Assignment-02

50-marks [20+10+10+10]

1. Giving reasons for your answer, suggest an appropriate structural model for the following systems:
    a. An automated ticket-issuing system used by passengers at a railway station

    b. A computer-controlled video conferencing system that allows video, audio and computer data to be visible to several participants at the same time

    c. A robot floor-cleaner that is intended to clean relatively clear spaces such as corridors. The cleaner must be able to sense walls and other obstructions.

    d. A petrol (gas) station is to be set up for fully automated operation. Drivers swipe their credit card through a reader connected to the pump; the card is verified by communication with a credit company computer; and a fuel limit is established. The driver may then take the fuel required. When fuel delivery is complete and the pump hose is returned to its holster, the driver's credit card account is debited with the cost of the fuel taken. The credit card is returned after debiting. If the card is invalid, the pump returns it before fuel is dispensed.

2. Your customer wants to develop a system for stock information where dealers can access information about companies and can evaluate various investment scenarios using a simulation system. Each dealer uses this simulation in a different way, according to his or her experience and tile type of stocks in question. Suggest a client-server architecture for this system that shows where functionality is located. Justify the client-server system model that you have chosen

3. Explain why the use of distributed objects with an object request broker simplifies the implementation of scalable client-server systems. Illustrate your answer with an example.

4. The development of service-oriented computing has been based on the early specification and adoption of standards. Discuss the general role of standardization in supporting and restricting competition and innovation in the software market.