Web Software

Sheet 1

1. Draw a sequence diagram for the following:
   1. Online customer can search book catalog, view description of a selected book, add book to shopping cart, do checkout.
   2. An emotion based music player:
      1. Firstly the application is opened by the user.
      2. The device then gets access to the web cam.
      3. The webcam captures the image of the user.
      4. The device uses algorithms to detect the face and predict the mood.
      5. It then requests database for dictionary of possible moods.
      6. The mood is retrieved from the database.
      7. The mood is displayed to the user.
      8. The music is requested from the database.
      9. The playlist is generated and finally shown to the user.
2. Draw a state diagram for the following:
   1. Describe one’s marital status.
   2. Describe the process of booking a set for some special event.
3. Draw a class diagram for the following:
   1. A company consists of departments. Departments are located in one or more offices. One office acts as headquarter. Each department has a manager who is recruited from the set of employees.
   2. A house may have any number of pets living in it. The two possible types of pets that can live in a house are dogs and cats. Each dog or cat has a name. An animal’s house is its one and only home. You can tell an animal to make noise and it will do its thing.
4. Draw an ERD for the following:
   1. A company specializes in IT training. The Company has 30 instructors and can handle up to 100 trainees per training session. The Company offers five advanced technology courses, each of which is taught by a teaching team of two or more instructors. Each instructor is assigned to a maximum of two teaching teams or may be assigned to do research. Each trainee undertakes one advanced technology course per training session.
   2. The video rental company has several branches throughout the USA. The data held on each branch is the branch address and the telephone number. Each branch is given a branch number, which is unique throughout the company. Each branch is allocated staff which includes a Manager. The data held on a member of staff is his or her name, position, and salary. Each member of staff is given a staff number, which is unique throughout the company. Each branch has a stock of videos. The data held on a video is the catalog number, title, status and cost. The catalog number uniquely identifies each video. Before hiring a video from the company, a customer must first register as a member of a local branch. The data held on a member is the first name, last name, and address. Each member is given a member number, which is unique throughout all branches of the company. Once registered, a member is free to rent videos.