Types of APIs

1. **Web APIs:**
    a. APIs that are accessible over the web using HTTP/HTTPs protocols
    b. Allow applications to communicate over the internet.
    c. Data is usually shared in JSON/XML formats.
    d. Example:
        i. Fetching weather data from OpenWeather API
        ii. Embedding Google maps on a website
2. **Library API:**
    a. APIs provided by libraries or frameworks to expose specific functionality for developers.
    b. Allow developers to utilize predefined functions or methods without implementing them from scratch.
    c. Example:
        i. Numpy API: Provides functions for numerical computations.
        ii. Tensorflow API: Offers tools for building and training ML/DL models.
        iii. Matplotlib API: Allows creating visualizatioins programatically.
3. **Remote API:**
    a. APIs designed to interact with systems located on a different network or server, often over the internet.
    b. Web API is a subset of Remote API. All web APIs are remote APIs, but not all remote APIs are web APIs.
    c. Examples:
        i. Deploying virtual machines using AWS EC2 API.
        ii. Retrieving remote files stored in Google Drive through its API.
4. **Database API:**
    a. APIs that allow applications to interact with databases.
    b. Provides a structured way to perform CRUD operations on a database.
    c. Example:
        i. MySQL connector API
        ii. MongoDB API
        iii. Firebase real-time database API
5. **Hardware API:**
    a. APIs that enable software to interact with physical hardware devices.
    b. Provide an abstraction layer to control and retrieve data from devices without needing low-level programming
    c. Examples:
        i. GPU APIs like CUDA or OpenCL for performing parallel computations
        ii. APIs for IoT devices such as sensors or smart appliances
        iii. Using APIs to control drones or robots programatically.
6. **GUI API:**
    a. API designed for building and interacting with graphical user interfaces.
    b. Allow developers to create and manage GUI components programatically.
    c. Examples:
        i. Java Swing API

ii. Android SDK