#include <iostream>

#include <windows.h>

#include <iomanip>

#include <string.h>

#include <sstream>

using namespace std;

char c,stdg[1000],sub;

int il=0,ol=0,nos;

float stdtm[1000][9],stdsm[1000];

string stddata[1000][2];

void pop();

void output(char);

void subject();

void ranking(char);

void marks(char,int);

void grade();

void average(char);

void tmarks();

void gpa();

int main()

{

system("color F2");

cout << "\t\t\t\t\t RESULT MANAGMENT SYSTEM\n";

cout << "\t\t\t\t\t "<<char(218);

for(int i=0; i<21; i++)

{cout << char(196);}

cout << char(191) << endl;

cout << "\t\t\t\t\t "<<char(179) << " " << char(179) << endl;

cout << "\t\t\t\t\t "<<char(179) << " " << char(179) << endl;

cout << "\t\t\t\t\t "<< char(179) <<" 1. SUBJECT-WISE " << char(179) << endl;

cout << "\t\t\t\t\t "<<char(179) << " 2. SEMESTER-WISE " << char(179) << endl;

cout << "\t\t\t\t\t "<<char(179) << " " << char(179) << endl;

cout << "\t\t\t\t\t "<<char(179) << " " << char(179) << endl;

cout << "\t\t\t\t\t "<<char(192);

for(int i=0; i<21; i++)

{cout << char(196);}

cout << char(217) << endl;

cout<<endl<<endl<<"\t\t\t\t\t ENTER CHOICE: ";

cin>>c;

switch(c)

{

case '1':

cout<<"\t\t\t\t\t ENTER NUMBER OF STUDENTS: ";

cin>>nos;

system("CLS");

cout << "\t\t\t\t\t RESULT MANAGMENT SYSTEM\n";

pop();

subject();

ranking(c);

grade();

break;

case '2':

cout<<"\t\t\t\t\t ENTER NUMBER OF STUDENTS: ";

cin>>nos;

system("CLS");

cout << "\t\t\t\t\t RESULT MANAGMENT SYSTEM\n";

pop();

tmarks();

gpa();

ranking(c);

break;

default:

cout<<"CHOICE ENTERED IS OUT OF ORDER! PLEASE CONTACT THE OWNER.";

exit(0);

}

system("CLS");

cout << "\t\t\t\t\t RESULT MANAGMENT SYSTEM\n";

output(c);

return 0;

}

void pop()

{

for(ol=0;ol<nos;ol++)

{

DIGITS:

cout<<"ENTER CMS ID OF STUDENT(XXXXXX): ";

cin>>stddata[ol][0];

stringstream id(stddata[ol][0]);

int a,b=0;

id>>a;

if(a>=100000 && a<=999999)

{

EXIST:

b=0;

while(b!=ol)

{

if(stddata[ol][0]==stddata[b][0])

{

cout<<"ID ALREADY EXIST! PLEASE RE-ENTER CMS ID OF STUDENT(XXXXXX): ";

cin>>stddata[ol][0];

goto EXIST;

}

b++;

}

cout<<"ENTER STUDENT NAME: ";

cin>>ws;

getline(cin,stddata[ol][1]);

}

else

goto DIGITS;

system("CLS");

}

}

void subject()

{

cout << "\t\t\t\t\t RESULT MANAGMENT SYSTEM\n";

cout << "\t\t\t\t\t "<< char(201); for(int i=0; i<34; i++){cout << char(205);} cout << char(187) << endl;

cout << "\t\t\t\t\t "<<char(186) << " " << char(186) << endl;

cout << "\t\t\t\t\t "<<char(186) << " MATHEMATICS=m " << char(186) << endl;

cout << "\t\t\t\t\t "<<char(186) << " APPLIED PHYSICS=a " << char(186) << endl;

cout << "\t\t\t\t\t "<<char(186) << " FUNDAMENTALS OF PROGRAMMING=p " << char(186) << endl;

cout << "\t\t\t\t\t "<<char(186) << " ENGLISH=e " << char(186) << endl;

cout << "\t\t\t\t\t "<<char(186) << " WORKSHOP=w " << char(186) << endl;

cout << "\t\t\t\t\t "<<char(186) << " PAKISTAN STUDIES=k " << char(186) << endl;

cout << "\t\t\t\t\t "<<char(186) << " DISCERETE MATHEMATICS=d " << char(186) << endl;

cout << "\t\t\t\t\t "<<char(186) << " " << char(186) << endl;

cout << "\t\t\t\t\t "<<char(200); for(int i=0; i<34; i++){cout << char(205);} cout << char(188) << endl<<endl<<"\t\t\t\t\t ENTER THE SUBJECT: ";

cin>>sub;

if(sub=='m'||sub=='M'||sub=='a'||sub=='A'||sub=='p'||sub=='P'||sub=='e'||sub=='E'||sub=='w'||sub=='W'||sub=='k'||sub=='K'||sub=='d'||sub=='D')

marks(c,il);

else

{

cout<<"COURSE ENTERED IS NOT REGISTERED. CONTACT THE RESPECTED DEPARTMENT! \n";

exit(0);

}

}

void marks(char c,int il)

{

float asg=0,quiz=0,total=0,x=1,mrk=0,emq,ema,totalq,totala;

cout<<"\t\t\t\t\t ENTER NUMBER OF ASSIGNMENTS: ";

cin>>asg;

cout<<"\t\t\t\t\t ENTER ASSIGNMENT's TOTAL MARKS: ";

cin>>ema;

cout<<"\t\t\t\t\t ENTER NUMBER OF QUIZ: ";

cin>>quiz;

cout<<"\t\t\t\t\t ENTER QUIZ's TOTAL MARKS: ";

cin>>emq;

for(ol=0;ol<nos;ol++)

{

total=0;

cout<<"\t\t\t\t\t STUDENT NUMBER "<<ol+1<<endl;

for(x=1;x<=asg;x++)

{

cout<<"\t\t\t\t\t ENTER MARKS FOR ASSIGNMENT "<<x<<": ";

cin>>mrk;

assignment:

if(mrk>ema)

{

cout<<"\t\t\t\t\t INCORRECT MARKS.PLEASE RE-ENTER: ";

cin>>mrk;

goto assignment;

}

total+=mrk;

}

for(x=1;x<=quiz;x++)

{

cout<<"\t\t\t\t\t ENTER MARKS FOR QUIZ "<<x<<": ";

cin>>mrk;

quiz:

if(mrk>emq)

{

cout<<"\t\t\t\t\t INCORRECT MARKS.PLEASE RE-ENTER: ";

cin>>mrk;

goto quiz;

}

total+=mrk;

}

total=(total/((emq\*quiz)+(ema\*asg))\*100);

if (c=='1')

stdsm[ol]=total;

if(c=='2')

stdtm[ol][il]=total;

}

}

void ranking(char sub)

{

switch(sub)

{

case'1':

for( ol=0; ol<nos; ol++)

{

for( il=0; il<nos; il++)

{

if(stdsm[ol]>stdsm[il])

{

swap(stdsm[ol], stdsm[il]);

swap(stddata[ol][0], stddata[il][0]);

swap(stddata[ol][1], stddata[il][1]);

}

}

}

break;

case'2':

for( ol=0; ol<nos; ol++)

{

for( il=0; il<nos; il++)

{

if(stdtm[ol][8]>stdtm[il][8])

{

swap(stddata[ol][0], stddata[il][0]);

swap(stddata[ol][1], stddata[il][1]);

for (int swapCOL=0;swapCOL<9;swapCOL++)

swap(stdtm[ol][swapCOL], stdtm[il][swapCOL]);

}

}

}

}

}

void grade()

{

int marks;

for( ol=0; ol<nos; ol++)

{

marks=stdsm[ol];

if (marks>=85 && marks <=100)

stdg[ol]='A';

else if (marks>=72 && marks<=84)

stdg[ol]='B';

else if (marks>=60 && marks<=71)

stdg[ol]='C';

else if (marks>=50 && marks<=59)

stdg[ol]='D';

else if(marks>=0 && marks<=49)

stdg[ol]='F';

else

cout<<" MARKS ENTERED ARE OUT OF RANGE! \n";

}

}

void tmarks()

{

for( ol=0; ol<nos; ol++)

{

for(int i=0;i<7;i++)

{

cout << "\t\t\t\t\t RESULT MANAGMENT SYSTEM\n";

char sub;

cout << "\t\t\t\t\t "<< char(201); for(int i=0; i<34; i++){cout << char(205);} cout << char(187) << endl;

cout << "\t\t\t\t\t "<<char(186) << " " << char(186) << endl;

cout << "\t\t\t\t\t "<<char(186) << " MATHEMATICS=m " << char(186) << endl;

cout << "\t\t\t\t\t "<<char(186) << " APPLIED PHYSICS=a " << char(186) << endl;

cout << "\t\t\t\t\t "<<char(186) << " FUNDAMENTALS OF PROGRAMMING=p " << char(186) << endl;

cout << "\t\t\t\t\t "<<char(186) << " ENGLISH=e " << char(186) << endl;

cout << "\t\t\t\t\t "<<char(186) << " WOERKSHOP=w " << char(186) << endl;

cout << "\t\t\t\t\t "<<char(186) << " PAKISTAN STUDIES=k " << char(186) << endl;

cout << "\t\t\t\t\t "<<char(186) << " DISCERETE MATHEMATICS=d " << char(186) << endl;

cout << "\t\t\t\t\t "<<char(186) << " " << char(186) << endl;

cout << "\t\t\t\t\t "<<char(200); for(int i=0; i<34; i++){cout << char(205);} cout << char(188) << endl<<endl<<"\t\t\t\t\t ENTER THE SUBJECT: ";

cin>>sub;

if(sub=='m' || sub=='M')

{

il = 0;

marks(c,il);

}

if(sub=='a' || sub=='A')

{

il = 1;

marks(c,il);

}

if(sub=='p' || sub=='P')

{

il = 2;

marks(c,il);

}

if(sub=='e' || sub=='E')

{

il = 3;

marks(c,il);

}

if(sub=='w' || sub=='W')

{

il = 4;

marks(c,il);

}

if(sub=='k' || sub=='K')

{

il = 5;

marks(c,il);

}

if(sub=='d' || sub=='D')

{

il = 6;

marks(c,il);

}

system("CLS");

}

}

}

void gpa()

{

float total,gpa,avg,marks;

for(ol=0;ol<nos;ol++)

{

total=0;

for(il=0;il<7;il++)

{

marks=stdtm[ol][il];

stdtm[ol][8]+=marks;

if (marks>=85 && marks <=100)

{

gpa=4.0;

total+=gpa;

}

else if (marks>=72 && marks<=84)

{

gpa=3.5;

total+=gpa;

}

else if (marks>=60 && marks<=71)

{

gpa=3.0;

total+=gpa;

}

else if (marks>=50 && marks<=59)

{

gpa=2.0;

total+=gpa;

}

else if(marks>=0 && marks<=49)

{

gpa=1.0;

total+=gpa;

}

}

avg=total/7;

stdtm[ol][7]=avg;

}

}

void output(char c)

{

switch (c)

{

case '1':

cout<<"\n\t\t GRADE SHEET \n";

if(sub=='m'||sub=='M')

cout<<"\n\t\t CALCULUS\n";

if(sub=='a'||sub=='A')

cout<<"\n\t\t APPLIED PHYSICS\n";

if(sub=='p'||sub=='P')

cout<<"\n\t\t FUNDAMENTALS OF PROGRAMMING\n";

if(sub=='e'||sub=='E')

cout<<"\n\t\t ENGLISH\n";

if(sub=='w'||sub=='W')

cout<<"\n\t\t WORKSHOP\n";

if(sub=='k'||sub=='K')

cout<<"\n\t\t PAKISTAN STUDIES\n";

if(sub=='d'||sub=='D')

cout<<"\n\t\t DISCERETE MATHEMATICS\n";

cout<<char(218);

for(int i=0; i<53; i++)

{cout << char(196);}

cout << char(191) << endl;

cout<<"|SR NO|CMS ID| NAME |MARKS|GRADES|\n";

cout<<"|\_\_\_\_\_|\_\_\_\_\_\_|\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_|\_\_\_\_\_|\_\_\_\_\_\_|\n";

for(ol=0;ol<nos;ol++)

{

cout<<"|"<<setw(5)<<ol+1;

for(il=0;il<2;il++)

{

if(il==0)

cout<<"|"<<setw(6)<<stddata[ol][il];

if(il==1)

cout<<"|"<<setw(27)<<stddata[ol][il];

}

cout<<"|"<<setw(5)<<fixed<<setprecision(1)<<stdsm[ol];

cout<<"|"<<setw(6)<<stdg[ol]<<"|";

cout<<endl;

cout <<char(192);

for(int i=0; i<53; i++)

{cout<< char(196);}

cout << char(217) << endl;

}

average(c);

cout<<"THE GOLD MEDALIST IS:-\nCMS ID: "<<stddata[0][0]<<"\tNAME: "<<stddata[0][1]<<"\tWITH TOTAL MARKS: "<<stdsm[0];

break;

case'2':

cout<<"\n\t\t\t\t\t\t GRADE SHEET \n ";

cout<<char(218);

for(int i=0; i<112; i++)

{cout << char(196);}

cout << char(191) << endl;

cout<<" |SR NO|CMS ID| NAME |CALCULUS|PHYSICS | FOP |ENGLISH | WS | PSt | DM | GPA |\n";

cout<<" |\_\_\_\_\_|\_\_\_\_\_\_|\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_|\_\_\_\_\_\_\_\_|\_\_\_\_\_\_\_\_|\_\_\_\_\_\_\_\_|\_\_\_\_\_\_\_\_|\_\_\_\_\_\_\_\_|\_\_\_\_\_\_\_\_|\_\_\_\_\_\_\_\_|\_\_\_\_\_\_\_\_|\n";

for(ol=0;ol<nos;ol++)

{

cout<<" |"<<setw(5)<<ol+1;

for(il=0;il<2;il++)

{

if(il==0)

cout<<"|"<<setw(6)<<stddata[ol][il];

if(il==1)

cout<<"|"<<setw(27)<<stddata[ol][il];

}

for(il=0;il<8;il++)

{

cout<<"|"<<setw(8)<<fixed<<setprecision(1)<<stdtm[ol][il];

}

cout<<"|"<<endl;

}

cout <<" "<<char(192);

for(int i=0; i<112; i++)

{cout<< char(196);}

cout << char(217) << endl;

average(c);

cout<<"THE GOLD MEDALIST IS:-\nCMS ID: "<<stddata[0][0]<<"\tNAME: "<<stddata[0][1]<<"\tWITH TOTAL MARKS: "<<stdtm[0][8];

}

}

void average(char c)

{

float avg,total=0;

switch(c)

{

case '1':

cout<<"| THE CLASS AVERAGE IS: \t ";

for( ol=0;ol< nos;ol++)

total=total+stdsm[ol];

avg=total/nos;

cout<<fixed<<setprecision(1)<<avg<<"\t |\n";

cout <<char(192);

for(int i=0; i<53; i++)

{cout<< char(196);}

cout << char(217) << endl;

break;

case '2':

cout<<" | THE CLASS AVERAGE IS: \t\t ";

for(ol=0;ol<7;ol++)

{

total=0;

avg=0;

for(il=0;il<nos;il++)

{

total+=stdtm[il][ol];

avg=total/nos;

}

cout<<"|"<<setw(8)<<fixed<<setprecision(1)<<avg;

}

cout<<"|\t |\n";

cout <<" "<<char(192);

for(int i=0; i<112; i++)

{cout<< char(196);}

cout << char(217) << endl;

}

}