**PROGRAMING FUNDAMENTALS**

**ASSIGNMENT**

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**SECTION: BS(CS)19-A**

**ROLL NO: 19P-0033**

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**Task 1:**

#include <iostream>

using namespace std;

int main()

{

cout<<"FAST PSH GRADING SYSTEM: "<<endl;

int Number;

cout<<"Please Enter your Marks "<<endl;

cin>>Number;

if (Number>=90 && Number<=100)

{

cout<<"Your Grade is 'A+' "<<endl;

}

else if (Number>=86 && Number<=89)

{

cout<<"Your Grade is 'A' "<<endl;

}

else if (Number>=82 && Number<=85)

{

cout<<"Your Grade is '-A' "<<endl;

}

else if (Number>=78 && Number<=81)

{

cout<<"Your Grade is 'B+' "<<endl;

}

else if (Number>=74 && Number<=77)

{

cout<<"Your Grade is 'B' "<<endl;

}

else if (Number>=70 && Number<=73)

{

cout<<"Your Grade is '-B' "<<endl;

}

else if (Number>=66 && Number<=69)

{

cout<<"Your Grade is 'C+' "<<endl;

}

else if (Number>=62 && Number<=65)

{

cout<<"Your Grade is 'C' "<<endl;

}

else if (Number>=58 && Number<=61)

{

cout<<"Your Grade is '-C' "<<endl;

}

else if (Number>=54 && Number<=57)

{

cout<<"Your Grade is 'D+' "<<endl;

}

else if (Number>=50 && Number<=53)

{

cout<<"Your Grade is 'D' "<<endl;

}

else if (Number<50 && Number>=0)

{

cout<<"Fail "<<endl;

}

else

{

cout<<"Invalid "<<endl;

}

system ("Pause");

return 0;

}

**Task 2:**

#include<iostream>

#include<conio.h>

using namespace std;

int main()

{

cout<<"Enter units "<<endl;

int Units;

cin>>Units;

if (Units<=50)

{

cout<<"Your Bill is ="<<Units\*1.20<<"$"<<endl;

}

else if (Units>50 && Units<=150)

{

cout<<"Your Bill is ="<<(Units-50)\*1.50+50\*1.20<<"$"<<endl;

}

else if (Units>150 && Units<=250)

{

cout<<"Your Bill is ="<<(Units-150)\*1.80+100\*1.50+50\*1.20<<"$"<<endl;

}

else if (Units>250)

{

cout<<"Your Bill is ="<<(Units-250)\*2.00+100\*1.80+100\*1.50+50\*1.20<<"$"<<endl;

}

else

cout<<"Terminated "<<endl;

getch ();

}

**Task 3:**

#include <iostream>

#include <string>

using namespace std;

int main()

{

string C1,C2,C3;

float SGPA,P1,P2,P3;

cout<<"Enter course 1 Grade : ";

cin>>C1;

cout<<"Enter course 2 Grade : ";

cin>>C2;

cout<<"Enter course 3 Grade : ";

cin>>C3;

if(C1=="A+" || C1=="A")

{

P1=4.0;

}

else if(C2=="A+" || C2=="A")

{

P2=4.0;

}

if(C3=="A+" || C3=="A")

{

P3=4.0;

}

if(C1=="A-")

{

P1=3.67;

}

if(C2=="A-")

{

P2=3.67;

}

if(C3=="A-")

{

P3=3.67;

}

if(C1=="B+")

{

P1=3.33;

}

if(C2=="B+")

{

P2=3.33;

}

if(C3=="B+")

{

P3=3.33;

}

if(C1=="B")

{

P1=3.0;

}

if(C2=="B")

{

P2=3.0;

}

if(C3=="B")

{

P3=3.0;

}

if(C1=="B-")

{

P1=2.67;

}

if(C2=="B-")

{

P2=2.67;

}

if(C3=="B-")

{

P3=2.67;

}

if(C1=="C+")

{

P1=2.33;

}

if(C2=="C+")

{

P2=2.33;

}

if(C3=="C+")

{

P3=2.33;

}

if(C1=="C")

{

P1=2.0;

}

if(C2=="C")

{

P2=2.0;

}

if(C3=="C")

{

P3=2.0;

}

if(C1=="C-")

{

P1=1.67;

}

if(C2=="C-")

{

P2=1.67;

}

if(C3=="C-")

{

P3=1.67;

}

if(C1=="D+")

{

P1=1.33;

}

if(C2=="D+")

{

P2=1.33;

}

if(C3=="D+")

{

P3=1.33;

}

if(C1=="D")

{

P1=1.0;

}

if(C2=="D")

{

P2=1.0;

}

if(C3=="D")

{

P3=1.0;

}

if(C1=="nothing")

{

P1=0.0;

}

if(C2=="nothing")

{

P2=0.0;

}

if(C3=="nothing")

{

P3=0.0;

}

cout<<"Point1 "<<P1<<endl;

cout<<"Point2 "<<P2<<endl;

cout<<"Point3 "<<P3<<endl;

SGPA=(P1+P2+P3)/3.0;

cout<<"SGPA is : "<<SGPA<<endl;

system ("Pause");

return 0;

}

**Task 4:**

#include<iostream>

#include<cmath>

using namespace std;

int main()

{

int A,B,C,D;

cout<<" ax^2+bx+c=0 and a!=0"<<endl;

cout<<"Enter Value of x^2 "<<endl;;

cin>>A;

cout<<"Enter Value of x "<<endl;

cin>>B;

cout<<"Enter the Value of constant c "<<endl;

cin>>C;

if(A==0)

{

cout<<"Error! A must be not equal to 0"<<endl;;

}

D=((pow(B,2))-(4\*A\*C));

if(D==0)

{

cout<<"This equation has only one root."<<endl;

}

else if(D<0)

{

cout<<"This equation has Two complex roots."<<endl;

}

else if(D>0)

{

cout<<"This equation has two real roots."<<endl;;

}

system("Pause");

return 0;

}

**Task 5:**

#include <iostream>

using namespace std;

int main()

{

const int Cookies =24;

const int container =75;

int Boxes,TotalC,LeftOverBoxes,BoxC,ContainerBoxes,TotalBoxes,TotalContainers,LeftOverC;

cout<<"Enter the Total Number of Cookies "<<endl;

cin>>TotalC;

cout<<"Enter the Number of Cookies in a Box"<<endl;

cin>>BoxC;

cout<<"Enter the Number of Boxes in a Container"<<endl;

cin>>ContainerBoxes;

Boxes=TotalC/BoxC;

LeftOverC=TotalC%BoxC;

TotalContainers=Boxes/ContainerBoxes;

LeftOverBoxes=Boxes%ContainerBoxes;

cout<<"Total Number of Boxes="<<Boxes<<endl;

cout<<"Total Number of Containers="<<TotalContainers<<endl;

cout<<"Total Leftover Boxes="<<LeftOverBoxes<<endl;

cout<<"Total Number of LeftOver Cookies="<<LeftOverC<<endl;

system("Pause");

return 0;

}