
Final Exam, Course: - Mobile Computing

Deadline: - Mentioned on SIC

Marks: - 50

Program: - BS (CS), BS-SE

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

(4)

ANSWER

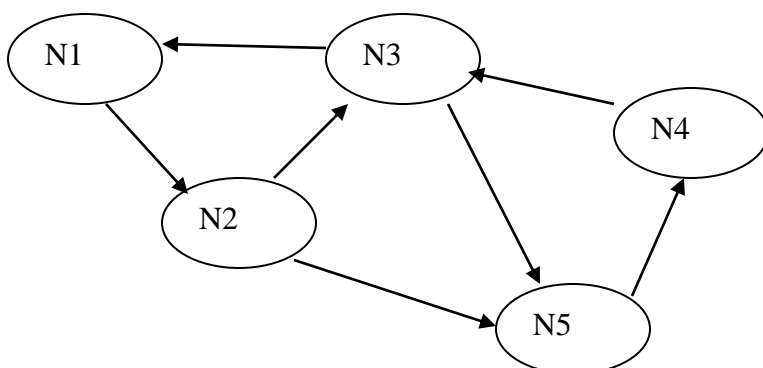
There are many challenges that exist in adhoc networks names of 4/four of them are follows,

1. Medium access scheme,
2. Routing and multi casting,
3. Transport layer protocol,
4. Pricing Scheme.

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

ANSWER

It all depends on what routing information is exchanged; when and how routing information is exchanged, when and how routes are computed. There are different criteria for designing and classifying routing protocols for wireless unplanned networks



The above figure shows that the ad hoc network topology is asymmetric. Given source N1 wants to send a packet to N5, the way is N1-N2-N5. N5 receives the packet and want to send an acknowledgement. Obviously N5 has information, which path N1 used. But the figure above shows, that there is no way to N1. This problem occurs in the ad hoc networks.

The nodes can join or leave the networks anytime. This action causes the nodes to alter or change their routing table.

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

ANSWER

This factor well controlled can lead to increasing packets loss the objective of MPR is to reduce the number of flooding MPR achieves it by multipoint rely minimize the flooding of packets in the network by reducing duplicate transmission in the same region

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

ANSWER

Cloud computing use distributed networks to process data while mobile computing the user can access the internet using browsers and transfer different kinds of data use satellites moreover each point is described below,

MOBILE CLOUD COMPUTING;

Mobile cloud computing is the latest innovation that people use globally , it is combination of mobile computing ,cloud computing and wireless networks bring rich computing resources to mobile users. Cloud computing providers and network operators moreover it can enable rich mobile applications across a large number of mobile devices with rich user experience. Although there are some challenges experience by mobile cloud computing such as architecture design, security, trust and privacy issue

MOBILE COMPUTING

Mobile computing is a set of IT technologies, products, services operation strategies and procedures that enable end users to gain access to computation information and related resources and capabilities with mobile, .Mobile most commonly refers to access in motion and is therefore unrestricted to a given geographic location .Mobile may also however refer

to access in a fixed location through equipment that users can relocate as required but is stationary while in operation

CLOUD COMPUTING

Cloud computing is a type of computing service which provide various types of functions like storage, database server networking etc through the internet an individual can connect to the cloud and make use of the all these services. There are companies who offer cloud services and they are called cloud service providers who charge cloud related services based on what type of service you have selected.

Q5: Explain the term MBaaS in your own words?

(4)

ANSWER

MBaaS stands for *MOBILE BACKEND AS A SERVICE*. It is a development model that is based on cloud technology. It allows you to outsource all of the behind the scene components of your web or mobile application so that you just need to write and maintain the front end. That can save you and your business a great amount time and money when you are developing an app.

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

(6)

ANSWER

In a completely new city LBS allows the consumer to receive services based on their geographic information about restaurants, retails stores, hospitals, and travel arrangements and such services can be provided in response to the customer manual input of his/her location to track the location of the customer automatically.

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

ANSWER

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?

ANSWER

Energy efficiency is important in technologies like Bluetooth and zigBEE because if they are not energy efficient the data transmission will not be accurate and for accurate and faster data transmission it is important for technologies like Bluetooth and zigbee to be energy efficient

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)

ANSWER

On daily basis we use the RFID technology at our university for multiple purposes that is getting entry in the university, marking our attendance, checking our classes and the offered subjects, subject teacher, offering new courses and many more and we are using passive tag.

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

ANSWER

WEARABLE COMPUTING:

Wearable computer refers to a computer powered devices or equipments that can be worn on body including smart watches, gaming devices and even clothing that can carry out computing capabilities. In this age of technology there is exceptional opportunity for game developers to build apps designed for wearable devices that will provide highly sophisticated gaming experience some of wearable computing devices that are being employed in computer gaming are as follows,

MYO gaming armband that slips round your arm that helps you achieve the goal in computer gaming by the gestures that you make while playing the game on your computer device

VUZIZ IWEAR is another wearable computer device that can be connected to tablets, gaming computer that can help you enjoy 2D and 3D gaming experience.

SUBPAC is another but not the least wearable computer gaming device that helps feel and experience the audio more clearly and it will feel like you are in that place.

There are many wearable computing devices which are useable in computer gaming and other fields of life and soon it will change the world.

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

ANSWER

A smart home refers to a convenient home setup where appliances and devices can be automatically controlled remotely from anywhere through internet using mobile or other networked devices. Devices in smart home are interconnected through internet allow the user to control function such as security, temperature, lighting etc,

Following are the 10 points that can turn your home into a smart home,

1. Smart door bells
2. Smart locks

3. Indoor and outdoor cameras
4. Smart thermostats
5. Smart outlets
6. LED light bulbs
7. Smart smoke and carbon monoxide detectors
8. Robot vacuums
9. Personal assistance
10. Smart kitchens.

All these technological accessories for smart home are available which is pretty expensive and easy to install in your home to turn it into smart home.