#include<stdio.h>

#include<stdlib.h>

typedef struct student

{

int rno;

char name[30];

struct subject

{

int scode;

char sname[30];

int mark;

}sub[5];

int total;

float per;

}student;

void create()

{

student \*s;

FILE \*fp;

int n,i,j,no;

printf("Enter how many students you want to create:`");

scanf("%d",&n);

s = (student\*) calloc (n,sizeof(student));

fp=fopen("students.txt","w");

for(i=0;i<n;i++)

{

s[i].total = 0;

s[i].per = 0;

printf("\n Enter RollNo: ");

scanf("%d",&s[i]);

fflush(stdin);

printf("\n Enter Name: ");

scanf("%[^\n]s",s[i].name);

printf("\n Enter Marks - 1.TAMIL 2.ENGLISH 3.MATHS 4.SCIENCE 5.SOCIAL SCIENCE\n");

for(j=0;j<5;j++)

{

printf("\n Enter Marks of Subject%d: ",j+1);

scanf("%d",&s[i].sub[j].mark);

s[i].total += s[i].sub[j].mark;

}

s[i].per = s[i].total/5;

fwrite(&s[i],sizeof(student),1,fp);

}

printf("\n Record Successfully Added");

printf("\n\n\t Press any key to continue...");

getch();

fclose(fp);

}

void display()

{

student s1;

FILE \*fp;

int j;

fp = fopen("students.txt","r");

printf("\n-----------------------------------------------------------------------------");

printf("\n\n \t\t\t STUDENTS INFORMATION\n");

printf("\n-----------------------------------------------------------------------------");

printf("\n NO NAME\t TAMIL ENGLISH MATHS SCIENCE SOCIALSCIENCE TOTAL PERCENT\n");

while(fread(&s1,sizeof(student),1,fp))

{

printf("\n %-4d%-15s",s1.rno,s1.name);

for(j=0;j<5;j++)

{

printf("%d\t",s1.sub[j].mark);

}

printf(" %d %.2f\n",s1.total,s1.per);

}

printf("\n-----------------------------------------------------------------------------");

printf("\n\n\t Press any key to continue...");

getch();

fclose(fp);

}

void append()

{

student \*s;

FILE \*fp;

int n,i,j;

printf("Enter how many students you want to append: ");

scanf("%d",&n);

s = (student\*) calloc (n,sizeof(student));

fp=fopen("students.txt","a");

for(i=0;i<n;i++)

{

s[i].total = 0;

s[i].per = 0;

printf("Enter RollNo: ");

scanf("%d",&s[i]);

fflush(stdin);

printf("Enter Name: ");

scanf("%[^\n]s",s[i].name);

printf("\n Enter Marks - 1.TAMIL 2.ENGLISH 3.MATHS 4.SCIENCE 5.SOCIAL SCIENCE\n");

for(j=0;j<5;j++)

{

printf("Enter Marks of Subject%d: ",j+1);

scanf("%d",&s[i].sub[j].mark);

s[i].total += s[i].sub[j].mark;

}

s[i].per = s[i].total/5;

fwrite(&s[i],sizeof(student),1,fp);

}

printf("\n New Record Successfully Added");

printf("\n\n\t Press any key to continue...");

getch();

fclose(fp);

}

void search()

{

student s1;

FILE \*fp;

int j,rno,found=0;

fp = fopen("students.txt","r");

printf("Enter RollNo to Search: ");

scanf("%d",&rno);

while(fread(&s1,sizeof(student),1,fp))

{

if(s1.rno==rno)

{

found=1;

printf("\n-----------------------------------------------------------------------------");

printf("\n\n \t\t\t STUDENTS INFORMATION\n");

printf("\n-----------------------------------------------------------------------------");

printf("\n NO NAME\t TAMIL ENGLISH MATHS SCIENCE SOCIALSCIENCE TOTAL PERCENT\n");

printf("\n %-4d%-15s",s1.rno,s1.name);

for(j=0;j<5;j++)

{

printf("%d\t",s1.sub[j].mark);

}

printf(" %d %.2f\n",s1.total,s1.per);

printf("\n-----------------------------------------------------------------------------");

}

}

if(!found)

{

printf("\n Record Not Found \n");

}

printf("\n\n\t Press any key to continue...");

getch();

fclose(fp);

}

void modify()

{

student s1;

FILE \*fp,\*fp1;

int j,rno,found=0;

fp = fopen("students.txt","r");

fp1 = fopen("temp.txt","w");

printf("Enter RollNo to Modify: ");

scanf("%d",&rno);

while(fread(&s1,sizeof(student),1,fp))

{

if(s1.rno==rno)

{

s1.total=0;

s1.per=0;

found=1;

fflush(stdin);

printf("Enter New Name: ");

scanf("%[^\n]s",s1.name);

printf("\n Enter New Marks - 1.TAMIL 2.ENGLISH 3.MATHS 4.SCIENCE 5.SOCIAL SCIENCE\n");

for(j=0;j<5;j++)

{

printf("Enter New Marks of Subject%d: ",j+1);

scanf("%d",&s1.sub[j].mark);

s1.total += s1.sub[j].mark;

}

s1.per = s1.total/5;

}

fwrite(&s1,sizeof(student),1,fp1);

}

fclose(fp);

fclose(fp1);

if(found)

{

fp1=fopen("temp.txt","r");

fp=fopen("students.txt","w");

while(fread(&s1,sizeof(student),1,fp1))

{

fwrite(&s1,sizeof(student),1,fp);

}

printf("\nRecord Modified\n");

fclose(fp);

fclose(fp1);

}

else

{

printf("\n Record Not Found \n");

}

printf("\n\n\t Press any key to continue...");

getch();

fclose(fp);

}

void delete()

{

student s1;

FILE \*fp,\*fp1;

int j,rno,found=0;

fp = fopen("students.txt","r");

fp1 = fopen("temp.txt","w");

printf("Enter RollNo to delete a Record: ");

scanf("%d",&rno);

while(fread(&s1,sizeof(student),1,fp))

{

if(s1.rno==rno)

found=1;

else

fwrite(&s1,sizeof(student),1,fp1);

}

fclose(fp);

fclose(fp1);

if(found)

{

fp1=fopen("temp.txt","r");

fp=fopen("students.txt","w");

while(fread(&s1,sizeof(student),1,fp1))

{

fwrite(&s1,sizeof(student),1,fp);

}

fclose(fp);

fclose(fp1);

printf("\n\tThe Record No:%d Is Deleted Successfully\n",rno);

}

else

{

printf("\n Record Not Found \n");

}

printf("\n\n\t Press any key to continue...");

getch();

fclose(fp);

}

void sort\_total()

{

student \*s,s1;

FILE \*fp;

int n,i,j;

fp=fopen("students.txt","r");

fseek(fp,0,SEEK\_END);

n=ftell(fp)/sizeof(student); // to know no of records

s=(student\*)calloc(n,sizeof(student));

rewind(fp);

for(i=0;i<n;i++)

fread(&s[i],sizeof(student),1,fp);

// for sorting records

for(i=0;i<n;i++)

{

for(j=i+1;j<n;j++)

{

if(s[i].total < s[j].total)

{

s1=s[i];

s[i]=s[j];

s[j]=s1;

}

}

}

printf("\n-----------------------------------------------------------------------------");

printf("\n\n \t\t\t STUDENTS INFORMATION\n");

printf("\n-----------------------------------------------------------------------------");

printf("\n NO NAME\t TAMIL ENGLISH MATHS SCIENCE SOCIALSCIENCE TOTAL PERCENT\n");

for(i=0;i<n;i++)

{

printf("\n %-4d%-15s",s[i].rno,s[i].name);

for(j=0;j<5;j++)

{

printf(" %d\t",s[i].sub[j].mark);

}

printf(" %d %.2f\n",s[i].total,s[i].per);

}

printf("\n-----------------------------------------------------------------------------");

printf("\n\n\t Press any key to continue...");

getch();

fclose(fp);

}

void sort\_name()

{

student \*s,s1;

FILE \*fp;

int n,i,j;

fp=fopen("students.txt","r");

fseek(fp,0,SEEK\_END);

n=ftell(fp)/sizeof(student); // to know no of records

s=(student\*)calloc(n,sizeof(student));

rewind(fp);

for(i=0;i<n;i++)

fread(&s[i],sizeof(student),1,fp);

// for sorting records by name

for(i=0;i<n;i++)

{

for(j=i+1;j<n;j++)

{

if(strcmp(s[i].name,s[j].name)>0)

{

s1=s[i];

s[i]=s[j];

s[j]=s1;

}

}

}

printf("\n-----------------------------------------------------------------------------");

printf("\n\n \t\t\t STUDENTS INFORMATION\n");

printf("\n-----------------------------------------------------------------------------");

printf("\n NO NAME\t TAMIL ENGLISH MATHS SCIENCE SOCIALSCIENCE TOTAL PERCENT\n");

for(i=0;i<n;i++)

{

printf("\n %-4d%-15s",s[i].rno,s[i].name);

for(j=0;j<5;j++)

{

printf(" %d\t",s[i].sub[j].mark);

}

printf(" %d %.2f\n",s[i].total,s[i].per);

}

printf("\n-----------------------------------------------------------------------------");

printf("\n\n\t Press any key to continue...");

getch();

fclose(fp);

}

int main()

{

int ch;

printf("\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\n");

printf(" GOVERNMENT HIGHER SECONDARY SCHOOL\n\n");

printf(" STUDENT RECORD SYSTEM\n\n");

printf("\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\n\n");

do

{

printf("\n\t\t1.CREATE");

printf("\n\t\t2.DISPLAY");

printf("\n\t\t3.APPEND");

printf("\n\t\t4.SEARCH");

printf("\n\t\t5.MODIFY");

printf("\n\t\t6.DELETE");

printf("\n\t\t7.SORT BY TOTAL");

printf("\n\t\t8.SORT BY NAME");

printf("\n\t\t0.EXIT");

printf("\n\n Enter Your Choice: ");

scanf("%d",&ch);

switch(ch)

{

case 1:

create();

break;

case 2:

display();

break;

case 3:

append();

break;

case 4:

search();

break;

case 5:

modify();

break;

case 6:

delete();

break;

case 7:

sort\_total();

break;

case 8:

sort\_name();

break;

case 0:

printf("\n\n\t Thank You...");

break;

default:

printf("\n Invalid Choice, Please Enter Correct CHOICE\n");

break;

}

}while(ch!=0);

return 0;

}