

Mid Semester Assignment, Course: - Mobile Computing

Deadline: - Mentioned on SIC

Marks: - 30

Program: - BS (CS), BS-SE

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Question1: Explain why wired networks have higher bandwidth in comparison to mobile networks. (2)

Ans: As we know that wired networks have high bandwidth as compared to the mobile networks because wired networks use wires for connectivity and the speed of wired networks can arrive to 5 gigabit per second but the mobile networks reach to 1 gigabit per second. That why wired networks have high bandwidth as compared to mobile networks.

Question2: Explain the relation between miniaturization and portability. (3)

Ans: Miniaturization:

Creating new and significantly smaller mobile form factors that allowed the use of personal mobile devices while on the move.

Portability:

Reducing the size of hardware to enable the creation of computers that could be physically moved around relatively easily.

Miniaturization and Portability relation are that kind if we want to reduce the size of hardware it must be portable that is easily move from one place to another and it is also miniaturized that work like the big one.

Question3: Differentiate between convergence and divergence. (3)

Ans: Converges:

Integrating (combine) emerging types or similar things combine and make a structure.

Example: Mobile phone, Music players, Camera, Games.

Divergence:

Opposite approach to interaction design by promoting information appliances with specialized functionality rather than generalized ones.

It is a process in which a thing can diverges into two or more descendant object.

Example: Computer, Services.

Question4: Suppose you are given the task of designing an app for mobile devices which has the capabilities of text chat, recorded audio message, and live video conferencing. Explain which protocol out of UDP and TCP would you use for each type of service and why? (4)

Ans : For designing an app for mobile devices which has the capabilities of test chat, recorded audio message, and live video conferencing I will use TCP protocol because UDP protocol is not the best choice for sending of text messages because UDP packets are blocked by proxies and it not gives guarantee packets delivery. So TCP is best for that app in TCP for using chat we use SMTP protocol. UDP is faster than TCP & UDP is commonly used for video and audio calling and send video and audio messages.

Question5: Suppose you have the choice of using 2G, 3G, 4G, 5G, Wi-Fi and Satellite networks. Which of these technologies will you use in the following scenarios and why. (18)

a) A city wide network with voice, SMS services and Internet services good enough for ultra-high definition streaming and video conferencing.

Ans: 4G and 5G.

for city wide network we do not need 2G and 3G because they don't ultra-high definition streaming although we can still use conferencing on 3G. Wi-Fi isn't available everywhere as they are Only provided & Isp's satellite in this scenario Can't be use as they are generally used on national & global aspects.5G will be best option with speed of 10-30 Gbs bit it is still under developed.

b) A city wide network with only voice and SMS services.

Ans: 2G

As there is no data transfer or any internet service so 2G is the best one. Satellite is also used for communication purpose but on a higher level.

c) A city wide network with voice, SMS services and Internet services good enough for normal definition streaming and video conferencing.

Ans: 3G, 4G.

Both can provide good definition Streaming and video conferencing 4G as uses speed 100-300 Mbps Provides hd-streaming So 3G is best in this scenario.

d) A global scale network with voice, SMS and Internet services.

Ans: Satellite:

Satellite can transfer and received data from small satellite dish on earth and can communicate it with orbiting geostationary satellite at 23000 mile above earth. For global scale transmission, any we can't use any other technology except satellite. Satellites 120% a part can cover who earth.

e) A campus size network for information and resource sharing between 200 end devices.

Ans: Wi-Fi

Campus Size network can easily be shared through wi-fi

For example: In our university to accesses portals we are connect through university, wifi in order to access it. Information can be shared through sportal.

f) A city wide network with voice, SMS and basic Internet services.

Ans: 2G and 3G

2G can provide us with voice and sms Basic internet is both achievable 2G and 3G but 3G can also be used for more advanced internet applications. So 2G ideal in this scenario.