## 1.1 MOBILE APPLICATION MODEL

- The biggest advance in **mobile phone development was the introduction of Java-hosted MIDlets.**
- MIDlets are executed on a **Java virtual Machine (JVM) a process that** abstract the **underlying hardware and lets developers create application that run** on the wide variety of devices that support the java virtual machine

**What is mobile application development?**

*Mobile application development is the set of processes and proceduresinvolved in writing software for small, wireless computing devices, such assmartphones and other hand-held devices.*

## TYPES OF MOBILE APPLICATION TECHNOLOGIES

- **Native applications.** These applications are built using **integrated development environments** (IDEs) and languages for mobile OS such as Apple iOS or Google Android.

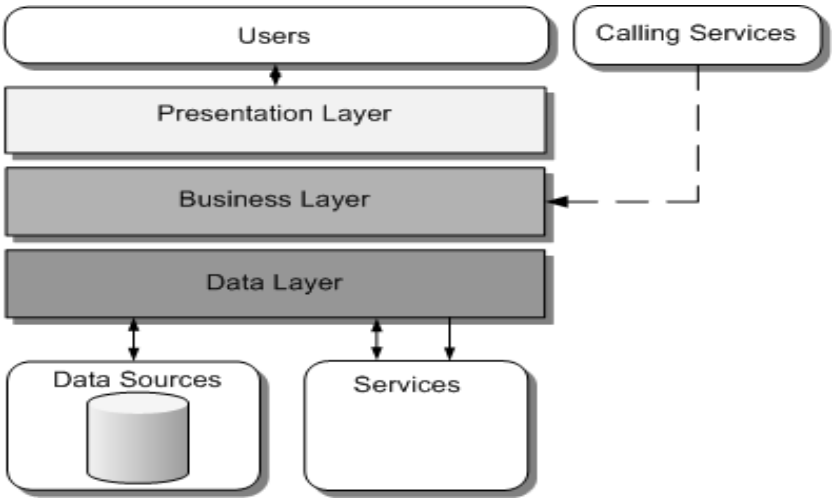
- **Hybrid apps.** These are web apps that act like native apps. They are developed using technologies such as **HTML, JavaScript and Cascading Style Sheets (CSS**). Hybrid apps are more **cost-effective to develop than native apps and can be created faster**, but they aren't as feature-rich as native applications.
- **Progressive web apps.** A **PWA is a website that looks and behaves as if it is a mobile app**. These applications are developed with web technologies such as Facebook React.

- **Encapsulated apps.** An **encapsulated app runs within a container app.** Products such as the Microsoft Power App drag-and-drop app creation tool enable less experienced developers to build a mobile application rapidly. But the lack of isolation from the core OS, OS lock-in and the relative newness could pose problems.

- **Frameworks and libraries.** We can use this reusable code written by someone else to accelerate your development of a mobile app.


**What is Mobile App Architecture?**

Application architecture is a set of technologies and models for the development of fully-structured mobile programs based on industry and vendor-specific standards.




Mobile app architecture design usually consists of multiple layers, including:

- **Presentation Layer** contain UI components as well as thecomponents processing them.
- **Business Layer** - *composed of workflows, business entities and components.*
- **Data layer** - *comprises data utilities, data access componentsand service agents.*

**THINGS TO CONSIDER BEFORE ATTEMPTING MOBILE APP**

## ARCHITECTURE DEVELOPMENT

- **Determine the device type**

There are different types of smartphones and it is important to evaluate the device type and its characteristics before choosing a specific app architecture.

- **Screen resolution**
- **Screen size**
- **CPU Features**
- **Storage Space**
- **Memory**
- **Availability of the development framework**

- **Presentation Layer**
  - The main focus of this layer is **how to present the app to the end user**. When designing it, app developers must determine the correct client type for the intended infrastructure. Client deployment restrictions should also be kept in mind.
  - This layer is **choosing the correct data format and using powerful data validation techniques** to protect your apps from invalid data entry.

- **Business layer**
  - **Caching, logging, authentication, exception management and security are all matters of concern**. According to our developers, you need to split tasks into different categories to reduce the complexity of this layer.
  - For complex rules, app policies, data transformations and validation, you must identify the set of demands separately for each of the categories.

- **Data Access Layer**
  - This layer complies with the app requirements **to facilitate secure data transactions**.
  - We must design this dimension so that it can be rescaled over time as business needs change.