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## Final Exam, Course: - Mobile Computing

Program: - BS (CS), BS-SE

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

Answer: The following is four challenges in adhoc network:

**(1): Medium access scheme:**

- MAC is responsible for using the shared distribution method;
- performance depends on the MAC protocol (e.g. Token Ring vs. Ethernet).

**(2): Transport layer protocol:**

There are following the main functionality of the protocol based protocol:

- establishing and maintaining final communications;
- reliable delivery of end-to-end data packets;
- managing a;

**(3): Security;**

What makes ad hoc vulnerable to attack:

- Lack of internal communication;
- Shared with wireless medium.

**(4): Scale:**

- contain a limited number of locations.
  - may not be good examples of ad hoc work
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**Q2: How the nodes in the Adhoc Network know about the changing network topology.**

Wireless ad hoc network (WANET) or ad hoc network (MANET) is a separate type of wireless network. Network is pointless because it does not rely on existing infrastructure, such as routers on wireless networks or access points (infrastructure) Wireless networks Instead, each node contributes to data transmission in other areas, so the determination of forwarding node data is made more robust on the basis of connectivity. of the network and the routing algorithm used.

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

Answer:

MRP also proposed a smart mobility management system to handle multicast mesh. In other words, the recipient compares the options and decides which one is best. The source is informed of this fact by a future route. This smart system can maintain and operate multicast mesh by looking at = Incest traffic and learning about computer environments. Because of this, the regulatory message due to floods can be significantly reduced. By using such a technique, 10D-MRP cm ensures that there is always a way (frequency is normal) between multiple senders and receivers. It is shown in [Wang2001] that 10D-MRP frequency can provide better results than cAMP.

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

**Answer:** ICloud computer simply means storing and accessing data over the Internet instead of storing it on a computer's hard drive. When we store our data on a hard drive it is called local computing.

Mobile Computing on the other hand is a technology that allows the transfer of data, voice and video through a computer or other wireless device without being connected to a physical interface.

Mobile computing is a consumer or consumer facing technology while cloud computing is a business or technology company. Cloud computing targets business.

Both cloud computing and laptop computing use a wireless service to transmit data.

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**Q5: Explain the term MBaaS in your own words?**

**Answer (in own words):** The app contains front end and front end. The front end is on the user's device and has everything to do with it. The back end is where magic happens, this is where processes and ideas are made, data is stored etc.

We can compare an app with a restaurant, saying that the waiter / waitress and menu are actually the only app. They interact with the user / customer, take their orders and transfer them back-end, or in this case, the kitchen. The kitchen and restaurant managers are actually just the front end, where the food is taken and stored and prepared by the customer.

After that the back end transmits that data to the user through the front end, such as the kitchen notifying the waitress that the food is ready to be delivered to the appropriate table.

With that comparison in mind, MBaaS is compared to France. Instead of doing everything yourself, they offer the essentials to get you started. MBaaS basically ensures that every app you build will come with these important app features, while allowing you to build things that make your app unique.

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

**Answer:**

when a person visits a completely new city the services offered by the Modren-based service will be travel software, social media, location-based advertising, and tracking systems. Includes personalized weather services and location-based games.

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**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:**

Context awareness is the ability of a system or system component to gather information about its environment at any given time and adapt behaviors accordingly. Contextual or context-aware computing uses software and hardware to automatically collect and analyze data to guide responses.

- Date/Time: by providing pushing notification/reminder of a daily used application.
- Environment: Show news and information about weather.
- Emotional state: assist us / helping in many programs .
- Focus of attention: featuring thing by mostly used(contacts, apps etc)
- Orientation: by guiding and helping the user to use.
- User preferences: by keeping tracks of user's preferences.
- Calendar (events): by showing reminders of an upcoming event.
- Browsing history: by showing news and ads related to search history.

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

**Answer:**

Energy efficiency is critical for high-end sensory devices with limited power sources, connected by a wireless sensor network (WSN). ... The reason could be the production of unnecessary communications or temporary transfer of data from IoT sensor devices to very short intervals.

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**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?**

**Answer:** UHF RFID students are positioned at the school entrance, on the stairs, and in the classroom door to find the exact position and identities of the students. All student connections create a network connection for the bus type controller. Analyze student presence by analyzing raw data collected by students. Attendants for each class will be sent to the teacher's cellphone in real time to receive a check.

As new technologies for rapid, real-time and accurate detection and information processing, electronic radio frequency (RFID) tags, such as improvements and additions to traditional vehicle control systems, meet the needs of modern automotive management. The inserted car tag is included with a car or compass "card", and the RFID bursary is installed in the car's driveway or parking area.

The level of information and design of digital campuses is an important indicator for measuring the overall effectiveness of school management, scientific research and implementation, and is an important element that reflects the core competitiveness of the school. Thus, the digital smart compass has become a habit of improving campus management. The use of Internet of Things technology can stimulate the development of a smart digital compass, and can effectively solve the problems experienced in the creation of traditional campuses, thus providing efficient and high-quality services for daily learning and the lives of teachers and students.

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**Q10: Explain how Wearable Computing can be employed in computer gaming?**

**Answer:**

There is a special opportunity for today's game developers to create apps designed for wearable devices that provide a gaming experience for users. It is well known that gaming apps designed for wearable devices have the ability to integrate built-in devices such as gyroscopic motion sensing and tracking to take advantage of the game's interactive feel.

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

**Answer:**

the following technologies must be compressed at home to call it smart home:

- Smart TVs connect to the Internet to access content through apps, such as in-demand video and music. Other smart TVs include voice recognition or touch.
- In addition to being able to be remotely controlled and customizable, smart lighting systems, such as Hue from Philips Lighting Holding B.V., can find when room occupants and adjust lighting as needed. Smart lightbulbs can also control themselves depending on daylight availability.
- sing open doors and open garage doors, users can grant or deny visitors access. Smart keys can also detect when residents are nearby and open doors for them.
- With smart security cameras, residents can monitor their homes when they are away or on vacation. Smart sensing sensors are also able to detect differences between occupants, visitors, pets and burglaries, and are able to notify authorities if any suspicious activity has been identified.
- Animal care can be done automatically with connected feeders. Households and grasses can be estimated by connected time methods

=====The End=====