# 1)oop - **OOP** stands for **Object-Oriented Programming**. It is a programming paradigm (a way of designing and organizing code) based on the concept of **"objects"**, which are instances of **classes**.

1- class : A blueprint for creating objects. It defines properties (attributes) and methods (functions).

2-An instance of a class.

**Encapsulation**

Wrapping data and methods into a single unit (class), and restricting direct access to some parts.

**Inheritance**

One class can inherit the properties and methods of another class.

**Polymorphism**

Different classes can have methods with the same name, and they can behave differently.

**Abstraction**

Hiding complex implementation details and showing only the necessary features.

# 2) **REST API** stands for **Representational State Transfer Application Programming Interface**

A **REST API** allows you to **send or receive data** between a client (like a website or mobile app) and a server (backend).

3) **NumPy** (Numerical Python) is a **Python library** used for **scientific computing**, especially for working with **arrays and numerical data**.

# 4) **Pandas** is a **Python library** used for **data analysis and manipulation**. It provides powerful tools to work with **structured data** like tables (rows and columns), very similar to Excel or SQL.

**5)SQL** stands for **Structured Query Language**.  
It is the **standard language** used to **store, retrieve, manage, and manipulate data** in **relational databases** (data stored in tables).

Create tables, Insert data, Read data, Update data, Delete data, Filter data, Sort data.

# 6) **MySQL** is a **popular database management system** (DBMS) that uses SQL. It allows you to **create and manage databases** easily and is widely used in web development, data storage, and backends.

# In short:

# **SQL** is the **language**.

# **MySQL** is the **software** (or tool) that runs databases using SQL.

# 7) **What is TensorFlow?**

# **TensorFlow** is an **open-source machine learning (ML) library** developed by **Google**. It is used to **build, train, and deploy machine learning and deep learning models**.

# **Simple Definition:**

# TensorFlow helps computers **learn patterns from data** using **neural networks**, and then **make predictions**—like recognizing images, translating text, or detecting spam emails.

# 8) **Keras** is a **high-level neural network API** written in Python. It runs **on top of deep learning frameworks** like **TensorFlow**, making it **easy to build and train deep learning models**.

# 9) **Scikit-learn** (also written as sklearn) is a **popular Python library** used for **machine learning**. It provides **simple and efficient tools** for building models to **classify, predict, and analyze data**.

# 10) **OpenCV** (Open Source Computer Vision Library) is a **free, open-source library** for **computer vision**, **image processing**, and **real-time video analysis**.

# It helps computers "see" and understand images and videos—just like human eyes, but using code.

**Git** is a **version control system** that helps you **track changes in your code** over time.  
It is mostly used for **collaborating** with others and managing code in **software development**.

**Google Colab** (Colaboratory) is a **free online platform** from Google where you can **write and run Python code** in your browser.

**Jupyter Notebook** is an **open-source tool** used to **write and run Python code** in chunks (cells), along with text, images, and plots.

**Linux** is an **open-source operating system** (like Windows or macOS) that is:

* Free to use
* Very stable and secure
* Widely used in **servers**, **cloud platforms**, and **development**

**API stands for Application Programming Interface**

An **API Integration** means **connecting two or more software applications** using APIs so they can **communicate and share data**.

**2. What is SQL Query Optimization?**

**SQL Query Optimization** is the process of **writing efficient SQL queries** to make your database operations **faster and less resource-intensive**.