

Final Exam, Course: - Mobile Computing

Deadline: - Mentioned on SIC

Marks: - 50

Program: - BS (CS), BS-SE

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Class and Section:8th semester section A

Q1: Provide the names of 4 challenges that exist in Adhoc Networks. (4)

Ans: ADHOC Networks.

An ad hoc network is a network that is composed of individual devices communicating with each other directly. The term implies spontaneous or impromptu construction because these networks often bypass the gatekeeping hardware or central access point such as a router.

NAMES OF 4 CHALLENGES.

- A) infrastructure-less design
- B) dynamic topology
- C) scalability
- D) energy constraints

Q2: How the nodes in the Adhoc Network know about the changing network topology. (2)

ANS. Each node maintain routing table having information about network topology. The routing tables updates periodically when network topology changes.

Q3: Why is it important to minimize flooding of control packets in Adhoc Networks and how MPR achieves it? (4)

ANS:

This factor if not will controlled can lead to increasing packet's loss the objective of MPR is to reducing the number of MPR achieves it by multypoint relay minimazes the flooding of packet's in the networks by reducing duplicate transmission to the same region.

Q4: Explain briefly how Mobile Cloud Computing is different than simple mobile computing and simple cloud computing? (4)

ANS: Mobile Cloud Computing.

Mobile cloud computing is a new platform combining the mobile devices and cloud computing to create a new infrastructure, whereby cloud performs the heavy lifting of computing-intensive tasks and storing massive amounts of data.
DIFFERENCES b/ w simple mobile and cloud computing.

Mobile computing is a consumer or user facing technology while cloud computing is a business or company facing technology. Cloud computing is aimed at enterprise. Both cloud computing and mobile computing use wireless service to transmit data.

Q5: Explain the term MBaaS in your own words? (4)

ANS: MBaaS

MBaaS stands for Mobile Backend as a Service. In simple words, it is a model that provides web app and mobile app developers a way to link their app to the backend cloud storage. (cloud storage is a data storage model that stores digital data in logical pool.)

Q6: Imaging you visit a completely new city. What kind of services a modern LBS can provide you at your location automatically?

ANS:

Location based service or LBS is the capability to find the geographical location of the mobile user and then provide services based on this location information. ... So in finding the location global positioning system (GPS) plays a major role.

Q7: Use your imagination as to how the following context can be used by a context aware application in mobile computing environment? (8)

Date/Time

Environment

Emotional state

Focus of attention

Orientation

User preferences

Calendar (events)

Browsing history

ANS:

Date/Time:-

Context date and time should be use by the user they are automatically update on the bases of GMT where they are located in different countries they have different time.

Environment:-

Environment is dependent on technology for activity logs in mobile computing environment changes without user intervention.

Emotional state:-

Emotions in general can overwhelm the human body, which responds through various signals that are manifested in physical and physiological forms. Physical responses include facial expressions, voice intonation, gestures, and movements, whereas physiological response indicators relate to respiration, pulse rate, skin conductance, body temperature, and blood pressure

Focus of attention:-

This context we should need to provide and renew the old version with latest updated

Version to remove unlike feature or make them more efficient in the applications

Orientation:-

The context focus on the movement of phones like screen rotation.

User preferences:-

This context should be use to save user data to show that data in different activities of mobile application.

Calendar (events):-

This context is used by mobile applications even for events to get notification when that event is happen that is very helpful to remember the coming events or save the recent event for next year.

Browsing history:-

This context is used in mobile as well as desktop to access useful and recent information in less time or even access to bookmarks where we can save the important websites to access them easily.

Q8: Explain why energy efficiency is important in technologies like Bluetooth and ZigBEE?

ANS:

universal radio interface for wireless connectivity energy efficiency is important because it is use for data transmission over wireless network if that devices is not efficient the result of data transmission will not be accurate. Bluetooth has high speed low energy.

Q9: Explain briefly how you use RFID technology at INU on a daily basis when present on the campus? Do you use an active or passive tag? (4)

ANS: we will use RFID for item tracking at INU on daily basis when present on the campus. We will use active RFID for item tracking because it required low signal strength and high range then passive.

Q10: Explain how Wearable Computing can be employed in computer gaming? (5)

ANS:

Wearable computing can be employed in computer gaming through augmented reality which overlying virtual reality information on real world this reality enhance the senses.

Q11: What kind of facilities and technologies must be present in order to call you own home a Smart Home? (5)

ANS:

A smart home is not disparate smart devices and appliances, but ones that work together to create a remotely controllable network. All devices are controlled by a master home automation controller, often called a smart home hub. The smart home hub is a hardware device that acts as the central point of the smart home system and is able to sense, process data and communicate wirelessly. It combines all of the disparate apps into a single smart home app that can be controlled remotely by homeowners. Examples of smart home hubs include Amazon Echo, Google Home, Insteon Hub Pro, Samsung SmartThings and Wink Hub, among others.

Some smart home systems can be created from scratch, for example, using a Raspberry Pi or other prototyping board. Others can be purchased as a bundled smart home kit -- also known as a smart home platform -- that contains the pieces needed to start a home automation project.

In simple smart home scenarios, events can be timed or triggered. Timed events are based on a clock, for example, lowering the blinds at 6:00 p.m., while triggered events depend on actions in the automated system; for example, when the owner's smartphone approaches the door, the smart lock unlocks and the smart lights go on.