is BUG?**
* **What is Exception?**
* **Need of Exception handling**
* **Predefined Exceptions**
* **Predefined Exceptions Hierarchy**
* **try, except and finally clauses**
* **Named except block**
* **Default except block**
* **Handling Multiple Exceptions**
* **Nested try, except and finally blocks**
* **User defined Exceptions**
* **Raise, assert statements**

## File Handling

* **What is a file?**
* **Opening a file**
* **Reading data from a file**
* **Writing data to a file**
* **Closing a file**
* **Working with the methods of file object**
* **Replacing the content of file**
* **Working with Directories**
* **Handling IO Exceptions**

## Regular Expressions

* **Introduction to regular expression**
* **Simple character matches**
* **Special characters**
* **Character classes**
* **Quantifiers**
* **Forming regular expressions**
* **Matching at beginning or end**
* **Greedy matches**
* **Compiling regular expressions**
* **Grouping**
* **Match Objects**
* **Match(), Search() and sub() functions**
* **Matching versus searching**
* **Splitting a string**
* **Replacing text**
* **Flags**

## Database access

* **Introduction to RDBMS**
* **Cursor object**
* **Executing SQL queries**
* **Executing SQL queries with bind variables**
* **Execution of PL/SQL procedures and functions**
* **Installation of mysql database**
* **Creating databases in mysql**
* **Creating users and assigning privileges to the users in mysql**
* **Installation of mysql python modules**
* **Establishing connection with mysql**
* **Closing mysql database connections**
* **Execution of insert, update ,delete and select queries**
* **Handling db errors**

## Advanced Concepts

* **Python Iterator**
* **Python Generator**
* **Python Closure**
* **Python Decorators**
* **Python Property**
* **PIP**
* **Installation of external modules using PIP**
* **Working with csv, xml and json files**
* **Debugging using IDE**
* **Test cases implementations**

## Python Web Development

* **Introduction to web application**
* **Architecture of web application**
* **Introduction to DJANGO framework**
* **Introduction to FLASK framework**