Green University of Bangladesh

Department of Computer Science and Engineering (CSE)
Faculty of Sciences and Engineering
Semester: Summer, 2022, B.Sc. in CSE (DAY)

Data Structure Lab

Course Code: CSE 106 **Section: CSE 213 - DA (PC)**

Project Title:

GUB STUDENT REPORT CARD

Student Details

Name	ID
Md. Shahidul Islam Prodhan	213902017

Submission Date: 11th September, 2022

Course Teacher's Name: Farhana Akhtar Sunny, Senior Lecturer

[For Teacher's use only: Don't write anything inside this box]

Lab Report Status

Marks:	**Signature:**
Comments:	**Date:**

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Chapter 1

Introduction

1. Introduction

GUB Student Report Card is a software solution for tracking and having a glance at a student's academic performance and result is specifically designed for educational instituitions, and its many features enable institution's efficient functioning on a daily basis. The computerization of the student result according to each semester will improve the efficiency and reduce human stress, and also indirectly improve the human recourses. This system helps the user to show subject-wise results and the percentage of students.

2. Design Goals/Objective

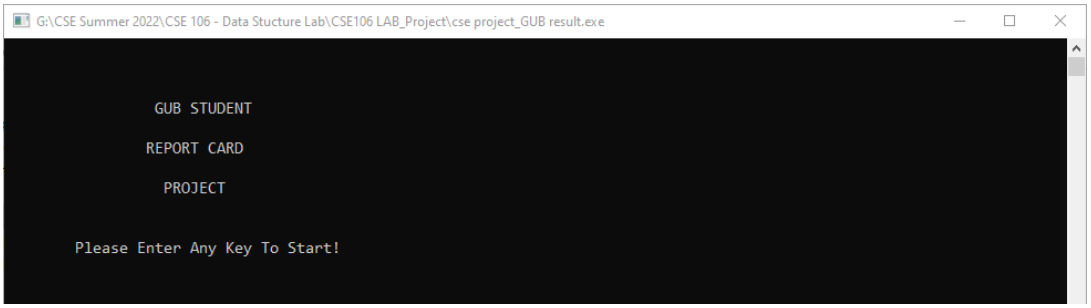
- The main focus of this project is to reduce time and lessen human efforts.
- To provide a user-friendly environment where a user can be serviced better easy.
- To gathers all the valuable student-related mark information on a single platform, enables quick retrieval of essential data, and filters their availability by the access level**.**
- To replace a complex net of educational bureaucracy and provide efficient communication channels on all levels.
- To keep all the mark related information organized and show them in a batter place, and reduce the chance of mistake.

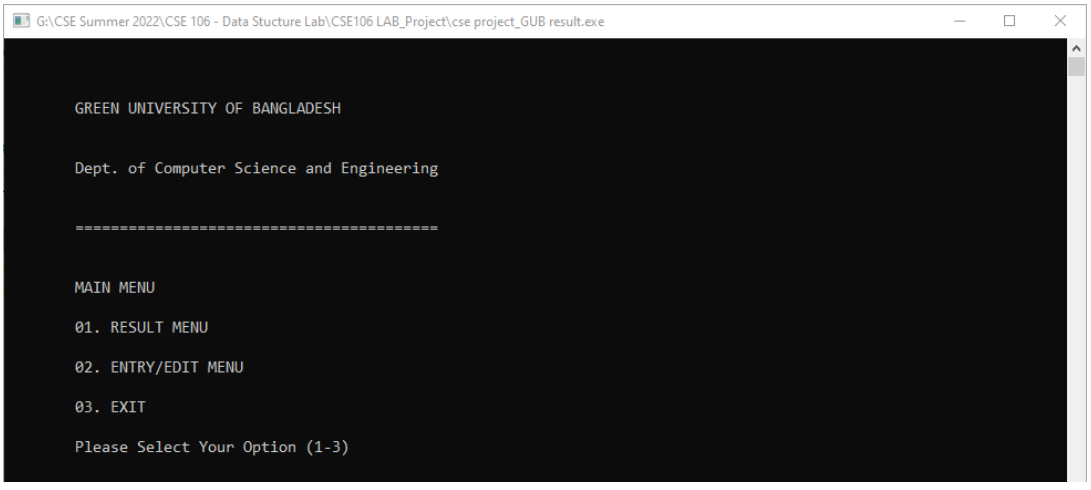
Chapter 2

1. Student Record System Design

GUB Student Report Card System I made using C program will be look like this.

1. Interface





3. Implementation of the Project:

- **Start of the code:**

[*] cse project_GUB result.cpp

```cpp
#include<iostream>
#include<fstream>
#include<iomanip>
//#include<stdlib. h>
#include <stdlib.h>
using namespace std;



class student
{
    int rollno;
    char name[50];
    int p_marks, c_marks, m_marks, e_marks, cs_marks;
    double per;
    char grade;
    void calculate();
public:
    void getdata();
    void showdata() const;
    void show_tabular() const;
    int retrollno() const;
};


void student::calculate()
{
    per=(p_marks+c_marks+m_marks+e_marks+cs_marks)/5.0;
    if(per>=60)
        grade='A';
    else if(per>=50)
        grade='B';
```

- **void student::calculate()**
- this will calculate the data

```cpp
void student::calculate()
{
    per=(p_marks+c_marks+m_marks+e_marks+cs_marks)/5.0;
    if(per>=60)
        grade='A';
    else if(per>=50)
        grade='B';
    else if(per>=33)
        grade='C';
    else
        grade='F';
}
```

- **void student::getdata()**
- this will get the data of the students from the user

```cpp
void student::getdata()
{
    cout<<"\nEnter The ID number of student:\t";
    cin>>rollno;
    cout<<"\n\nEnter The Name of student:\t";
    cin.ignore();
    cin.getline(name,50);
    cout<<"\nEnter The marks in Linear Algebra & Vector Analysis [MAT105] out of 100 : ";
    cin>>p_marks;
    cout<<"\nEnter The marks in Chemistry [CHE101] out of 100 : ";
    cin>>c_marks;
    cout<<"\nEnter The marks in Data Structure [CSE105] out of 100 : ";
    cin>>cs_marks;
    cout<<"\nEnter The marks in Data Structure Lab [CSE106] out of 100 : ";
    cin>>m_marks;
    cout<<"\nEnter The marks in English For Academic Purpose [EAP103] out of 100 : ";
    cin>>e_marks;

    calculate();
}
```

- **void student::showdata() const**
- This function is used for showing data.

```
60  void student::showdata() const
61  {
62      cout<<"\nRoll number of student : "<<rollno;
63      cout<<"\nName of student : "<<name;
64      cout<<"\nMarks in MAT105 : "<<p_marks;
65      cout<<"\nMarks in CHE101 : "<<c_marks;
66      cout<<"\nMarks in CSE105 :"<<cs_marks;
67      cout<<"\nMarks in CSE106 : "<<m_marks;
68      cout<<"\nMarks in EAP103 : "<<e_marks;
69
70      cout<<"\nPercentage of student is  :"<<per;
71      cout<<"\nGrade of student is :"<<grade;
72  }
```

```
74  void student::show_tabular() const
75  {
76      cout<<rollno<<setw(6)<<" "<<name<<setw(10)<<p_marks<<setw(4)<<c_marks<<setw(4)<<m_marks<<setw(4)
77          <<e_marks<<setw(4)<<cs_marks<<setw(8)<<per<<setw(6)<<grade<<endl;
78  }
79
80  int  student::retrollno() const
81  {
82      return rollno;
83  }
84
85  void write_student();
86  void display_all();
87  void display_sp(int);
88  void modify_student(int);
89  void delete_student(int);
90  void class_result();
91  void result();
92  void intro();
93  void entry_menu();
```

[*] cse project_GUB result.cpp

```cpp
void result();
void intro();
void entry_menu();


int main()
{
    char ch;
    cout.setf(ios::fixed|ios::showpoint);
    cout<<setprecision(2);
    intro();
    do
    {
        system("cls");
        cout<<"\n\n\n\tGREEN UNIVERSITY OF BANGLADESH";
        cout<<"\n\n\n\tDept. of Computer Science and Engineering";
        cout<<"\n\n\n\t=======================================";
        cout<<"\n\n\n\tMAIN MENU";
        cout<<"\n\n\t01. RESULT MENU";
        cout<<"\n\n\t02. ENTRY/EDIT MENU";
        cout<<"\n\n\t03. EXIT";
        cout<<"\n\n\tPlease Select Your Option (1-3) ";
        cin>>ch;
        switch(ch)
        {
            case '1': result();
                break;
            case '2': entry_menu();
                break;
            case '3':
                break;
            default :cout<<"\a";
```

[*] cse project_GUB result.cpp

```cpp
                break;
            default :cout<<"\a";
        }
    }while(ch!='3');
    return 0;
}


void write_student()
{
    student st;
    ofstream outFile;
    outFile.open("student.dat",ios::binary|ios::app);
    st.getdata();
    outFile.write(reinterpret_cast<char *> (&st), sizeof(student));
    outFile.close();
        cout<<"\n\nStudent record Has Been Created ";
    cin.ignore();
    cin.get();
}


void display_all()
{
    student st;
    ifstream inFile;
    inFile.open("student.dat",ios::binary);
    if(!inFile)
    {
        cout<<"File could not be open !! Press any Key...";
        cin.ignore();
```

[*] cse project_GUB result.cpp

```cpp
        cout<<"File could not be open !! Press any Key...";
        cin.ignore();
        cin.get();
        return;
    }
    cout<<"\n\n\n\t\tDISPLAY ALL RECORD !!!\n\n";
    while(inFile.read(reinterpret_cast<char *> (&st), sizeof(student)))
    {
        st.showdata();
        cout<<"\n\n====================================\n";
    }
    inFile.close();
    cin.ignore();
    cin.get();
}


void display_sp(int n)
{
    student st;
    ifstream inFile;
    inFile.open("student.dat",ios::binary);
    if(!inFile)
    {
        cout<<"File could not be open !! Press any Key...";
        cin.ignore();
        cin.get();
        return;
    }
    bool flag=false;
    while(inFile.read(reinterpret_cast<char *> (&st), sizeof(student)))
```

[*] cse project_GUB result.cpp

```
    bool flag=false;
    while(inFile.read(reinterpret_cast<char *> (&st), sizeof(student)))
    {
        if(st.retrollno()==n)
        {
            st.showdata();
            flag=true;
        }
    }
    inFile.close();
    if(flag==false)
        cout<<"\n\nRecord Does not exist";
    cin.ignore();
    cin.get();
}


void modify_student(int n)
{
    bool found=false;
    student st;
    fstream File;
    File.open("student.dat",ios::binary|ios::in|ios::out);
    if(!File)
    {
        cout<<"File could not be open !! Press any Key...";
        cin.ignore();
        cin.get();
        return;
    }
        while(!File.eof() && found==false)
```

[*] cse project_GUB result.cpp

```
    }
        while(!File.eof() && found==false)
    {

        File.read(reinterpret_cast<char *> (&st), sizeof(student));
        if(st.retrollno()==n)
        {
            st.showdata();
            cout<<"\n\nPlease Enter The New Details of student:"<<endl;
            st.getdata();
                int pos=(-1)*static_cast<int>(sizeof(st));
                File.seekp(pos,ios::cur);
                File.write(reinterpret_cast<char *> (&st), sizeof(student));
                cout<<"\n\n\t Record Updated";
                found=true;
        }
    }
    File.close();
    if(found==false)
        cout<<"\n\n Record Not Found ";
    cin.ignore();
    cin.get();
}


void delete_student(int n)
{
    student st;
    ifstream inFile;
    inFile.open("student.dat",ios::binary);
    if(!inFile)
    {
```

[*] cse project_GUB result.cpp

```
    if(!inFile)
    {
        cout<<"File could not be open !! Press any Key...";
        cin.ignore();
        cin.get();
        return;
    }
    ofstream outFile;
    outFile.open("Temp.dat",ios::out);
    inFile.seekg(0,ios::beg);
    while(inFile.read(reinterpret_cast<char *> (&st), sizeof(student)))
    {
        if(st.retrollno()!=n)
        {
            outFile.write(reinterpret_cast<char *> (&st), sizeof(student));
        }
    }
    outFile.close();
    inFile.close();
    remove("student.dat");
    rename("Temp.dat","student.dat");
    cout<<"\n\n\tRecord Deleted ..";
    cin.ignore();
    cin.get();
}


void class_result()
{
    student st;
    ifstream inFile;
    inFile.open("student.dat",ios::binary);
```

```
    ifstream inFile;
    inFile.open("student.dat",ios::binary);
    if(!inFile)
    {
        cout<<"File could not be open !! Press any Key...";
        cin.ignore();
        cin.get();
        return;
    }
    cout<<"\n\n\t\tALL STUDENTS RESULT \n\n";
    cout<<"==========================================================================\n";
    cout<<"ID.No       Name     MAT CHE CSE105 CSE106 EAP  (%)age Grade"<<endl;
    cout<<"==========================================================================\n";
    while(inFile.read(reinterpret_cast<char *> (&st), sizeof(student)))
    {
        st.show_tabular();
    }
    cin.ignore();
    cin.get();
    inFile.close();
}


void result()
{
    char ch;
    int rno;
    system("cls");
    cout<<"\n\n\n\tRESULT MENU";
    cout<<"\n\n\n\t1. Class Result";
    cout<<"\n\n\t2. Student Report Card";
    cout<<"\n\n\t3. Back to Main Menu";
```

[*] cse project_GUB result.cpp

```
    cout<<"\n\n\t2. Student Report Card";
    cout<<"\n\n\t3. Back to Main Menu";
    cout<<"\n\n\n\tEnter Your Choice (1/2/3)? ";
    cin>>ch;
    system("cls");
    switch(ch)
    {
    case '1' :  class_result(); break;
    case '2' :  cout<<"\n\n\tEnter ID Number Of Student : "; cin>>rno;
                display_sp(rno); break;
    case '3' :  break;
    default:    cout<<"\a";
    }
}


void intro()
{
    cout<<"\n\n\n\t\t GUB STUDENT";
    cout<<"\n\n\t\tREPORT CARD";
    cout<<"\n\n\t\t  PROJECT";
    cout<<"\n\n\n\tPlease Enter Any Key To Start!";
    cin.get();
}


void entry_menu()
{
    char ch;
    int num;
    system("cls");
    cout<<"\n\n\n\tENTRY MENU";
```

[*] cse project_GUB result.cpp

```
void entry_menu()
{
    char ch;
    int num;
    system("cls");
    cout<<"\n\n\n\tENTRY MENU";
    cout<<"\n\n\t1.CREATE STUDENT RECORD";
    cout<<"\n\n\t2.DISPLAY ALL STUDENTS RECORDS";
    cout<<"\n\n\t3.SEARCH STUDENT RECORD ";
    cout<<"\n\n\t4.MODIFY STUDENT RECORD";
    cout<<"\n\n\t5.DELETE STUDENT RECORD";
    cout<<"\n\n\t6.BACK TO MAIN MENU";
    cout<<"\n\n\tPlease Enter Your Choice (1-6) ";
    cin>>ch;
    system("cls");
    switch(ch)
    {
    case '1':   write_student(); break;
    case '2':   display_all(); break;
    case '3':   cout<<"\n\n\tPlease Enter The ID number "; cin>>num;
                display_sp(num); break;
    case '4':   cout<<"\n\n\tPlease Enter The ID number "; cin>>num;
                modify_student(num);break;
    case '5':   cout<<"\n\n\tPlease Enter The ID number "; cin>>num;
                delete_student(num);break;
    case '6':   break;
    default:    cout<<"\a"; entry_menu();
    }
}
```

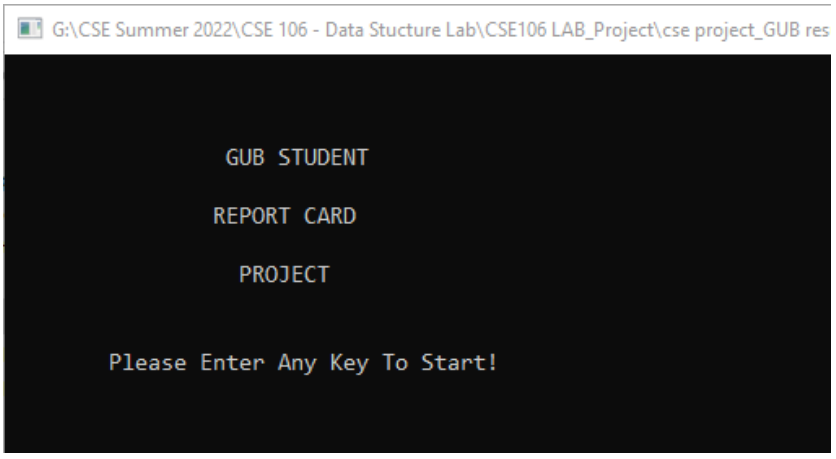
Chapter 3

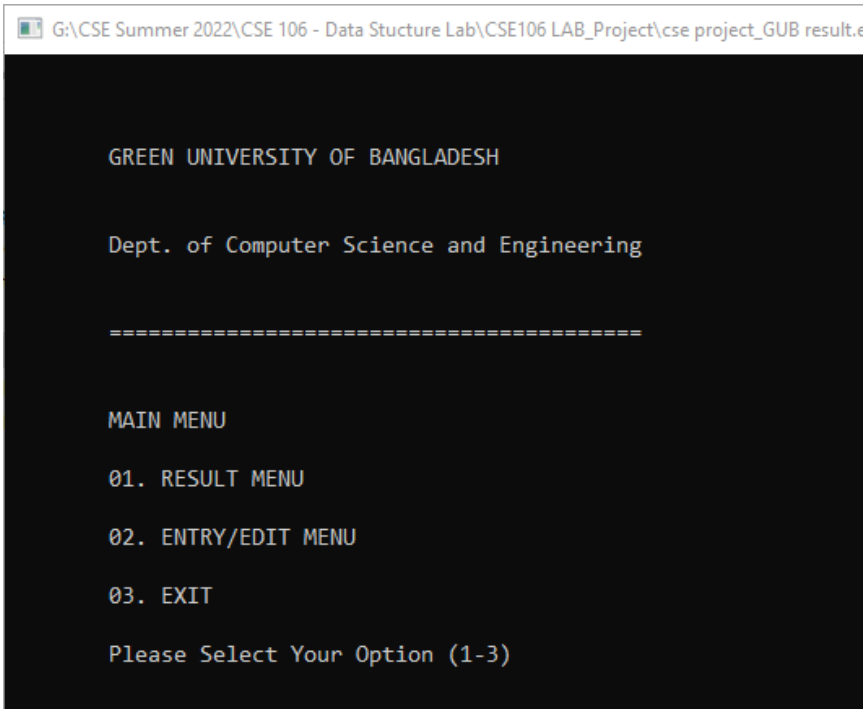
Performance Evaluation

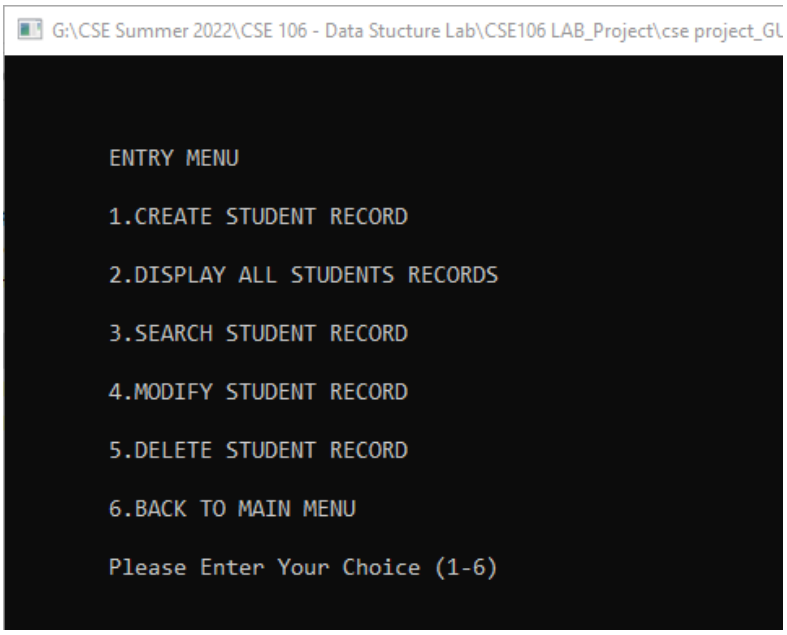
Results and Discussions

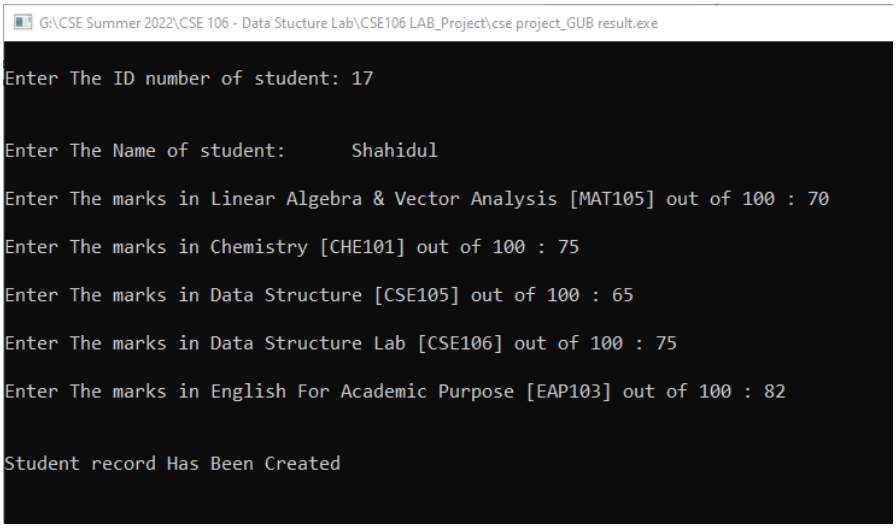
1. Output

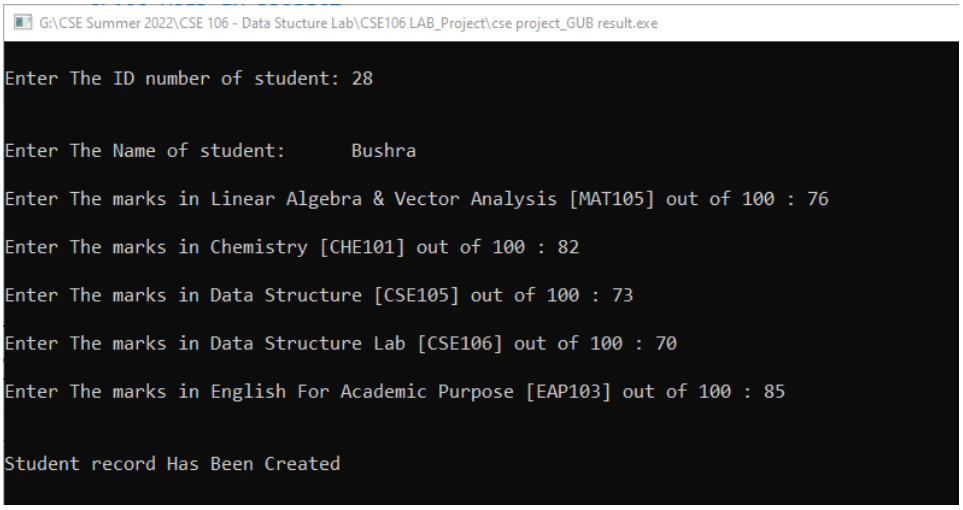
- This is the main panel of the system. From here the software will take user input.

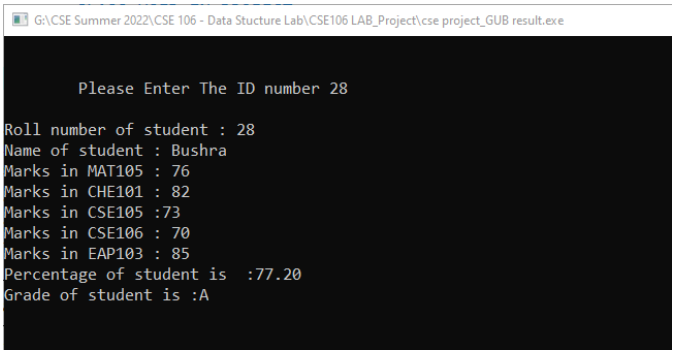


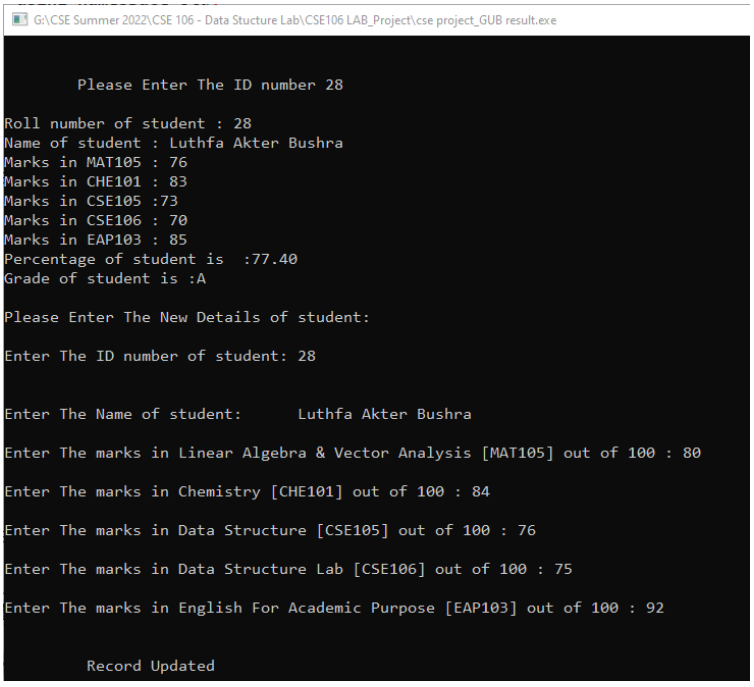


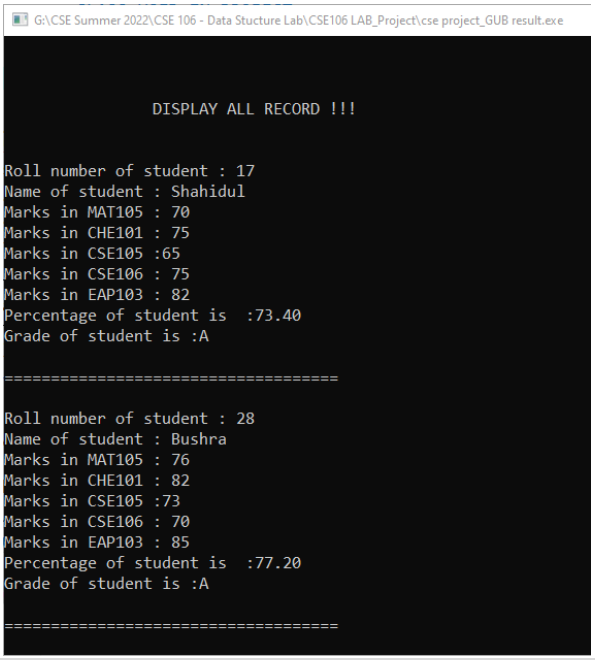

G:\CSE Summer 2022\CSE 106 - Data Stucture Lab\CSE106 LAB_Project\cse project_GU
ENTRY MENU
1.CREATE STUDENT RECORD
2.DISPLAY ALL STUDENTS RECORDS
3.SEARCH STUDENT RECORD
4.MODIFY STUDENT RECORD
5.DELETE STUDENT RECORD
6.BACK TO MAIN MENU
Please Enter Your Choice (1-6)


G:\CSE Summer 2022\CSE 106 - Data Stucture Lab\CSE106 LAB_Project\cse project_GUB result.exe
Enter The ID number of student: 17
Enter The Name of student: Shahidul
Enter The marks in Linear Algebra & Vector Analysis [MAT105] out of 100 : 70
Enter The marks in Chemistry [CHE101] out of 100 : 75
Enter The marks in Data Structure [CSE105] out of 100 : 65
Enter The marks in Data Structure Lab [CSE106] out of 100 : 75
Enter The marks in English For Academic Purpose [EAP103] out of 100 : 82
Student record Has Been Created


G:\CSE Summer 2022\CSE 106 - Data Stucture Lab\CSE106 LAB_Project\cse project_GUB result.exe
Enter The ID number of student: 28
Enter The Name of student: Bushra
Enter The marks in Linear Algebra & Vector Analysis [MAT105] out of 100 : 76
Enter The marks in Chemistry [CHE101] out of 100 : 82
Enter The marks in Data Structure [CSE105] out of 100 : 73
Enter The marks in Data Structure Lab [CSE106] out of 100 : 70
Enter The marks in English For Academic Purpose [EAP103] out of 100 : 85
Student record Has Been Created


G:\CSE Summer 2022\CSE 106 - Data Stucture Lab\CSE106 LAB_Project\cse project_GUB result.exe
Please Enter The ID number 28
Roll number of student : 28
Name of student : Bushra
Marks in MAT105 : 76
Marks in CHE101 : 82
Marks in CSE105 :73
Marks in CSE106 : 70
Marks in EAP103 : 85
Percentage of student is :77.20
Grade of student is :A


G:\CSE Summer 2022\CSE 106 - Data Stucture Lab\CSE106 LAB_Project\cse project_GUB result.exe
Please Enter The ID number 28
Roll number of student : 28
Name of student : Luthfa Akter Bushra
Marks in MAT105 : 76
Marks in CHE101 : 83
Marks in CSE105 :73
Marks in CSE106 : 70
Marks in EAP103 : 85
Percentage of student is :77.40
Grade of student is :A
Please Enter The New Details of student:
Enter The ID number of student: 28
Enter The Name of student: Luthfa Akter Bushra
Enter The marks in Linear Algebra & Vector Analysis [MAT105] out of 100 : 80
Enter The marks in Chemistry [CHE101] out of 100 : 84
Enter The marks in Data Structure [CSE105] out of 100 : 76
Enter The marks in Data Structure Lab [CSE106] out of 100 : 75
Enter The marks in English For Academic Purpose [EAP103] out of 100 : 92
Record Updated


G:\CSE Summer 2022\CSE 106 - Data Stucture Lab\CSE106 LAB_Project\cse project_GUB result.exe
DISPLAY ALL RECORD !!!
Roll number of student : 17
Name of student : Shahidul
Marks in MAT105 : 70
Marks in CHE101 : 75
Marks in CSE105 :65
Marks in CSE106 : 75
Marks in EAP103 : 82
Percentage of student is :73.40
Grade of student is :A
==========
Roll number of student : 28
Name of student : Bushra
Marks in MAT105 : 76
Marks in CHE101 : 82
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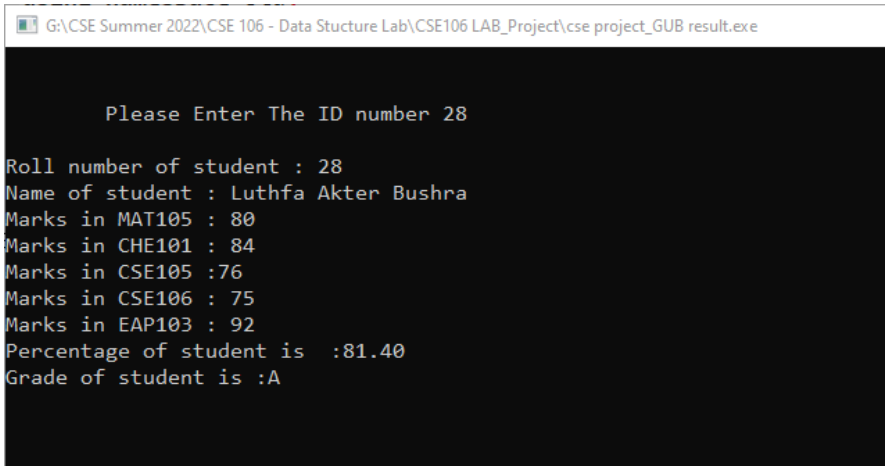
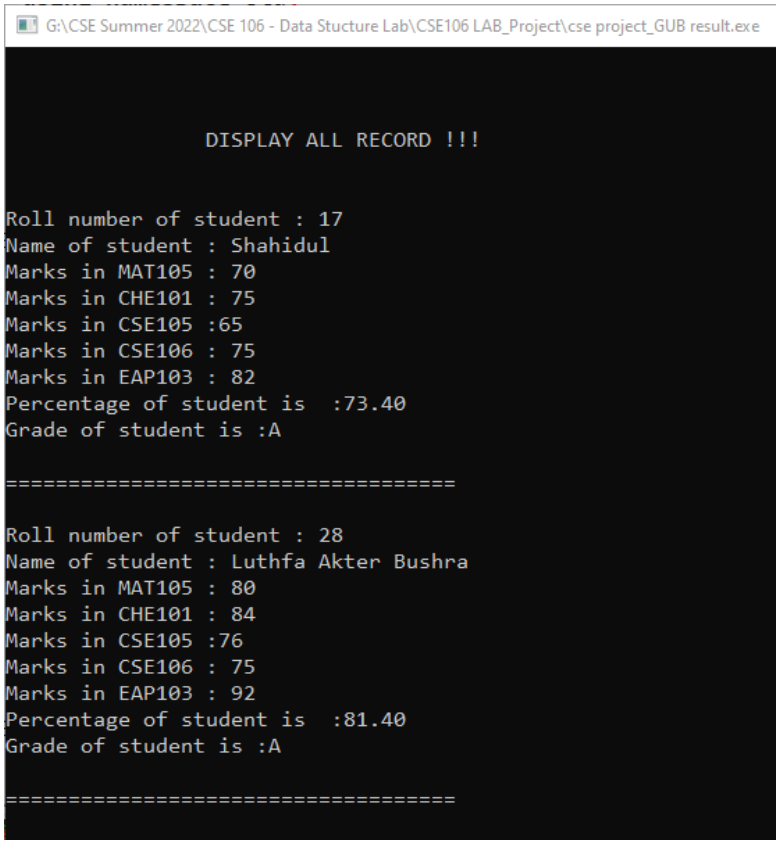
Marks in CSE106 : 70
Marks in EAP103 : 85
Percentage of student is :77.20
Grade of student is :A
==========


G:\CSE Summer 2022\CSE 106 - Data Stucture Lab\CSE106 LAB_Project\cse project_GUB result.exe
Please Enter The ID number 28
Roll number of student : 28
Name of student : Luthfa Akter Bushra
Marks in MAT105 : 80
Marks in CHE101 : 84
Marks in CSE105 :76
Marks in CSE106 : 75
Marks in EAP103 : 92
Percentage of student is :81.40
Grade of student is :A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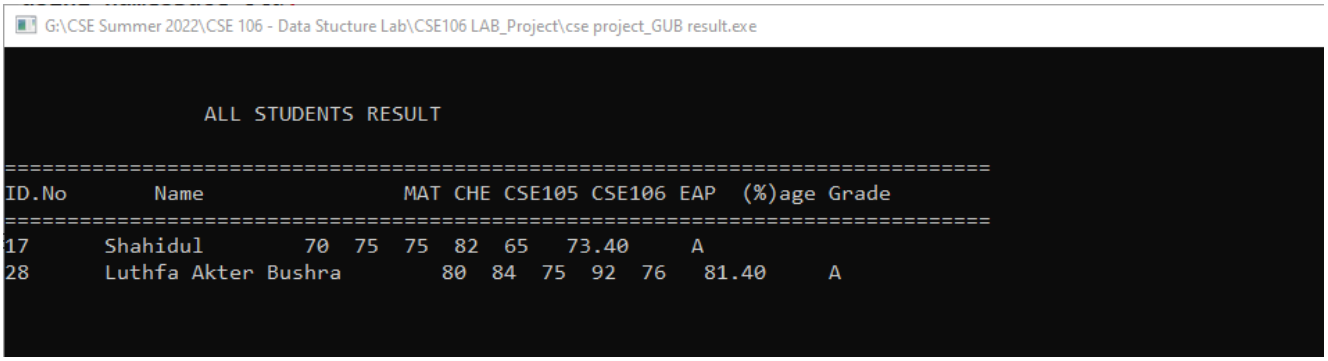
G:\CSE Summer 2022\CSE 106 - Data Stucture Lab\CSE106 LAB_Project\cse project_GUB result.exe
ALL STUDENTS RESULT
ID.No Name MAT CHE CSE105 CSE106 EAP (%)age Grade
17 Shahidul 70 75 75 82 65 73.40 A
28 Luthfa Akter Bushra 80 84 75 92 76 81.40 A

3.2 Analysis and Outcome

The project is build using C programming language. We do the coding on DevC++ using GCC compiler. This project is mainly built for reduce the pressure and do the work efficiently. We will update this project and add more feature. It will be helpful for all the students and the teachers. So we do the project using the course knowledge of Data Structure.

Chapter 4

Conclusion

4.1 Introduction

GUB Student Report Card System to be computerized to reduce human errors and to increase efficiency. By computerized the system we can do the work lesser errors. This project is built for calculate a students subject wise mark and showing marksheet. And track the result information quickly.

1. Practical Implications

GUB Student Report Card System helps the educational institutions to publishing and grading result of the students.

2. Scope of Future Work

In future this can be the most useful product in the school, college and university. It will keep the student's information safe and synchronized. In future we can add more feature to this. Like add average results of a student, billing history of a student, attendance of a student. This system can reduce the mistake and work more efficiently. In this way it can be helpful for our work.