IN3210: Mobile Applications Development

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Characteristics of Mobile Applications

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What are Mobile Applications ?

- **Definition:** Mobile applications, or apps, are software programs designed to run on mobile devices such as smartphones and tablets.

History of Mobile Applications

- Early Mobile Phones (1970s-1990s) The earliest mobile phones were primarily focused on voice communication.
- Personal Digital Assistants (PDAs) (1990s-2000s) : PDAs were the first to introduce the concept of "apps," though these were rudimentary and limited in scope.
- Introduction of the iPhone (2007): The launch of the first iPhone by Apple in 2007 was a game-changer in the mobile industry.
- Android OS Introduction (2008): Google launched the Android operating system in 2008, Originally called the Android Market, Google Play became the main distribution platform for Android apps, offering a wide variety of apps and media content.
- App Store Launch (2008): n 2008, Apple launched the App Store, a centralized platform where users could download and purchase third-party apps. This marked the beginning of the modern mobile app ecosystem, providing developers with a global marketplace.

Types of Mobile Applications

1. Native Apps

Native apps are specifically designed and developed for a particular operating system (OS), such as iOS or Android.

Technology Used: React Native, C++, Objective-C, Java, Python, Kotlin, and Swift.

2. Web Apps

Web apps behave similarly to native apps but are accessed via a web browser on your mobile device.

Technology Used:
HTML5,CSS,JavaScript,etc.

3. Hybrid Apps

Hybrid apps combine elements of both native and web apps. They are built using web technologies (HTML, CSS, JavaScript) but are wrapped in a native shell, allowing them to be deployed via app stores.

Characteristics of a good app

- **User Interface (UI) and User Experience (UX)**
  - Mobile apps should be easy to navigate, with a clean, straightforward interface to help users complete tasks efficiently.
- **Performance**
  - Users expect apps to load quickly.
  - Optimize the app to consume minimal CPU, memory, and storage space, ensuring it runs efficiently on a wide range of devices.

➢Security

- Ensure that sensitive data is encrypted both in transit and at rest to protect against unauthorized access.

➢Connectivity

- Enable the app to perform essential functions without an internet connection.

➢Cross Platform Compatibility

- Develop the app to be compatible with major operating systems like Android, iOS, and Windows.

➢Updates and Maintenance

- Regularly release updates to fix bugs, improve performance, and add new features based on user feedback.

A startup is deciding between developing a native app and a web app for a food delivery service.

Question:

Compare the characteristics of native apps and web apps in terms of performance, user experience, and device features. Based on the needs of a food delivery service, which option would be more appropriate and why?

Current Trends and Future Directions

- Artificial Intelligence (AI) and Machine Learning
- Augmented Reality (AR) and Virtual Reality (VR)
- 5G Connectivity
- Wearable Devices and IoT Integration

Thank you