**Name : Sundas Ambreen**

**Class:BSCS-2**

**Sap ID:58822**

**Lab 11**

**Task 1:**

#include <iostream>

#include <string>

using namespace std;

struct Book {

string title;

string author;

int yearOfPublication;

int numberOfPages;

};

void inputBookInfo(Book &book) {

cout << "Enter the book title: ";

getline(cin, book.title);

cout << "Enter the author: ";

getline(cin, book.author);

cout << "Enter the year of publication: ";

cin >> book.yearOfPublication;

cout << "Enter the number of pages: ";

cin >> book.numberOfPages;

cin.ignore();

}

void displayBookInfo(const Book &book) {

cout << "\nBook Title: " << book.title << endl;

cout << "Author: " << book.author << endl;

cout << "Year of Publication: " << book.yearOfPublication << endl;

cout << "Number of Pages: " << book.numberOfPages << endl;

}

int main() {

const int NUM\_BOOKS = 5;

Book books[NUM\_BOOKS];

for (int i = 0; i < NUM\_BOOKS; ++i) {

cout << "\nEnter details for book " << i + 1 << ":" << endl;

inputBookInfo(books[i]);

cout << "\nDisplaying information of all books:" << endl;

displayBookInfo(books[i]);

}

return 0;

}

**Task 2:**

#include <iostream>

#include <string>

using namespace std;

struct User {

string name;

};

bool login(User &user) {

string enteredName;

cout << "Enter your username: ";

getline(cin, enteredName);

if (enteredName == user.name) {

return true;

} else {

return false;

}

}

int main() {

User user;

user.name = "Alina";

cout << "Welcome to the system!" << endl;

if (login(user)) {

cout << "Login successful. Welcome, " << user.name << "!" << endl;

} else {

cout << "Login failed. Please try again." << endl;

}

return 0;

}

**Task 3:**

#include <iostream>

#include <string>

using namespace std;

struct StudentGrading {

string name;

string SAPID;

string address;

string department;

float marks1;

float marks2;

float maxMarks;

};

void calculateMaxMarks(StudentGrading &student) {

student.maxMarks = (student.marks1 > student.marks2) ? student.marks1 : student.marks2;

}

void displayStudent(const StudentGrading &student) {

cout << "\nStudent Name: " << student.name

<< "\nSAP ID: " << student.SAPID

<< "\nAddress: " << student.address

<< "\nDepartment: " << student.department

<< "\nMarks for Subject 1: " << student.marks1

<< "\nMarks for Subject 2: " << student.marks2

<< "\nMaximum Marks: " << student.maxMarks

<< endl;

}

int main() {

const int NUM\_STUDENTS = 5;

StudentGrading students[NUM\_STUDENTS];

for (int i = 0; i < NUM\_STUDENTS; ++i) {

cout << "\nEnter details for student " << i + 1 << ":" << endl;

cout << "Name: ";

getline(cin, students[i].name);

cout << "SAP ID: ";

getline(cin, students[i].SAPID);

cout << "Address: ";

getline(cin, students[i].address);

cout << "Department: ";

getline(cin, students[i].department);

cout << "Marks for Subject 1: ";

cin >> students[i].marks1;

cout << "Marks for Subject 2: ";

cin >> students[i].marks2;

cin.ignore();

calculateMaxMarks(students[i]);

}

cout << "\nDisplaying details of all students:" << endl;

for (int i = 0; i < NUM\_STUDENTS; ++i) {

displayStudent(students[i]);

}

return 0;

}