

CS2021 Assignment 3 Answers

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1 Questions on the History of Computers (in the PPT slides and in the lecture)

1. With reference to the lecture slides, what major inventions led to the realizations of the first, second, third and fourth generations of computers?

Answer: The major invention leading for the first generation of computer is vacuum tube. The major invention leading for the second generation of computer is semiconduction and then the transistor. The major invention leading for the third generation of computer is integrated circuit. The major invention leading for the fourth generation of computer is microprocessor.

2. State the evolution of the methods of controlling an operating system from the fifth to the seventh generation of computers.

Answer: From text-command (fifth generation), to GUI-command (sixth generation), to voice-command (seventh generation).

3. State the names of two conceptual models of computer which were proposed in the earlier 20th century.

Answers: Turing machine from Alan Turing, and the von Neumann machine from John von Neumann.

4. Today, almost all computers their architectures follow one of these conceptual models. Which one is it?

Answer: von Neumann machine.

2 Questions about the Course Content (and its listed contents) on the course homepage

1. In the history of computer, Steve Jobs had introduced at least four revolutionary products to the market. (Before the products were released, no similar product had been available on the market. After the products had been released, other firms followed the designs and developed similar products.) What are the four revolutionary products and how they changed the world?

Answer: (a) Apple computer is the world first personal computer which is affordable for many families. (b) Macintosh is the first computer in the world with GUI for controlling the operating system. (c) iTune is the first Internet platform with a disruptive business model for song selling. (c) iPhone is the first smartphone which integrates the function of a computer, a phone and an iPod together.

2. In this course, two programming languages will be taught. One is for making homepage and the other is for writing programs for solving problems like number sorting. What are these two program languages?

Answer: Hypertext Markup Language (HTML) and C Language.

3. In which period of time in the semester, these programming languages would be taught?

Answer: In the second half of the semester.

4. Tentatively, how many assignments will be given to the students?

Answer: 12.

3 Questions on the Uses of Cell Phones

In a smartphone, there are options for setting the uses of the WiFi, Cellular data (Mobile data), Bluetooth and Hotspots. Suppose that you have subscribed from a local telecom firm the phone call (equivalently, voice) and the data services.

1. Can you use your phone to access the course homepage if your phone has the following settings – WiFi ON, Bluetooth ON, Cellular Data ON and Hotspots ON?

Answer: Yes, it can.

2. Can you use your phone to access the course homepage if your phone has the following settings – WiFi ON, Bluetooth ON, Cellular Data OFF and Hotspots OFF?

Answer: It depends. If (i) there is WiFi access point around and (ii) my phone has been authorized to connect to the access point, My cell phone can access the course homepage. Otherwise, it cannot.

3. Can you use your phone to access the course homepage if your phone has the following settings – WiFi OFF, Bluetooth OFF, Cellular Data OFF and Hotspots OFF?

Answer: No, it cannot.

4. Can you make a phone call if your phone has the following settings – WiFi OFF, Bluetooth OFF, Cellular Data OFF and Hotspots OFF?

Answer: If the Carrier option is ON, it can. Otherwise, it cannot.

5. Can you send a message to your friend if your phone has the following settings – WiFi OFF, Bluetooth OFF, Cellular Data OFF and Hotspots OFF?

Answer: No, it cannot.

6. Can you use the voice-to-text (equivalently, speech-to-text) function to type a message if your phone has the following settings – WiFi OFF, Bluetooth OFF, Cellular Data OFF and Hotspots OFF?

Answer: No, it cannot. To have the voice-to-text or the speech-to-text function, the phone needs to connect to the Internet.