#include <math.h>

#include <stdio.h>

#include <stdlib.h>

#include <string.h>

// Variable to keep track of

// number of students

int i = 0;

// Structure to store the student

struct sinfo {

char fname[50];

char lname[50];

int roll;

float cgpa;

int cid[10];

} st[55];

// Function to add the student

void add\_student()

{

printf("Add the Students Details\n");

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

printf("Enter the first name of student\n");

scanf("%s", st[i].fname);

printf("Enter the last name of student\n");

scanf("%s", st[i].lname);

printf("Enter the Roll Number\n");

scanf("%d", &st[i].roll);

printf("Enter the CGPA you obtained\n");

scanf("%f", &st[i].cgpa);

printf("Enter the course ID of each course\n");

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

scanf("%d", &st[i].cid[j]);

}

i = i + 1;

}

// Function to find the student

// by the roll number

void find\_rl()

{

int x;

printf("Enter the Roll Number of the student\n");

scanf("%d", &x);

for (int j = 1; j <= i; j++) {

if (x == st[i].roll) {

printf("The Students Details are\n");

printf("The First name is %s\n",st[i].fname);

printf("The Last name is %s\n", st[i].lname);

printf("The CGPA is %f\n",st[i].cgpa);

printf("Enter the course ID of each course\n");

}

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

printf("The course ID are %d\n",st[i].cid[j]);}

break;}

}

// Function to find the student

// by the first name

void find\_fn()

{

char a[50];

printf("Enter the First Name of the student\n");

scanf("%s", a);

int c = 0;

for (int j = 1; j <= i; j++) {

if (!strcmp(st[j].fname, a)) {

printf("The Students Details are\n");

printf("The First name is %s\n", st[i].fname);

printf("The Last name is %s\n",st[i].lname);

printf("The Roll Number is %d\n ",st[i].roll);

printf("The CGPA is %f\n",st[i].cgpa);

printf("Enter the course ID of each course\n");

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

printf("The course ID are %d\n",st[i].cid[j]);}

c = 1;

}

else

printf("The First Name not Found\n");}

}

// Function to find

// the students enrolled

// in a particular course

void find\_c()

{int id;

printf("Enter the course ID \n");

scanf("%d", &id);

int c = 0;

for (int j = 1; j <= i; j++) {

for (int d = 0; d < 5; d++) {

if (id == st[j].cid[d]) {

printf( "The Students Details are\n");

printf( "The First name is %s\n",st[i].fname);

printf("The Last name is %s\n",st[i].lname);

printf("The Roll Number is %d\n ",st[i].roll);

printf("The CGPA is %f\n",st[i].cgpa);

c = 1;

break;

}

else

printf("The First Name not Found\n");

}

}

}

// Function to print the total

// number of students

void tot\_s()

{

printf("The total number of"" Student is %d\n",i);

printf("\n you can have a max of 50 students\n");

printf("you can have %d more students\n",50 - i);

}

// Function to delete a student

// by the roll number

void del\_s()

{

int a;

printf("Enter the Roll Number which you want to delete\n");

scanf("%d", &a);

for (int j = 1; j <= i; j++) {

if (a == st[j].roll) {

for (int k = j; k < 49; k++)

st[k] = st[k + 1];

i--;

}

}

printf("The Roll Number is removed Successfully\n");

}

// Function to update a students data

void up\_s()

{

printf("Enter the roll number to update the entry : ");

long int x;

scanf("%ld", &x);

for (int j = 0; j < i; j++) {

if (st[j].roll == x) {

printf("1. first name\n""2. last name\n""3. roll no.\n""4. CGPA\n""5. courses\n");

int z;

scanf("%d", &z);

switch (z) {

case 1:

printf("Enter the new first name : \n");

scanf("%s", st[j].fname);

break;

case 2:

printf("Enter the new last name : \n");

scanf("%s", st[j].lname);

break;

case 3:

printf("Enter the new roll numnber : \n");

scanf("%d", &st[j].roll);

break;

case 4:

printf("Enter the new CGPA : \n");

scanf("%f", &st[j].cgpa);

break;

case 5:

printf("Enter the new courses \n");

scanf("%d%d%d%d%d", &st[j].cid[0], &st[j].cid[1], &st[j].cid[2],&st[j].cid[3], &st[j].cid[4]);

break;

}

printf("UPDATED SUCCESSFULLY.\n");

}

}

}

//Function to display all student and respective cgpa

void disp()

{

printf("The Following are the students and their cgpa\n");

printf("Name CGPA\n");

for (int j=0;j<i;j++)

{

printf("%s %s %f\n",st[j].fname,st[j].lname,st[j].cgpa);

}

}

// Driver code

void main()

{

int choice, count;

while (1) {

printf("The Task that you want to perform\n");

printf("1. Add the Student Details\n");

printf("2. Find the Student Details by Roll Number\n");

printf("3. Find the Student Details by First Name\n");

printf("4. Find the Student Details by Course Id\n");

printf("5. Find the Total number of Students\n");

printf("6. Delete the Students Details by Roll Number\n");

printf("7. Update the Students Details by Roll Number\n");

printf("9. Display all Details\n");

printf("8. To Exit\n");

printf("Enter your choice to find the task\n");

scanf("%d", &choice);

switch (choice) {

case 1:

add\_student();

break;

case 2:

find\_rl();

break;

case 3:

find\_fn();

break;

case 4:

find\_c();

break;

case 5:

tot\_s();

break;

case 6:

del\_s();

break;

case 7:

up\_s();

break;

case 8:

exit(0);

break;

case 9:

disp();

break;

}

}

}