Introduction to Mobile Computing:

Mobile computing is about using portable devices like smartphones, tablets, and laptops to access and share information while moving around. It allows us to do computing tasks in different places using wireless connections. Mobile computing is essential for staying connected and accessing information, apps, and services from anywhere.

Mobile Computing vs. Wireless Networking:

Mobile computing and wireless networking are closely related concepts, but they refer to different aspects of technology:

Mobile Computing: This encompasses the use of portable devices for computing tasks. It involves not only the hardware but also the software and applications that enable users to perform tasks such as browsing the internet, checking emails, using social media, and running various applications while on the move.

Wireless Networking: This refers to the technology that enables devices to communicate with each other without the need for physical wired connections. Wireless networking includes technologies like Wi-Fi, cellular networks (3G, 4G, 5G), Bluetooth, and NFC (Near Field Communication).

Mobile Computing Applications:

Mobile computing has a wide range of applications across various domains, including:

1. Communication: Mobile devices allow users to make calls, send text messages, and use various messaging apps to stay connected with friends, family, and colleagues.

2. Information Access: Users can access the internet to search for information, read news, watch videos, and engage with online content.
3. Navigation and Location-Based Services: Mobile devices utilize GPS (Global Positioning System) to provide navigation assistance, location-based recommendations, and services like ride-sharing apps.
4. Social Media: Mobile devices are commonly used to access and interact with social media platforms, enabling users to share updates, photos, and videos.
5. Entertainment: Users can play games, watch movies, listen to music, and read books on their mobile devices.
6. Productivity: Mobile apps enable users to manage tasks, schedules, emails, and documents, enhancing productivity on the go.
7. E-Commerce: Mobile devices facilitate online shopping and payment transactions through e-commerce apps.
8. Healthcare: Mobile apps can monitor health metrics, provide medication reminders, and offer telemedicine services.

Characteristics of Mobile Computing:

1. Portability: Devices are small, lightweight, and portable, enabling users to carry them wherever they go.
2. Wireless Connectivity: Mobile devices use wireless networks to connect to the internet and other devices.
3. Context Awareness: Mobile devices can gather information about their surroundings, such as location, to provide context-aware services.
4. Limited Resources: Mobile devices have limitations in terms of processing power, memory, and battery life compared to desktop computers.
5. Variety of Platforms: Mobile apps run on various operating systems (iOS, Android, etc.),

necessitating platform-specific development.
6. Intermittent Connectivity: Mobile devices can experience varying levels of network connectivity, including areas with weak or no signal.

Structure of Mobile Computing Applications:

Mobile computing applications typically have a multi-layer structure:

1. Presentation Layer: This is the user interface of the application, where users interact with the app through screens, buttons, and menus.
2. Application Logic Layer: This layer contains the core functionality of the app, handling user inputs, processing data, and executing business logic.
3. Data Management Layer: This layer deals with data storage, retrieval, and management. It may involve local storage on the device or interaction with remote servers.
4. Communication Layer: Mobile apps often communicate with external services or servers over the internet. This layer manages data exchange between the app and remote resources.
5. Device Hardware Layer: This layer interacts with the device's hardware components, such as sensors, GPS, camera, and other peripherals.
6. Operating System Layer: Mobile apps run on specific operating systems (e.g., Android, iOS), and this layer provides the necessary runtime environment for the app to function.

Related posts:

1. Mobile Computing | DAVV Unit 2
2. Mobile Computing | DAVV Unit 3

3. Mobile Computing | DAVV Unit 5
4. Mobile Computing | DAVV Unit 4
5. Introduction to Mobile Computing
6. MAC Protocols
7. Wireless MAC Issues
8. Fixed Assignment Schemes
9. Random Assignment Schemes
10. Reservation Based Schemes
11. Mobile Internet Protocol & Transport Layer
12. Mobile IP
13. Route Optimization Mobile IP
14. TCP/IP
15. Mobile Telecommunication System
16. Global System for MobileCommunication (GSM)
17. General Packet Radio Service (GPRS)
18. Universal Mobile Telecommunication System (UMTS)
19. Mobile Device Operating Systems
20. Software Development Kit fo Mobile OS
21. Mobile Commerce
22. Mobile Payment System
23. Mobile Ad Hoc Network
24. What are the pros and cons and limitations of Wireless Communication Mobilesystem as compared to Wired Communication system?
25. Explain the design goals of a MAC protocol for adhoc wireless network.
26. Explain the different design issues for Wireless MAC protocol with certain ex- amples.
27. Explain the basic concept of Multiple Access Schemes? Explain with brief com- parison FDMA, TDMA with suitable example?

28. How does slotted ALOHA improve throughput as compared with pure ALOHA? Explain.