CSE, 2nd Year
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OOP Assignment 2

1. Write a program to store student information in a file and t do the following operations. Information includes roll, name, and score in five subjects. Use may like to add record (ensure roll number is unique), display all records showing roll, name and total score. User may search for the record against a roll. User may edit the details a record. User may delete record. Deletion may be logical (by some means indicate it is an invalid record and to be avoided in processing) and physical (file will not have the record).

```
#include<stdio.h>

#include<stdlib.h>


int rollcheck(int newroll,int search);//check wheather the roll is already in file

void add();

void removedata();

void show();

void edit();

void fsearch();


typedef struct student {

 int roll;

 char name[30];

 int mark1,mark2,mark3,mark4,mark5;
```

```
 int present;
}student;


int main() {
  FILE* fp = fopen("students.dat","w+");
  fclose(fp);
 while(1) {
   fflush(stdin);
   char ch;
   printf("enter a value:\n1. add\n2. delete\n3. search\n4. edit\n5. print\n0.
exit\nYour Choice = ");
  scanf("%c",&ch);
  switch(ch){
   case '0':return 0;
   case '1':{add();break; }
   case '2':{removedata();break; }
   case '3':{fsearch();break; }
   case '4':{edit();break; }
   case '5':{show();break; }
   default: {printf("\n\nwrong input\n\n"); return 0; }
  }
 }
}


void print(student *s){
```

```
  if(s->present==0){
    printf("No such data\n");
    return;
  }
  printf("Roll: %d, Name: %s\n",s->roll,s->name);
  printf("Marks in Math English Physics Chemistry Biology respectively:\n");
  printf("%d\n",s->mark1);
  printf("%d\n",s->mark2);
  printf("%d\n",s->mark3);
  printf("%d\n",s->mark4);
  printf("%d\n",s->mark5);
}

void show(){
  FILE* fp = fopen("students.dat","r");student demo;
  while(fread(&demo,sizeof(student),1,fp)>0){
     if(demo.present==1)
       print(&demo);
  }
}

void fsearch(){
  int roll;
  printf("Enter roll to search for: ");
  scanf("%d",&roll);
```

```
  rollcheck(roll,1);
}

int rollcheck(int newroll, int search){
  FILE* fp=NULL; student demo;
  fp=fopen("students.dat","rb");
  if(fp==NULL){
    fprintf(stderr,"\nError in openig file\n"); exit(1);
  }
  while(fread(&demo,sizeof(student),1,fp)){
       if(demo.roll==newroll && demo.present==1) {
         if(search==1)
            print(&demo);
         fclose(fp);
         return 1;
       }
   }
   fclose(fp); return 0;
}

void add(){
 FILE *fp=NULL;
 student newinfo;
 fp=fopen("students.dat","ab+");
 if(fp==NULL){
```

```
   fprintf(stderr,"\nError in openig file\n");exit(1); }

 do{

   printf("enter the roll of the new student(enter a unique roll) ");
scanf("%d",&newinfo.roll);

 }while(rollcheck(newinfo.roll,0));

 printf("enter the name of the student\t"); scanf(" %[^\n]s",newinfo.name);

 printf("enter the marks of \nMath English Physics Chemistry Biology in a
secuence \n");

 scanf("%d %d %d %d
%d",&newinfo.mark1,&newinfo.mark2,&newinfo.mark3,&newinfo.mark4,&newi
nfo.mark5);

 newinfo.present = 1;

 fwrite(&newinfo,sizeof(student),1,fp);

 fclose(fp);

}


void removedata(){

 FILE *fp1=NULL;student demo;

 int roll;

 printf("enter the roll you want to delete "); scanf("%d",&roll);

 if(rollcheck(roll,0)==0) {

   printf("\n\nYour entered roll is not found\n");

   return;

 }

 fp1 = fopen("students.dat","r+w");

 if(fp1==NULL){

    fprintf(stderr,"\nError in openig file \n"); exit(1);
```

```
 }
 while(fread(&demo,sizeof(student),1,fp1)) {
  if(demo.roll==roll && demo.present==1) {
    fseek(fp1,-1*sizeof(student),SEEK_CUR);
    demo.present = 0;
    fwrite(&demo,sizeof(student),1,fp1);
  }
 }
 fclose(fp1);
}

void edit(){
 FILE *fp1=NULL;student demo;
 int roll;
 printf("enter the roll you want to edit "); scanf("%d",&roll);
 if(rollcheck(roll,0)==0) {
  printf("\n\nYour entered roll is not found\n");
  return;
 }
 fp1 = fopen("students.dat","r+w");
 int e;
 printf("Enter field you want to edit(1 for name, 2 for marks, any other key to
cancel): ");
 scanf("%d",&e);
 if(e!=1 && e!=2)
```

```
   return;

if(fp1==NULL){
   fprintf(stderr,"\nError in openig file \n"); exit(1);
}
while(fread(&demo,sizeof(student),1,fp1)) {
  if(demo.roll==roll && demo.present==1) {
    if(e==2){
      printf("new marks for maths(0 to go to next subject): ");
      scanf("%d",&e);
      if(e>0)
        demo.mark1 = e;
      printf("new marks for english(0 to go to next subject): ");
      scanf("%d",&e);
      if(e>0)
        demo.mark2 = e;
      printf("new marks for physics(0 to go to next subject): ");
      scanf("%d",&e);
      if(e>0)
        demo.mark3 = e;
      printf("new marks for chemistry(0 to go to next subject): ");
      scanf("%d",&e);
      if(e>0)
        demo.mark4 = e;
      printf("new marks for biology(0 to go to cancel): ");
```

```
        scanf("%d",&e);
        if(e>0)
          demo.mark5 = e;
      }else{
       printf("New name: ");
       scanf(" %[^\n]s",demo.name);
      }
      fseek(fp1,-1*sizeof(student),SEEK_CUR);
      fwrite(&demo,sizeof(student),1,fp1);
    }
  }
 fclose(fp1);
}
```

```
Ritobrotos-MacBook-Air:~ rgdgr8$ ./a.out
enter a value:
1. add
2. delete
3. search
4. edit
5. print
0. exit
Your Choice = 1
enter the roll of the new student(enter a unique roll) 1
enter the name of the student   rg
enter the marks of
Math English Physics Chemistry Biology in a secuence
1 2 3 4 5
enter a value:
1. add
2. delete
3. search
4. edit
5. print
0. exit
Your Choice = 1
enter the roll of the new student(enter a unique roll) 2
enter the name of the student   sg
enter the marks of
Math English Physics Chemistry Biology in a secuence
1 2 3 4 5
enter a value:
1. add
2. delete
3. search
4. edit
5. print
0. exit
Your Choice = 5
Roll: 1, Name: rg
Marks in Math English Physics Chemistry Biology respectively:
1
```

```
   enter a value:
   1. add
   2. delete
   3. search
   4. edit
   5. print
   0. exit
   Your Choice = 5
   Roll: 1, Name: rg
   Marks in Math English Physics Chemistry Biology respectively:
   1
   2
   3
   4
   5
   Roll: 2, Name: sg
   Marks in Math English Physics Chemistry Biology respectively:
   1
   2
   3
   4
   5
   enter a value:
   1. add
   2. delete
   3. search
   4. edit
   5. print
   0. exit
   Your Choice = 4
   enter the roll you want to edit 1
   Enter field you want to edit(1 for name, 2 for marks, any other key to cancel): 1
   New name: a g
   enter a value:
   1. add
   2. delete
   3. search
   4. edit
```

```
enter a value:
1. add
2. delete
3. search
4. edit
5. print
0. exit
Your Choice = 5
Roll: 1, Name: a g
Marks in Math English Physics Chemistry Biology respectively:
1
2
3
4
5
Roll: 2, Name: sg
Marks in Math English Physics Chemistry Biology respectively:
1
2
3
4
5
enter a value:
1. add
2. delete
3. search
4. edit
5. print
0. exit
Your Choice = 3
Enter roll to search for: 2
Roll: 2, Name: sg
Marks in Math English Physics Chemistry Biology respectively:
1
2
3
4
5
```

```
Marks in Math English Physics Chemistry Biology respectively:
1
2
3
4
5
enter a value:
1. add
2. delete
3. search
4. edit
5. print
0. exit
Your Choice = 2
enter the roll you want to delete 1
enter a value:
1. add
2. delete
3. search
4. edit
5. print
0. exit
Your Choice = 5
Roll: 2, Name: sg
Marks in Math English Physics Chemistry Biology respectively:
1
2
3
4
5
enter a value:
1. add
2. delete
3. search
4. edit
5. print
0. exit
Your Choice = 0
```