STUDENT REPORT CARD SYSTEM

C++ Project

GROUP IDEALS

1) SHAHZEB MAHESAR
2) SHAKEEL AHMED
3) SAJAN DAS
4) JAMAL HUSSAIN
5) MUHAMMAD SULEMAN

Submitted to; Sir Javed Ahmed Shahani

Introduction to Programming

Contents

Summary

We have a lot of inconvenience in maintaining paper based records in schools. Records are headache and less secure. This Project is made to keep records of schools and other institutes. Records are kept more securely than paper based records. Records are easily maintained and modified. Search of any specific record is very easy. This project is very easy to operate.

Program Requirements

Compiler; Dev C++

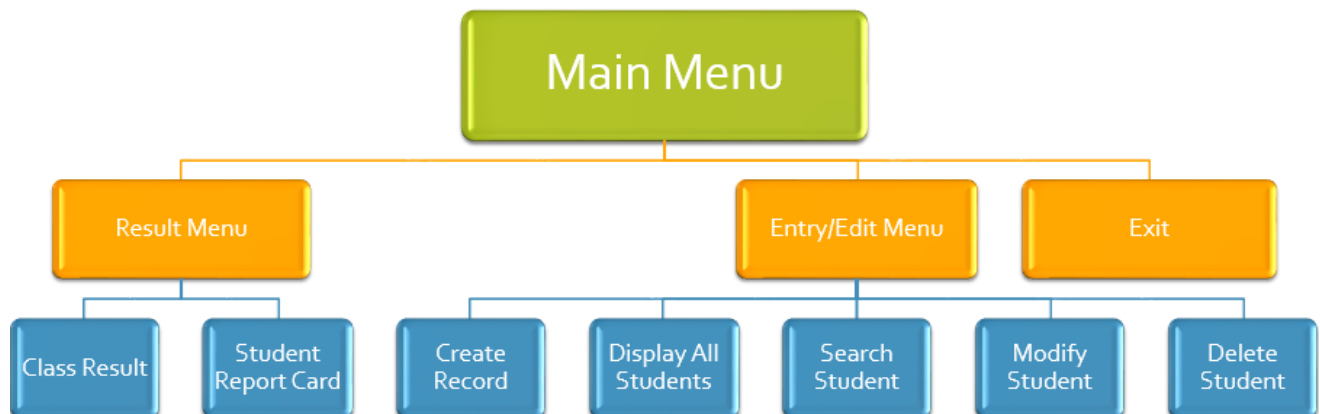**Operating System;** Windows xp, 7, 8 or 10

RAM; 512 MB to 2 GB

Processor; Dual core to Core i7

Storage usage; 1 MB to 5 MB

Flow Chart

Main Menu

Result Menu   Entry/Edit Menu   Exit

Class Result | Student Report Card | Create Record | Display All Students | Search Student | Modify Student | Delete Student

Student Report Card System   6

Introduction/Explanation

1. Structure Declaration;

At the top of programme structure is declared in order to have collection of variables of different data types declared for the record of student.

```
10  //=============================== DECALARATION OF STRUCTURE ========
11
12  struct student{
13
14      int srno;
15      char name[50];
16      float gpa, per;
17      int p_marks, ict_marks, e_marks, pcal_marks, is_ps_marks, total;
18  }st;
```

2. User defined function declaration;

User defined functions, to be used in program are declared.

```
21
22  void class_result();
23  void create_record();
24  void search_record();
25  void display_all();
26  void delete_record(int);
27  void modify_record(int);
28  void showMenu();
29  void entry_menu();
```

3. Function to create record of student;

This function creates the records of a student by taking input of roll number, name and marks to specific subjects and then stores the record permanently using files in C. This function also calculates the percentage and GPA of student.

```
34    void create_record()
35  ┌  {
36        fptr = fopen("student.txt","ab");
37        cout << "\n\n\t==================  CREATE RECORDS ==================\n\n\n";
38        cout << "\t\t\t\t\t\t\t\t\t\t\t\t(0000 to Back..!)";
39        cout << "\nEnter the Registration No: of Student: ";
40        cin  >> st.srno;
41  ┌     if(st.srno == 0000){
42            system("cls");
43            entry_menu();
44  └     }
45        cout << "\nEnter Name of Student: ";
46        fflush(stdin);
47        cin.getline(st.name,50);
48        cout << "\nEnter Programming Marks out of 100: ";
49        cin  >> st.p_marks;
50        cout << "\nEnter ICT Marks out of 100: ";
51        cin  >> st.ict_marks;
52        cout << "\nEnter Funtional English Marks out of 100: ";
53        cin  >> st.e_marks;
54        cout << "\nEnter Pre-Calculus Marks out of 100: ";
55        cin  >> st.pcal_marks;
56        cout << "\nEnter Islamic Studies and Pakistan Studies Marks out of 100: ";
57        cin  >> st.is_ps_marks;
58        st.total = st.p_marks+st.ict_marks+st.pcal_marks+st.is_ps_marks+st.e_marks;
59        st.per = (float)st.total/500*100;
60        st.gpa = st.per/100*4.0;
61        fwrite(&st,sizeof(st),1,fptr);
62        fclose(fptr);
63        cout << "\n\n\n\tRecord has been created.";
64        getch();
65  └  }
```

Program output

```
==================  CREATE RECORDS ==================




Enter the Registration No: of Student:
```

4. Function to display all students' record;

This function displays all the students' records by displaying manually biodata, marks and percentage/GPA of student, stored in program.

```cpp
69   void display_all()
70   {
71       system("cls");
72       cout << "\n\n\t================= DISPLAY ALL RECORDS ==================\n\n\n";
73       fptr = fopen("student.txt","rb");
74       while((fread(&st,sizeof(st),1,fptr))>0)
75       {
76           cout << "\nRegistration No: of Student: " << st.srno;
77           cout << "\nName of Student: " << st.name;
78           cout << "\nProgramming Marks out of 100: " << st.p_marks;
79           cout << "\nICT Marks out of 100: " << st.ict_marks;
80           cout << "\nFuntional English Marks out of 100: " << st.e_marks;
81           cout << "\nPre-Calculus Marks out of 100: " << st.pcal_marks;
82           cout << "\nIslamic Studies and Pakistan Studies Marks out of 100: " << st.is_ps_marks;
83           cout << "\nTotal Marks of student out of 500: " << st.total;
84           cout << "\nTotal Perentage of Student : " << st.per << "%";
85           cout << "\nTotal CGPA of Student: " << st.gpa;
86           cout << "\n\n===============================================================\n\n\n";
87           getch();
88       }
89       fclose(fptr);
90       cout << "\n\n\tPress Enter to continue...!";
91       getch();
92   }
```

Program output

5. Function to modify the record of a student;

This function modifies the existing record of student and takes new input of that record and keeps the new record stored in files and removes previous entries about this record.

```cpp
96    void modify_record(int rr)
97    {
98
99        int flag = 0;
100       cout << "\n\n\t=================== MODIFY RECORDS ===================\n\n\n";
101       fptr = fopen("student.txt","rb+");
102       cout << "\n\n\tEnter the registration no: of student to be modified :"; cin >> rr;
103       while((fread(&st,sizeof(st),1,fptr))== 1)
104       {
105
106           if(st.srno == rr)
107           {
108           cout << "\nRegistration No: of Student: " << st.srno;
109           cout << "\nName of Student: " << st.name;
110           cout << "\nProgramming Marks out of 100: " << st.p_marks;
111           cout << "\nICT Marks out of 100: " << st.ict_marks;
112           cout << "\nFuntional English Marks out of 100: " << st.e_marks;
113           cout << "\nPre-Calculus Marks out of 100: " << st.pcal_marks;
114           cout << "\nIslamic Studies and Pakistan Studies Marks out of 100: " << st.is_ps_marks;
115           cout << "\nTotal Marks of student out of 500: " << st.total;
116           cout << "\nTotal Perentage of Student : " << st.per << "%";
117           cout << "\nTotal CGPA of Student: " << st.gpa;
118           cout << "\n\n\tPlease Enter new details of student.';
119           cout << "\n\nEnter the Registration No: of Student: ";
120           cin >> st.srno;
121           cout << "\nEnter Name of Student: ';
122           fflush(stdin);
123           cin.getline(st.name,50);
124           cout << "\nEnter Programming Marks out of 100: ';
125           cin >> st.p_marks;
126           cout << "\nEnter ICT Marks out of 100: ';
127           cin >> st.ict_marks;
128           cout << "\nEnter Funtional English Marks out of 100: ';
129           cin >> st.e_marks;
130           cout << "\nEnter Pre-Calculus Marks out of 100: ';
131           cin >> st.pcal_marks;
132           cout << "\nEnter Islamic Studies and Pakistan Studies Marks out of 100: ';
133           cin >> st.is_ps_marks;
134           st.total = st.p_marks+st.ict_marks+st.pcal_marks+st.is_ps_marks+st.e_marks;
135           st.per = (float)st.total/500*100;
136           st.gpa = st.per/100*4.0;
137           fseek(fptr,ftell(fptr)-sizeof(st),0);
138           fwrite(&st,sizeof(st),1,fptr);
139           fclose(fptr);
140           cout << "\n\n\tRecord has been updated...!";
141           flag = 1;
142           }
143       }
144       fclose(fptr);
145       if(flag == 0)
146       cout << "\n\n\tRecord not exist...!";
147       cout << "\n\n\tPress Enter to continue...!";
148       getch();
149   }
```

Program output

```
================== MODIFY RECORDS ===================


        Enter the registration no: of student to be modified :21
File here....!File here....!File here....!File here....!File here....!
Registration No: of Student: 21
Name of Student: Suleman
Programming Marks out of 100: 69
ICT Marks out of 100: 78
Funtional English Marks out of 100: 74
Pre-Calculus Marks out of 100: 63
Islamic Studies and Pakistan Studies Marks out of 100: 80
Total Marks of student out of 500: 364
Total Perentage of Student : 72.8%
Total CGPA of Student: 2.912

        Please Enter new details of student.

Enter the Registration No: of Student:
```

```
        Please Enter new details of student.

Enter the Registration No: of Student: 21

Enter Name of Student: Suleman

Enter Programming Marks out of 100: 75

Enter ICT Marks out of 100: 76

Enter Funtional English Marks out of 100: 79

Enter Pre-Calculus Marks out of 100: 51

Enter Islamic Studies and Pakistan Studies Marks out of 100: 90


        Record has been updated...!

        Press Enter to continue...!
```

6. Function to search a specific record;

This function displays the specific record of student by calling unique roll number of student. We can easily find record of any student by just putting roll number of student.

```
153    void search_record()
154  {
155        int rn;
156        bool flag = false;
157        cout << "\n\n\t================== SEARCH RECORD ==================\n\n\n";
158        cout << "Enter Registration No: of Student: "; cin >> rn;
159        fptr= fopen("Student.txt","r");
160        while((fread(&st,sizeof(st),1,fptr)) != 0)
161        {
162            if(st.srno == rn)
163            {
164                cout << "\nRegistration No: of Student: " << st.srno;
165                cout << "\nName of Student: " << st.name;
166                cout << "\nProgramming Marks out of 100: " << st.p_marks;
167                cout << "\nICT Marks out of 100: " << st.ict_marks;
168                cout << "\nFuntional English Marks out of 100: " << st.e_marks;
169                cout << "\nPre-Calculus Marks out of 100: " << st.pcal_marks;
170                cout << "\nIslamic Studies and Pakistan Studies Marks out of 100: " << st.is_ps_marks;
171                cout << "\nTotal Marks of student out of 500: " << st.total;
172                cout << "\nTotal Perentage of Student : " << st.per << "%";
173                cout << "\nTotal CGPA of Student: " << st.gpa;
174                cout << "\n\n\tPress enter to continue...!";
175                flag = true;
176                break;
177            }
178        }
179        fclose(fptr);
180        if(flag == false)
181        cout << "\n\n\tRecord not exist...!";
182        getch();
```

Program output

```
================== SEARCH RECORD ==================


Enter Registration No: of Student: 17

Registration No: of Student: 17
Name of Student: Shakeel
Programming Marks out of 100: 85
ICT Marks out of 100: 92
Funtional English Marks out of 100: 70
Pre-Calculus Marks out of 100: 60
Islamic Studies and Pakistan Studies Marks out of 100: 72
Total Marks of student out of 500: 379
Total Perentage of Student : 75.8%
Total CGPA of Student: 3.032

        Press enter to continue...!
```
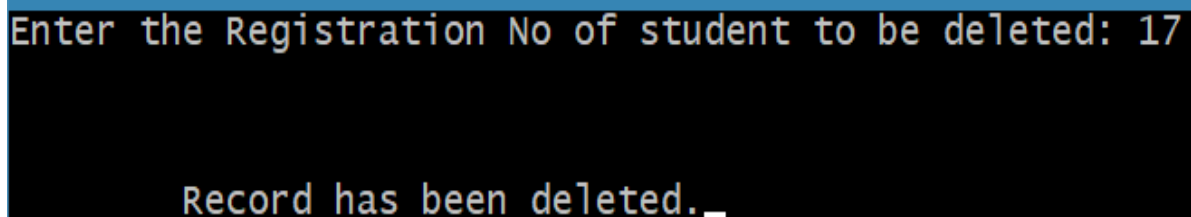
7. Function to delete a specific record;

This function removes an existing record from files of program. We can do this by just putting roll number the record will be deleted permanently.

```
188    void delete_record(int rn)
189  ⊟ {
190        FILE *fptr2;
191        int flag = 0;
192        cout << "\n\n\t================= DELETE RECORD ===================\n\n\n";
193        fptr2 = fopen("Temp.txt","w");
194        fptr = fopen("student.txt", "r");
195        cout << "Enter the Registration No of student to be deleted: ";
196        cin  >> rn;
197        rewind(fptr);
198        while((fread(&st,sizeof(st),1,fptr))>0)
199  ⊟    {
200            if(st.srno != rn)
201  ⊟        {
202                fwrite(&st,sizeof(st),1,fptr2);
203                flag = 1;
204            }
205        }
206        fclose(fptr);
207        fclose(fptr2);
208        remove("student.txt");
209        rename("Temp.txt","student.txt");
210        if(flag == 0)
211  ⊟    {
212            cout << "\n\n\tRecord not exist...!";
213        }
214        cout << "\n\n\n\tRecord has been deleted.";
215        getch();
216    }
```

Program output

```
Enter the Registration No of student to be deleted: 17



      Record has been deleted._
```

8. Entry menu of program;

On the entry of program we have two menus, result menu and entry/edit record menu. This entry menu contains list of 6 options to be chose by the user.

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

```cpp
221    void entry_menu()
222    {
223        char ch;
224        int rn;
225        system("cls");
226        cout << "\n\n\n\tENTRY MENU"
227             << "\n\t_____"
228             << "\n\n\t1.CREATE STUDENT RECORD"
229             << "\n\n\t2.DISPLAY ALL STUDENTS RECORDS"
230             << "\n\n\t3.SEARCH STUDENT RECORD "
231             << "\n\n\t4.MODIFY STUDENT RECORD"
232             << "\n\n\t5.DELETE STUDENT RECORD"
233             << "\n\n\t6.BACK TO MAIN MENU"
234             << "\n\n\tPlease Enter Your Choice (1-6) ";
235        cin  >> ch;
236        system("cls");
237        switch(ch)
238        {
239            case '1' : create_record();   break;
240            case '2' : display_all();      break;
241            case '3' : search_record(); break;
242            case '4' : modify_record(rn); break;
243            case '5' : delete_record(rn); break;
244            case '6' : break;
245            default  : cout << "\a"; entry_menu();
246        }
247    }
```

Program output

9. Result menu;
The first of the program in the main menu is result menu, this result menu contains 2 options to be opted by user.

1. Class Result
2. Student Report Card

```
251   void result()
252 ⊟ {
253       system("cls");
254       char d;
255       cout << "\n\n\n\tRESULT   MENU\n"
256             << "\t_____"
257             << "\n\n\t01.   CLASS RESULT"
258             << "\n\n\t02.   STUDENT REPORT CARD"
259             << "\n\n\t03.   BACK TO ENTRY MENU"
260             << "\n\n\n\t Please select your option (1-3): ";
261       cin>>d;
262       system("cls");
263 ⊟     switch(d){
264           case '1':  class_result();  break;
265           case '2':  search_record();     break;
266           case '3':  break;
267           default :  cout<< "\a";
268       }
269 └ }
```

Program output

10. Function to class result;

This function displays the records of all students stored previously in files of C, in tabular form displaying roll number, name, marks, percentage and GPA of all students.

```
72
73   void class_result()
74 □ {
75       system("cls");
76       fptr=fopen("student.txt","rb");
77       if(fptr==NULL)
78 □     {
79           cout<<"ERROR!!! FILE COULD NOT BE OPEN\n\n\n Go To Entry Menu to create File";
80           cout<<"\n\n\n Program is closing ....";
81           getch();
82           exit(0);
83       }
84
85       cout<<"\n\n\n\t\t\t\tAll Student Result\n";
86       cout<<"********************************************************************************\n";
87       cout<<"Rno  Name\t Eng\t ICT\t Precal\t Prog\t IS&PS\t Total\t %age\t GPA\t\n";
88       cout<<"********************************************************************************\n";
89       while((fread(&st,sizeof(st),1,fptr)) == 1)
90 □     {
91           cout<<st.srno<<"  "<<st.name<<"\t"<<st.e_marks<<"\t"<<st.ict_marks<<"\t"<<st.pcal_marks<<"\t"<<st.p_marks
92           <<"\t"<<st.is_ps_marks<<"\t"<<st.total<<"\t"<<st.per<<"\t"<<st.gpa<<endl;
93       }
94       fclose(fptr);
95       cout << "\n\n\n\nPress Enter to continue...!";
96       getch();
97       system("cls");
98   }
```

Program output

```
                        All Student Result
*******************************************************************************
Rno  Name        Eng    ICT    Precal  Prog    IS&PS   Total   %age    GPA
*******************************************************************************
15   Shahzeb     80     75     60      70      85      370     74      2.96
23   Jamal       72     80     61      67      75      355     71      2.84
34   Sajan       73     78     71      76      76      374     74.8    2.992
17   Shakeel     70     92     60      85      72      379     75.8    3.032
21   Suleman     74     78     63      69      80      364     72.8    2.912

_
```

11. Intro function;

On the start of program the first screen is displayed welcoming the user and introducing the programmers of this program, and the user presses enter to move further.

```
302   void intro()
303 ⊟ {
304
305       cout << "\n\n\n\n\n\n\t\t\t       Project: Student Report Card System \n\n";
306       cout << "\t\t\t        Made By: Group Ideals BS-CS & SE\n";
307       cout << "\n\t\t\tGROUP MEMBERS"
308            << "\n\n\t\t\t* Shakeel Ahmed"
309            << "\n\n\t\t\t* Shahzeb Mahesar"
310            << "\n\n\t\t\t* Sajan Dass"
311            << "\n\n\t\t\t* Mohammad Suleman"
312            << "\n\n\t\t\t* Jamal Hussain";
313       cout << "\n\n\t\t\tSukkur Institute of Business Administration\n";
314
315       getch();
316       system ("cls");
317   }
```

Program output

```
        Project: Student Report Card System

          Made By: Group Ideals BS-CS & SE

    GROUP MEMBERS

    * Shakeel Ahmed

    * Shahzeb Mahesar

    * Sajan Dass

    * Mohammad Suleman

    * Jamal Hussain

    Sukkur Institute of Business Administration
```

12. Main menu function;

Here's the main function of program, as user presses enter, the program enters into main menu. This main menu has two options to be opted by user, which further calls next function opted by user.

```
320
321 ⊟ void showMenu(){
322         char ch;
323         int rno;
324         intro();
325         do
326 ⊟      {
327             system("cls");
328         cout << "\n\n\n\tM A I N     M E N U\n"
329             << "\t_____"
330             << "\n\n\t01.   RESULT MENU"
331             << "\n\n\t02.   ENTRY/EDIT RECORD MENU"
332             << "\n\n\t03.   EXIT."
333             << "\n\n\n\t Please select your option (1-3): ";
334         cin  >> ch;
335         system("cls");
336         switch(ch)
337 ⊟          {
338                 case '1' : result();  break;
339
340                 case '2' : entry_menu();  break;
341
342                 case '3' : exit(0); break;
343
344                 default  : cout << "\a";
345             }
346         }
347     while(ch != 3);
348 }
```

Program output

13. Main function;

This is the main function of program by which whole program functions are operated.

```
350    int main()
351    {
352        system("color 71");
353        showMenu();
354    }
```

Bibliography

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