(1)
HOSPITAL MANAGEMENT SYSTEM

Project Description:-

The Hospital Management System can help any hospital or healthcare facility by boosting productivity, lowering paperwork, and enhancing patient care. The Hospital Management System in C++ simplifies the process for hospitals and other healthcare organizations to manage medical records and appointments.

The Hospital has many branches. Each branch has basic information (**ID, Name, and Location**). The Hospital has many doctors. Each Doctor has basic information **(ID, Name, Specialization, and hospital branch).** The Hospital Also deals with many patients and each patient has basic information (**ID, Name, Address**, **and Appointment**). Create a C++ program using three singly Linked Lists to perform the following functions:

System Required Functions:-
1- For Hospital:-
a. Add new branch.
b. Display Branches.
c. Search for Branch by ID.
2- For Doctor:-
a. Add new doctor.
b. Remove a doctor.
c. Display all appointments.
3- For Patients:-
a. Add new patient.
b. Remove a patient.
c. Book Appointment.
d. Search for patient by Name.
Bonus:-
➢ Update patient Information.
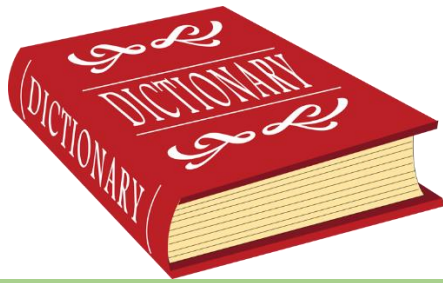➢ Remove Branch.
➢ Display all appointments in each branch.

Project Description:-

To make a basic music player using the knowledge of various Data structures learnt as part of course CS201. The user will be able to create a playlist as part of a music streaming application. Create a C++ application using doubly linked list that allows the user to select to skip, backwards / forward, play a track, append, or go to the beginning of the list. Also, the user must allow modifying the playlist like add, delete and change the order of the playlist with the ability to search for any song in the playlist even by song title or singer name.

Bonus:
- ➢ Add GUI for this application.

Project Description:-

Create C++ GUI application using a singly linked list to represent a dictionary. You can insert new words in its order, each word accompanied with its meaning in Arabic. Also, you can search for a word or delete word.

➢ **A GUI is to add new word, search for a word or delete a word.**

(4)
BANK MANAGEMENT SYSTEM

Project Description:-

This project manages the bank activities. The bank has many branches. Each branch has basic information (**ID, Name, Manager**). The bank deals with many account holders and each holder may have many accounts. Each holder has basic information (**ID, Name, Address**, **Balance**). Create a C++ program using two singly Linked Lists to perform the following functions.

System Required Functions:-

1- For Branches:-

a. Add new branch.
b. Display Branch.
c. Search for Branch by ID.

2- For Account Holders:-
a. Add new holder.
b. Remove a holder.
c. Display holder data.
d. Search for holder by Name.
e. Update Holder Information.

Bonus:-
➢ Display holders of a branch ordered by their balances.
➢ Given a Branch id, display Holders in that Branch.
➢ Remove Branch.

Project Description:-

This project manages the Egyptian league competition between Egyptian teams. Each team contains many players. Each team has basic information (**ID, Name, President**). Each player has basic information (**ID, Name, Team, Position, age, salary**). Create a C++ program using two singly Linked Lists to perform the following functions.

System Required Functions:-

1- For Team:-

a. Add new team.
b. Display team.
c. Search for team by ID.

2- For Player:-

a. Add new player.
b. Remove a player.
c. Display player data.
d. Search for player by Name.
e. Update Team Information.

Bonus:-

➢ Display players of a team ordered by their salaries.
➢ Display teams ordered by the average ages of their players.
➢ Remove team.

(6)
STUDENTS PROGRAM

Project Description:-

Design, Develop and Implement a menu driven Program in C++ for the following operations on Singly Linked List (SLL) of Student Data with the fields: USN, Name, Branch, Sem, PhNo.

- ➤ Create a SLL of N Students Data by using front insertion.
- ➤ Display the status of SLL and count the number of nodes in it c.
- ➤ Perform Insertion and Deletion at End of SLL d. Perform Insertion and Deletion at Front of SLL.
- ➤ Exit.

(7)
EMPLOYEES PROGRAM

Design, Develop and Implement a menu driven Program in C++ for the following operations on Doubly Linked List (DLL) of Employee Data with the fields: SSN, Name, Dept, Designation, Salary, PhNo.

- ➤ Create a DLL of N Employees Data by using end insertion.
- ➤ Display the status of DLL and count the number of nodes in it
- ➤ Perform Insertion and Deletion at End of DLL d. Perform Insertion and Deletion at Front of DLL.
- ➤ Exit.

Project Guidelines

Project Objective:

- The project aims to improve theoretical, technical and practical skills of student in data structure course.

- You should implement the code by using Data Structure techniques you already studied in this course.

Project Delivery:

- ➢ Project and Project report will be delivered in the Practical Exam day.
- ➢ Upload your project (one of the team) on Moodle.
- ➢ No one is allowed to deliver the project at any other time except that time assigned for him for data structure exam.

Notes:
- ➢ The team consists of **3-5 Student max.**
- ➢ Each student must examine **in his class.**
- ➢ The project must be implemented by the team. It's forbidden to get anyone else's code. Anyone who'd do that *will be deprived from Practical Exam*.

Project Marks: 10 Marks