

Mastering Embedded System Online Diploma

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First Term (Final Project 2)

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Student Management System :

Write a program to build a simple software for student information management system which can perform the following operations:

1. Store the first name of the student.
2. Store the Last name of the student.
3. Store the unique Roll number for every student.
4. Store the GPA of every student.
5. Store the courses registered by the student.

Approach:-

The idea is to form an individual functions for every operation. All the functions are unified together to form software.

1. Add Student Details From File
2. Add Student Details Manually
3. Find the student by the given roll number
4. Find the student by the given first name
5. Find the students registered in a course
6. Count of students
7. Delete a student

Add Student Details From manually :

student_GPA Debug [C/C++ Application]

```
enter roll number:1
Enter the first Name of Student:naahmoud
Enter the Last Name of Student:ahed
Enter the GPA you obtained:4
Enter the Course ID of each course:
Course 1 ID: 10
Course 2 ID: 0
Course 3 ID: 30
Course 4 ID: 40
Course 5 ID: 50
```

```
[INFO] students Details is added successfully
The total number of students is 1
You can add 50 students
You can add 49 more students
```

Choose The Task that you want to perform

1. Add the student Details Manually
 2. Add the student Details From Text File
 3. Find the Student Details by Roll Number
 4. Find the Student Details by First Name
 5. Find the Total number of Students
 6. Delete the Students Details by Roll Number
 7. Show all information
- /. lo tXit

Enter your choice to perform the task: 2

```
[INFO] students Details is added successfully
```

```
[INFO] The total number of students is 0
```

```
[INFO] You can add up to 50 students
```

```
[INFO] You can add 50 more students
```

```
121 void fullmanually(sstudent_buff *fifo_buff){
122     char temp[50];
123     int rollnum=0;
124     if(fifo_buff->base==NULL||fifo_buff->head==NULL||fifo_buff->tail==NULL)
125         DPRINTF("FIFO_NULL");
126     if(fifo_buff->count==fifo_buff->length)
127         DPRINTF("FIFO_full");
128     DPRINTF("enter roll number");
129     gets(temp);
130     rollnum= atoi (temp);
131     if (firstused( fifo_buff, rollnum)==0){
132         DPRINTF("Roll Number is taken before\n");
133         DPRINTF("Enter the Roll Number: ");
134         gets(temp);
135     }
136     fifo_buff->head->roll = atoi(temp);
137
138     DPRINTF("Enter the first Name of Student:");
139     gets(fifo_buff->head->fname);
140     firstused;
141     DPRINTF("Enter the last Name of Student:");
142     gets(fifo_buff->head->lname);
143     DPRINTF("Enter the GPA you obtained:");
144     gets(temp);
145     fifo_buff->head->gpa = atof(temp);
146
147     DPRINTF("Enter the Course ID of each course:\n");
148     for(int i=0; i<5; ++i){
149         DPRINTF("Course %d ID: ",i+1);
150         gets(temp);
151         fifo_buff->head->course_id[i] = atoi(temp);
152     }
153     fifo_buff->count++;
154     if(fifo_buff->head==(sstudent_buff*)(fifo_buff->length* sizeof(sstudent_buff))){
```

Add Student Details From File :

```
void fullFile(student_buff *finfo_buff){
    FILE* fp= fopen("add student","r");
    int rec=0, student_count=0,field_on=0;
    char lines[50];
    const char *token;
    while(fgets(lines,sizeof lines,fp)!=NULL){
        rec++;
        token=strtok(lines,',');
        field_on=0;
        while(token!=NULL)
            field_on++;
        if(field_on==1){
            if(firstused(finfo_buff,atoi(token))==0){
                DPRINTF("error this roll number %d is used",atoi(token));
                student_count++;
                break;
            }
            else{
                finfo_buff->head->roll=atoi(token);
                DPRINTF("Roll Number %d is saved successfully\n",atoi(token));
            }
        }
        else if(field_on == 2){
            strcpy(finfo_buff->head->fname,token);
        }
        else if(field_on == 3){
            strcpy(finfo_buff->head->lname,token);
        }
        else if(field_on == 4){
            strcpy(finfo_buff->head->gpa,atoi(token));
        }
        else if(field_on == 5){
            strcpy(finfo_buff->head->course_id[0],atoi(token));
        }
        else if(field_on == 6){
            strcpy(finfo_buff->head->course_id[1],atoi(token));
        }
        else if(field_on == 7){
            strcpy(finfo_buff->head->course_id[2],atoi(token));
        }
    }
}
```

```
the first Name of Student:mahmoud
the Last Name of Student:abed
the GPA you obtained:4
the Course ID of each course:
Course 1 ID: 10
Course 2 ID: 0
Course 3 ID: 30
Course 4 ID: 40
Course 5 ID: 50
the first Name of Student:mahemoud
the Last Name of Student:abeed
the GPA you obtained:4
the course ID of each course:
Course 1 ID: 10
Course 2 ID: 0
Course 3 ID: 30
Course 4 ID: 40
Course 5 ID: 50
```

Find the student by the given roll number

```
Student GPA Debug [C/C++ Application]
[INFO] students Details is added successfully
The total number of students is 1
You can add 50 students
You can add 49 more students

Choose The Task that you want to perform
1. Add the student Details Manually
2. Add the student Details From Text File
3. Find the Student Details by Roll Number
4. Find the Student Details by First Name
5. Find the Total number of Students
6. Delete the Students Details by Roll Number
7. Show all information
7. To Exit
Enter your choice to perform the task: 3
-----
enter roll number:
The students Details are
First name is :mahmoud
last name : abed
roll number: 1
GPA : 4.00
Enter the course ID of each course
The course ID are: 1
The course ID are: 2
The course ID are: 3
The course ID are: 4
The course ID are: 5

Choose The Task that you want to perform
1. Add the student Details Manually
2. Add the student Details From Text File
3. Find the Student Details by Roll Number
4. Find the Student Details by First Name
```

```
1059 void fu_roll(ssstudent_buff *fifo_buff){
1060     int roll_num=0,flag=0;
1061     Sstudent *ptr=fifo_buff->base;
1062     DPRINTF("enter roll number");
1063     scanf("%d",&roll_num);
1064     for (int i=0;i<fifo_buff->count;i++){
1065         if(ptr->roll==roll_num){
1066             DPRINTF("The students Details are\n");
1067             DPRINTF(" First name is :%s\n",ptr->fname);
1068             DPRINTF(" last name : %s\n",ptr->lname);
1069             DPRINTF(" roll number: %d\n",ptr->roll);
1070             DPRINTF(" GPA : %0.2f\n",ptr->gpa);
1071             DPRINTF("Enter the course ID of each course\n");
1072             for(int j=0;j<5;j++){
1073                 DPRINTF("The course ID are: %d\n",ptr->course_id[j]);
1074             }
1075             flag=0;
1076             break;
1077         }
1078         else{
1079             flag=1;
1080         }
1081         ptr++;
1082     }
1083     if(flag == 1){
1084         DPRINTF("[ERROR] Roll Number %d not found\n",roll_num);
1085     }
1086 }
1087
1088
1089
1090 void fu_name(ssstudent_buff *fifo_buff){
1091     int CID , Count = 0;
1092     Sstudent* Ptr = fifo_buff->base;
```

Find the student by the given ID NAME

New folder (2) - student_GPA/src/student.c - Eclipse IDE

File Edit Source Refactor Navigate Search Project Run Window Help

Run student_GPA Debug

Project Explorer Console student_GPA Debug [C/C++ Application]

FIFO
fifo_buff
pro
student_GPA (New)
Binaries
Includes
src
main.c
student.c
student.h
add student.txt
Debug

You can add 50 students
You can add 48 more students
Choose The Task that you want to perform
1. Add the student Details Manually
2. Add the student Details From Text File
3. Find the Student Details by Roll Number
4. Find the Student Details by First Name
5. Find the Total number of Students
6. Delete the Students Details by Roll Number
7. Show all information
7. To Exit
Enter your choice to perform the task: 4

Enter the course ID: 2
The students Details are
The First name is : mahmoud
Student last name : abed
Student roll number: 1
Student GPA : 4.00
The students Details are
The First name is : mahmoud
Student last name : abed
Student roll number: 4
Student GPA : 12.00
The students Details are
The First name is : mahmoud
Student last name : abed
Student roll number: 4
Student GPA : 12.00
[Total Number of Students Enrolled: 3
Choose The Task that you want to perform
1. Add the student Details Manually
2. Add the student Details From Text File
3. Find the Student Details by Roll Number
4. Find the Student Details by First Name
5. Find the Total number of Students
6. Delete the Students Details by Roll Number
7. Show all information
7. To Exit
Enter your choice to perform the task:

main.c student.h student.c

```
194  
195  
196 void fu_name(sstudent_buff *fifo_buff){  
197  
198     int CID , Count = 0;  
199     Sstudent* Ptr = fifo_buff->base;  
200  
201     DPRINTF("Enter the course ID: ");  
202     scanf("%d",&CID);  
203  
204     for(int i=0; i<fifo_buff->count; ++i){  
205  
206         for(int j=0; j<5; ++j){  
207             if(Ptr->course_id[j] == CID){  
208                 Count++;  
209                 DPRINTF("The students Details are\n");  
210                 DPRINTF("The First name is : %s\n",Ptr->fname);  
211                 DPRINTF("Student last name : %s\n",Ptr->lname);  
212                 DPRINTF("Student roll number: %d\n",Ptr->roll);  
213                 DPRINTF("Student GPA : %.2f\n",Ptr->gpa);  
214             }  
215         }  
216         Ptr++;  
217     }  
218     if(Count == 0){  
219         DPRINTF(" Course id %d not found\n",CID);  
220     }  
221     DPRINTF("[ Total Number of Students Enrolled: %d\n",Count);  
222 }  
223 void numofstud(sstudent_buff *fifo_buff){  
224     DPRINTF("[ Total Number of student is %d\n",fifo_buff->count);  
225     DPRINTF("up to 50 students\n");  
226     DPRINTF("%d more students\n",50-fifo_buff->count);  
227 }  
228 void deletestu(s  
229     int Num , f  
230     Sstudent* Ptr =  
231     }sstudent_buff;  
232     DPRINTF("Enter  
233     scanf("%d",&Num);  
234  
235     for(int i=0; i<fifo_buff->count; ++i){  
236         if(Ptr->roll == Num){  
237             *Ptr = *(fifo_buff->tail);
```

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Type here to search 100°F Sunny 02:25 PM 1-17/4/11

DELETE STUDENT:

```
27 |
28 | void deletestu(sstudent_buff *fifo_buff){
29 |     int Num , flag = 0;
30 |     Sstudent* Ptr = fifo_buff->base;
31 |
32 |     DPRINTF("Enter the Roll Number which you want to delete: ");
33 |     scanf("%d",&Num);
34 |
35 |     for(int i=0; i<fifo_buff->count; ++i){
36 |         if(Ptr->roll == Num){
37 |             *Ptr = *(fifo_buff->tail);
38 |             fifo_buff->count--;
39 |             /* For circular Queue */
40 |             if(fifo_buff->tail == (Sstudent*)(fifo_buff->length * sizeof(Sstu
41 |                 fifo_buff->tail = fifo_buff->base;
42 |             }
43 |             else{
44 |                 fifo_buff->tail++;
45 |             }
46 |             flag = 0;
47 |             break;
48 |         }
49 |         else{
50 |             flag = 1;
51 |         }
52 |         Ptr++;
53 |     }
54 |     if(flag == 0){
55 |         DPRINTF(" Number is removed successfully\n");
56 |     }
57 |     else{
58 |         DPRINTF(" Roll Number %d not found\n",Num);
59 |     }
60 | }
61 |
62 |
```

```
Choose The Task that you want to perform
1. Add the student Details Manually
2. Add the student Details From Text File
3. Find the Student Details by Roll Number
4. Find the Student Details by First Name
5. Find the Total number of Students
6. Delete the Students Details by Roll Number
7. Show all information
7. To Exit
```

```
Enter your choice to perform the task: 6
```

```
-----
Enter the Roll Number which you want to delete: 1
[ Number is removed successfully
```