CP Lab-13 Tasks

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Lab 13 Filing

Tasks: 01

Write a C++ that perform following task:

- Create a function Student() that prompt user to a student record. Student contains following details. ID, Full Name, Email, Department and Phone Number.
- Store the input in file student.txt in a proper format.
- In main program call function Student()
- Program should prompt user that you want to enter a new record. If 'Y' ask user for new details. If 'N', program should terminate. (Use event controlled loop)
- Print the data into the screen.
- Also read from file.

Code:

```
#include <iOStream>
#include <string>
#include <fstream>
using namespace std;

struct input {
	int id,number;
	string fullName, email, department;
}obj;

void student() {

	char choice;
	do {
		//Details input
		cout << "Enter the details of the student" << endl
			<< "====================================" << endl;
		cout << "Enter Student ID" << endl;
		cin >> obj.id;
		cout << "Enter Fullname of the student" << endl;
		cin.ignore();
		getline(cin, obj.fullName);
		cout << "Enter the email of the student " << endl;
		cin >> obj.email;
		cout << "Enter the Deparment of the student" << endl;
		cin >> obj.department;
		cout << "Enter the phone number of the student" << endl;
		cin >> obj.number;

		//storing data in file
		ofstream studentData;
		studentData.open("Student Data.txt");
		studentData <<"====================================="<<endl
			<<"Details of the student" << endl
			<<"====================================="<<endl
			<< "ID: " << obj.id<<endl
```

```
                << "Full name: " << obj.fullName<<endl
                << "E-mail: " << obj.email<<endl
                << "Department: " << obj.department<<endl
                << "Phone number: " << obj.number<<endl
                << "====================================="<<endl;
            studentData.close();

            //Printing the details on console
            cout << "=====================================" << endl
                << "Details of the student" << endl
                << "=====================================" << endl
                << "ID: " << obj.id << endl
                << "Full name: " << obj.fullName << endl
                << "E-mail: " << obj.email << endl
                << "Department: " << obj.department << endl
                << "Phone number: " << obj.number << endl
                << "=====================================" << endl;

            cout << "Do you want to enter a new record? " << endl
                <<"Press Y for yes and N for no"<<endl;


            cin >> choice;
        } while (choice == 'y' || choice == 'Y');


}

int main() {

        student();

        return 0;
}
```

Output (On console):

```
Enter the details of the student
=====================================
Enter Student ID
1400316
Enter Fullname of the student
Syed Muhammad Raza Ali
Enter the email of the student
asyedraza7@gmail.com
Enter the Deparment of the student
BSCS
Enter the phone number of the student
0210000000
=====================================
Details of the student
=====================================
ID: 1400316
Full name: Syed Muhammad Raza Ali
E-mail: asyedraza7@gmail.com
Department: BSCS
Phone number: 210000000
=====================================
Do you want to enter a new record?
Press Y for yes and N for no
n
```

Output (in file):

```
====================================
Details of the student
====================================
ID: 1400316
Full name: Syed Muhammad Raza Ali
E-mail: asyedraza7@gmail.com
Department: BSCS
Phone number: 210000000
====================================
```

Tasks: 02

Write a program which takes input of students (name, grade and marks) and stores it in a text file. The program will then ask a number from the user (between 0 to 50) and increments it in each student's grade in the file and displays it.

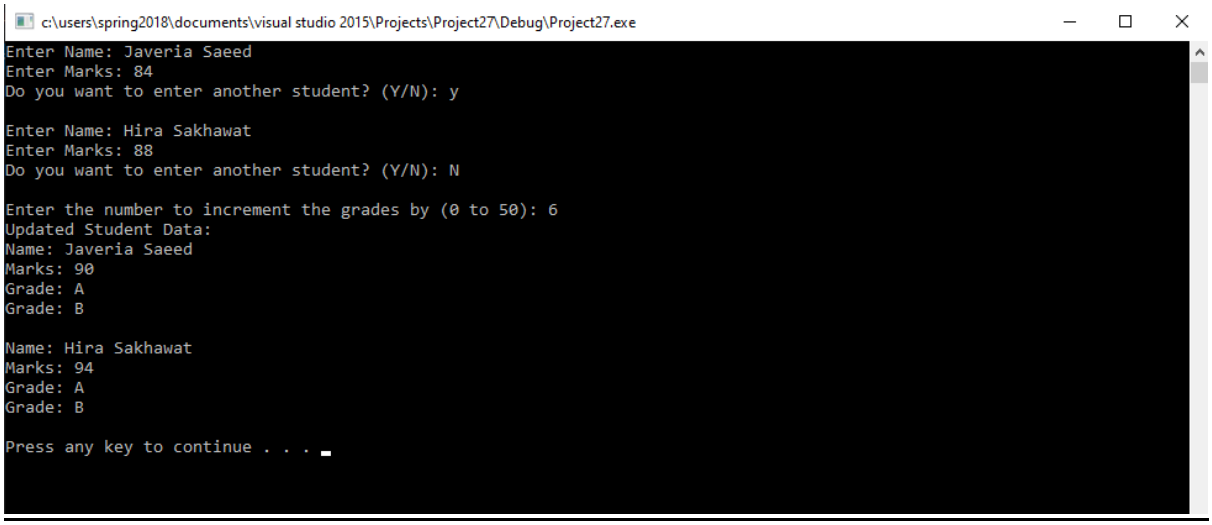
Code:

```
#include <iostream>
#include <fstream>
#include <string>

using namespace std;

struct Student {
string name;
string grade;
int marks;
};

string GetGrade(int marks) {
if (marks >= 90)
return "A";
else if (marks >= 80)
return "B";
else if (marks >= 70)
return "C";
else if (marks >= 60)
return "D";
else if (marks >= 50)
return "E";
else
return "F";
```

```
}

void PromptStudentData(Student& student) {
cout << "Enter Name: ";
getline(cin, student.name);

cout << "Enter Marks: ";
cin >> student.marks;
cin.ignore();

student.grade = GetGrade(student.marks);
}

void StoreStudentData(const Student& student) {
ofstream file("students.txt", ios::app);
if (file.is_open()) {
file << "Name: " << student.name << endl;
file << "Marks: " << student.marks << endl;
file << "Grade: " << student.grade << endl;
file << endl;
file.close();
}
else {
cout << "Unable to open the file." << endl;
}
}

void UpdateGrades(int increment) {
ifstream inputFile("students.txt");
ofstream outputFile("updated_students.txt");
if (inputFile.is_open() && outputFile.is_open()) {
string line;
while (getline(inputFile, line)) {
if (line.find("Marks: ") != string::npos) {
int marks = stoi(line.substr(7));
marks += increment;
outputFile << "Marks: " << marks << endl;
outputFile << "Grade: " << GetGrade(marks) << endl;
}
else {
outputFile << line << endl;
}
}
inputFile.close();
outputFile.close();
```

```
remove("students.txt");
rename("updated_students.txt", "students.txt");
}
else {
cout << "Unable to open the file." << endl;
}
}

void DisplayStudentData() {
ifstream file("students.txt");
if (file.is_open()) {
string line;
while (getline(file, line)) {
cout << line << endl;
}
file.close();
}
else {
cout << "Unable to open the file." << endl;
}
}

int main() {
char choice;
do {
Student student;

PromptStudentData(student);
StoreStudentData(student);

cout << "Do you want to enter another student? (Y/N): ";
cin >> choice;
cin.ignore();

cout << endl;
} while (choice == 'Y' || choice == 'y');

int increment;
cout << "Enter the number to increment the grades by (0 to 50): ";
cin >> increment;

UpdateGrades(increment);

cout << "Updated Student Data:" << endl;
DisplayStudentData();
system("pause");return 0;}
```

Output :



Tasks: 03

Write a program which takes a string as an input and stores it a text file. Then it checks if the string is in lowercase, then converts them into upper case. Display the end result in proper format.

Code:

```
#include <iostream>
#include <fstream>
#include <string>
#include <cctype>

using namespace std;

void StoreStringToFile(const string& text) {
	ofstream file("input.txt");
	if (file.is_open()) {
		file << text;
		file.close();
	}
	else {
		cout << "Unable to open the file." << endl;
	}
}

void ConvertToLowercase(ifstream& file) {
	ofstream outputFile("output.txt");
	if (outputFile.is_open()) {
		string line;
```

```
		while (getline(file, line)) {
			for (char& c : line) {
				if (islower(c)) {
					c = toupper(c);
				}
			}
			outputFile << line << endl;
		}
		outputFile.close();
	}
	else {
		cout << "Unable to open the output file." << endl;
	}
}

void DisplayOutput() {
	ifstream file("output.txt");
	if (file.is_open()) {
		string line;
		while (getline(file, line)) {
			cout << line << endl;
		}
		file.close();
	}
	else {
		cout << "Unable to open the file." << endl;
	}
}

int main() {
	string input;
	cout << "Enter a string: ";
	getline(cin, input);

	StoreStringToFile(input);

	ifstream inputFile("input.txt");
	if (inputFile.is_open()) {
		ConvertToLowercase(inputFile);
		inputFile.close();
	}
	else {
		cout << "Unable to open the input file." << endl;
		return 1;
	}

	cout << "Resulting text in uppercase: " << endl;
	DisplayOutput();
	system("pause");
```

```
	return 0;
}
```

Output: