

Assignment No. 1

Mobile computing

Ques 1 what do you mean by the mobile computing ? Explain

Ans Mobile computing is human-computer interaction in which a computer is expected to be transported during normal usage, which allows for transmission of data, voice and video. Mobile computing involves mobile communication, mobile hardware and mobile software. Communication issues includes ad hoc networks and infrastructure networks as well as communication properties, protocols data formats and concrete technologies.

Ques 2 what is the importance of mobile computing?

- Ques
- Portability : Facilitates movement of device(s) within the mobile computing environment.
 - Connectivity : Ability to continuously stay connected without being affected by movements of the connected nodes.
 - Social interactivity : Maintaining the connectivity to collaborate with other users, at least within the same environment.
 - Connectivity : This defines the quality of service (QoS) of the network connectivity.

Ques 3 Explain Security issue of mobile computing.

Ans

- Mobile computing has become increasingly important in mobile computing. It is of particular

concern as it relates to the security of information stored on the smartphone.

Mobile application might copy user data from these devices to a remote server without user's permission and often without the user's consent.

Ques. Explain various mobile computing devices.

Ans @ Portable Computer: A portable computer that can be easily moved from place to place.

(B) Personal digital Assistant (PDA): A PDA is small, usually pocket-sized, computer with limited functionality.

(C) Mobile PC: An ultra mobile PC is a full - featured, PDA - sized computer running a general - purpose operating system.

② Penlop :- Penlop is a computing device the size and shape of a pen. It functions as a writing utensil, MP3 player, language translator, digital storage device, and calculator.

Ques 1. Advantages and disadvantages of ad hoc network.

Ans 1. Advantages :-

- NO wiring
- Complexity of the deployment
- Allows Mobility
- Internet access
- very good security.

Ques 2. Disadvantages

- Predictable Topology
- Limited access to the wireless access point.

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Ques Explain the architecture of mobile computing.

Ans

Network centric mobile computing architecture uses three - tier architecture

1. Presentation Layer/ Tier
2. Application Layer/ Tier
3. Data Tier.

1. Presentation tier -

In three tier architecture the first layer is user interface or presentation layer/ tier.

2. Application tier -

The second tier is the process management or application tier. This tier is capable of accomodating hundreds of users.

3. Data tier:-

The third final tier is the database

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management or data tier. The data tier is used to store data needed by the application and acts as a repository for both temporary and permanent data.

Ques 7: Discuss about the evolution of mobile computing through telephony.

Ans 7:

Evolution of Telephony

1876 - first telephone system by alexander graham bell.

1892 - stronger switch installed on first automatic telephone exchange.

1960 - electronic switching system developed by AT & T

1962 - carrier systems went digital.

1980's - wireless telephony emerged.

Ques 8: Difference between wired and wireless transmission media.

Ans 8:

Wired

1. A wired network employs wires to link devices to the internet, such as laptops or desktop PCs.

2. faster transmission speed.

3. More secure & hence reliable.

4. Propagation/delay is low.

5. Devices must be hard-wired.

6. Less expensive

7. Hub, switch, etc devices are used.

Wireless

Wireless means "without wire" media that is made up of electromagnetic waves (EM waves) or infrared waves.

Slow transmission speed.

Less secure and hence less reliable.

Propagation delay is high.

Installation is quick.

More expensive

wireless routers, access points, etc. are used.

Ques:

Explain twisted pair cable, coaxial cable and optical fibre?

Ans:

Twisted Pair Cable: Wires are twisted together in pairs. Each pair would consist of a wire

used for the positive data signal and a wire used for the negative data signal.

⇒ There are two types of twisted pair cable:

- Shielded Twisted pair cable
- Unshielded Twisted pair cable.

Co-axial cable? It consists of two conductors.

The inner conductor of the coaxial cable is contained inside the insulator with the other conductor weaves around it providing a shield.

Optical fibre cable? It consists of thin glass fibre that can carry information at frequencies in the visible light of spectrum. Typical fibre cable consists of a very narrow strand of glass called cladding.

Ques 10 :- Explain Radio waves, microwave, infrared

Ans :-

• Radio waves -

The radio waves have

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frequency range from 3KHz to 16Hz. These waves are easy to generate and these can travel along long distances.

- **Microwaves-**

Microwaves are electromagnetic waves which have frequency range between 16Hz to 300 GHz. These can travel long distances. These are unidirectional in nature which means that they can only travel in straight line.

- **Infrared waves-**

Infrared waves are electromagnetic waves that have frequency range between 300GHz to 400GHz. These cannot travel along long distances. These waves are used for short range communication and they also use line-of-sight propagation.

Ques 11 what is Bluetooth and its architecture

Ans Bluetooth provides a way to connect and exchange information between devices like personal digital assistants, mobile phones, laptops, PCs, printers and digital cameras via a secure, globally unlicensed short range radio frequency.

Architecture of Bluetooth

Piconet + which consists of a master node and up to seven active slave nodes within a distance of 10 meters and 255 parked nodes.

A piconet : is centralized TDM system with the master controlling the clock and determining device gets to communicate in which time slot. Direct slave - slave communication is not possible.

Scatternet: Multiple piconet combined together to form one scatter net. A slave of a piconet can act in other piconet. A device cannot be master in two piconets.

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ANDROID

Ques:- what do you mean by Android and its features.

Ans:- Android is an operating system and programming platform developed by google for mobile phones and other mobile devices, such as tablets. Android was developed by the Open Handset Alliance (OHA), which is led by google. The android is a powerful operating system and it supports large number of application in Smartphones.

Features of Android :-

- (i) It is an open source and we can customize the OS based on our requirements.
- (ii) It supports a connectivity for GSM, CDMA, WIFI, NFC, Bluetooth etc.

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- (iii) By using WiFi technology, we can pair with other devices using apps.
- (iv) Android have a multiple APIs to support a location based services such as GPS.
- (v) We can performs all data storage related activities by using light weight database SQLite.
- (vi) It has a support for 2D/3D Graphics.

2. Explain android architectures and various activities of android.

The android is a operating system and is a stack of software components which is divided into five sections and four main layers that is -

- Linux kernel :- The android uses the powerful linux kernel and it supports wide range of hardware

- Libraries: On top of a Linux kernel there is a set of libraries including open source web browser such as webkit, library Libc. These libraries are used to play and record audio and video.
- Android runtime: The android runtime provides a key component called Dalvik virtual Machine which is a kind of Java virtual machine. It is specially designed and optimized for android. The Dalvik VM is the process virtual machine in the android operating system. It is a software that runs apps on android devices.
- Application Frame work: The application frame work layer provides many higher level services to applications such as windows manager, view system package manager, resource etc.

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Ques 3 Explain android SDK and virtual device Android SDK +

The Android SDK (Software Development Kit) is a set of development tools used to develop applications for Android platform. A Software Development Kit that enables developers to create applications for the Android platform.

The Android SDK includes the following:

- Required Libraries
- Debugger
- An Emulator
- Sample source code
- Tutorials for the Android.

Android virtual Device - An Android virtual Device (AVD) is an emulator configuration that allows developers to test the applications by simulating the real device capabilities. we can configure the AVD by specifying the hardware and software options.

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what do you mean by activity
and intents and its types? ii)

Ans

Activity:

An activity provides the window in which the app draws its UI. This window typically fills the screen, but may be smaller than the screen and float on top of the other windows. ou5

Intents: An intent is to perform an action on the screen. It is mostly used to start activity send broadcast receiver, start services and send message between two activities. ii)

Types of Intents:

There are two types of intents in intents:- iii)

i) Explicit intents specify the receiving activity by that activity's fully qualified class name.

ii) Implicit intents do not specify a specific activity or other component to receive the intent. Instead you declare a general action to perform in the intent.

Ques 5

Difference between SDK and JDK.

Ans

	SDK	JDK
i)	SDK stands for Software development kit.	if JDK stands for Software Development Kit.
ii)	It is a set of software or development tools to create an application or a program on any platform.	ii) It is a set of development tools that allows a programmer to write a program using Java language.
iii)	SDK Types:- Android SDK, iOS SDK, Java SDK etc.	iii) JDK Types:- Java 8, Java 11 etc.

i) Tools + Libraries, Sample Code, Supporting documentation etc.
ii) SDK Structure Independent

iv) Tools + Consists of the programming tools Selection Components.
v) JDK Structure Interdependent.

Ques 6 What are views? Explain components of views?

Ans views + A view usually draws something the user can see and interact with. Whereas a view group in an invisible container that defines the layout structure for view and other view group objects. A view is a superclass for all the UI components.

Following are some of the view Components:

- i) Text view: To add some text in your application.
- ii) Edit text: This is used when you want to take some input from the user.
- iii) Image view: To add some image in the application.
- iv) Progress Bar: To show the progress to something.
- v) Button: Button are used to trigger some action on the click of the button. It can be starting a new activity or something else.
- vi) Image Button: It is used to make a clickable image.
- vii) Check box: Checkbox used to select same options of many available options.
- viii) Date picker: To select some particular date.