Assignment – 1

1) WAP to convert Celsius to Fahrenheit ?

#include<conio.h>

#include<iostream.h>

void celsius(float c);

void main()

{

float f,c;

clrscr();

cout<<"enter the celsius : ";

cin>>c;

celsius(c);

getch();

}

void celsius(float c)

{

float f;

f=(c\*9/5)+32;

cout<<"\n celsius convert ferenhit : "<<f;

}

2) WAP to calculate Simple Interest and Compound Interest?

[ Compound Interest Formula : pow(p\*(1+r/100),n) ]

date : 16/07/2016

#include<iostream.h>

#include<conio.h>

#include<math.h>

class interest

{

int a,b,c,r,p,n,sinterest,cinterest;

public:

void getdata(void);

void display(void);

};

void interest :: getdata(void)

{

cout<<"\n\t\t enter a :";

cin>>a;

cout<<"\n\t\t enter b :";

cin>>b;

cout<<"\n\t\t enter c :";

cin>>c;

cout<<"\n\t\t enter r :";

cin>>r;

cout<<"\n\t\t enter p :";

cin>>p;

cout<<"\n\t\t enter n :";

cin>>n;

sinterest=a\*b\*c/100;

cout<<"\n\t\t simple interest is :"<<sinterest;

cinterest=pow(p\*(1+(r/100)),n);

cout<<"\n\t\t compound interest is :"<<cinterest;

getch();

}

void interest :: display(void)

{

cout<<"\n\t\t enter a :"<<a;

cout<<"\n\t\t enter b :"<<b;

cout<<"\n\t\t enter c :"<<c;

cout<<"\n\t\t enter r :"<<r;

cout<<"\n\t\t enter p :"<<p;

cout<<"\n\t\t enter n :"<<n;

}

int main()

{

clrscr();

interest i;

i.getdata();

i.display();

return 0;

}

3) WAP to find Greatest of Two Number?

date : 16/07/2016

#include<conio.h>

#include<iostream.h>

void greatest();

void main()

{

clrscr();

greatest();

getch();

}

void greatest()

{

int a,b;

clrscr();

cout<<"\n\t\tenter a :";

cin>>a;

cout<<"\n\t\tenter b :";

cin>>b;

if(a>b)

{

cout<<"\n\n\t\t\t----- a is greatest -----";

}

else

{

cout<<"\n\n\t\t\t----- b is greatest -----";

}

}

4) WAP to find Greatest of Three Number?

date : 16/07/2016

#include<conio.h>

#include<iostream.h>

void greatest();

void main()

{

clrscr();

greatest();

getch();

}

void greatest()

{

int a,b,c;

clrscr();

cout<<"\n\t\tenter a :";

cin>>a;

cout<<"\n\t\tenter b :";

cin>>b;

cout<<"\n\t\tenter c :";

cin>>c;

if(a>b)

{

if(a>c)

{

cout<<"\n\n\t\t\t---- a is greatest ----";

}

else

{

cout<<"\n\n\t\t\t---- c is greatest ----";

}

}

else

{

if(b>c)

{

cout<<"\n\n\t\t\t---- b is greatest ----";

}

else

{

cout<<"\n\n\t\t\t---- c is greatest ----";

}

}

}

5) WAP to Calculate Result of student?

[Hint: Calculate Percentage and find his/her Grade according to percentage]

date : 16/07/2016

#include<conio.h>

#include<iostream.h>

class student

{

int rollno,sub1,sub2,sub3,total;

char name,grade;

float per;

public:

void getdata(void);

void display(void);

};

void student :: getdata(void)

{

cout<<"\n\t\t enter the rollno : ";

cin>>rollno;

cout<<"\n\t\t enter the name : ";

cin>>name;

cout<<"\n\t\tenter the mark of sub1 :";

cin>>sub1;

cout<<"\n\t\tenter the mark of sub2 :";

cin>>sub2;

cout<<"\n\t\tenter the mark of sub3 :";

cin>>sub3;

total=sub1+sub2+sub3;

cout<<"\n\t\t---- the total of 3 subjects is : "<<total;

per=total/3;

cout<<"\n\t\t---- the percentage is : "<<per;

}

void student :: display(void)

{

cout<<"\n\n\t\trollno :"<<rollno;

cout<<"\n\t\tname :"<<name;

cout<<"\n\t\tsub1 :"<<sub1;

cout<<"\n\t\tsub2 :"<<sub2;

cout<<"\n\t\tsub3 :"<<sub3;

cout<<"\n\t\ttotal :"<<total;

cout<<"\n\t\tper :"<<per;

cout<<"\n\t\tgrade :";

if(per>75)

{

cout<<"\n\t\t---- DISTINCTION ----";

}

else if(per>60 && per<=75)

{

cout<<"\n\t\t---- FIRST CLASS ----";

}

else if(per>50 && per<=60)

{

cout<<"\n\t\t---- SECOND CLASS ----";

}

else if(per>30 && per<=50)

{

cout<<"\n\t\t---- THIRD CLASS ----";

}

else

{

cout<<"\n\t\t---- ATKT ----";

}

getch();

}

int main()

{

clrscr();

student s;

s.getdata();

s.display();

return 0;

}

6) WAP to calculate basic salary and Net Salary of employ according to

following :

When basic salary if greater than 8000 and Smaller than 12000 provide

HRA=10%, DA=8%, PF=6% Else Basic Salary Smaller than 8000 HRA=8%,

DA=4%, PF=2%.

date : 16/07/2016

#include<conio.h>

#include<iostream.h>

void nsalary();

void main()

{

clrscr();

nsalary();

getch();

}

void nsalary()

{

float salary,hra,da,pf,nsalary;

clrscr();

cout<<"\n\t\tenter the salary :";

cin>>salary;

if(salary>8000 && salary<=12000)

{

hra=salary\*10/100;

da=salary\*8/100;

pf=salary\*6/100;

}

else if(salary<8000)

{

hra=salary\*8/100;

da=salary\*4/100;

pf=salary\*2/100;

}

cout<<"\n\t\t\t hra is : "<<hra;

cout<<"\n\t\t\t da is : "<<da;

cout<<"\n\t\t\t pf is : "<<pf;

nsalary=salary+hra+da-pf;

cout<<"\n\n\t\t\t net salary is : "<<nsalary;

}

7) WAP to accept character and print the rainbow color ?

[Hint : VIBGYOR]

date : 16/07/2016

#include<conio.h>

#include<iostream.h>

void main()

{

char ch;

do

{

clrscr();

cout<<"\n\t\tenter the rainbow colour :";

cout<<"\n\t\tv, i , b , g , y , o , r ";

cout<<" \n\t\tenter 'e' for exit";

cout<<"\n\t\tenter your choice : ";

cin>>ch;

switch(ch)

{

case 'v':

cout<<"colour is violet";

break;

case 'i':

cout<<"colour is indigo";

break;

case 'b':

cout<<"colour is blue";

break;

case 'g':

cout<<"colour is green";

break;

case 'y':

cout<<"colour is yellow";

break;

case 'o':

cout<<"colour is orange";

break;

case 'r':

cout<<"colour is red";

break;

case 'e':

break;

default :

cout<<"enter your proper colour button :";

break;

}

getch();

}

while(ch!='e');

getch();

}

8) WAP to accept number between 1 to 10 and print it in words.

date : 16/07/2016

#include<iostream.h>

#include<conio.h>

int main()

{

int ch;

do

{

clrscr();

cout<<"\n\t\t1. 1";

cout<<"\n\t\t2. 2";

cout<<"\n\t\t3. 3";

cout<<"\n\t\t4. 4";

cout<<"\n\t\t5. 5";

cout<<"\n\t\t6. 6";

cout<<"\n\t\t7. 7";

cout<<"\n\t\t8. 8";

cout<<"\n\t\t9. 9";

cout<<"\n\t\t10. 10";

cout<<"\n\t\t11. exit";

cout<<"\n\t\t enter your choice :";

cin>>ch;

switch(ch)

{

case 1:

cout<<"\n\t\tone";

break;

case 2:

cout<<"\n\t\ttwo";

break;

case 3:

cout<<"\n\t\tthree";

break;

case 4:

cout<<"\n\t\tfour";

break;

case 5:

cout<<"\n\t\tfive";

break;

case 6:

cout<<"\n\t\tsix";

break;

case 7:

cout<<"\n\t\tseven";

break;

case 8:

cout<<"\n\t\teight";

break;

case 9:

cout<<"\n\t\tnine";

break;

case 10:

cout<<"\n\t\tten";

break;

case 11:

break;

default :

cout<<"enter proper choice";

break;

}

getch();

}

while(ch!=11);

getch();

return 0;

}

9) 2, 4, 8, 16, 32……..

date : 23/07/2016

#include<conio.h>

#include<iostream.h>

void series();

void main()

{

int a=2,b=2,c=2,n;

clrscr();

series();

getch();

}

void series()

{

int a=2,b=2,c=2,n;

cout<<"enter the value you want :";

cin>>n;

while(c<=n)

{

cout<<c<<" ";

c=a\*b;

a=c;

}

cout<<"...";

}

10) X+ X2/2! + X3/3! + X4/4!+……….+ Xn/n!

#include<iostream.h>

#include<conio.h>

#include<math.h>

void value(int n);

void main()

{

int n;

clrscr();

cout<<"\n\t enter the value of n : ";

cin>>n;

value(n);

getch();

}

void value(int n)

{

int i=1;

cout<<i;

for(int j=2;j<=n;j++)

{

int s=1;

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

{

s=s\*i;

}

cout<<"+";

cout<<pow(2,(i-1))<<"/"<<s;

}

}

11) 1

22

333

4444

55555

date : 23/07/201

#include<conio.h>

#include<iostream.h>

void pattern();

void main()

{

clrscr();

pattern();

getch();

}

void pattern()

{

int i,j;

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

{

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

{

cout<<i;

}

cout<<"\n";

}

}

12) 55555

4444

333

22

1

#include<conio.h>

#include<iostream.h>

void pattern();

void main()

{

clrscr();

pattern();

getch();

}

void pattern()

{

int i,j,k;

for(i=5;i>=1;i--)

{

for(j=5;j>i;j--)

{

cout<<" ";

}

for(k=1;k<=i;k++)

{

cout<<i;

}

cout<<"\n";

}

}

13) \* \* \* \* \* \* \* \* \* \* \* \* \*

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#include<conio.h>

#include<iostream.h>

void draw();

void main()

{

clrscr();

draw();

getch();

}

void draw()

{

int i,j,n;

cout<<"\n\t enter the value of n : ";

cin>>n;

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

{

for(j=n;j>=1;j--)

{

if(j>=i)

{

cout<<"\*";

}

else

{

cout<<" ";

}

}

for(j=2;j<=n;j++)

{

if(j>=i)

{

cout<<"\*";

}

else

{

cout<<" ";

}

}

cout<<"\n";

}

}

14) 1

1 2

1 2 3

1 2 3 4

1 2 3 4 5

1 2 3 4 5 6

1 2 3 4 5 6 7

#include<conio.h>

#include<iostream.h>

void pattern();

void main()

{

clrscr();

pattern();

getch();

}

void pattern()

{

int i,j,n;

clrscr();

cout<<"enter how many rows you want in triangle :";

cin>>n;

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

{

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

{

cout<<j;

}

cout<<"\n";

}

}

15) WAP to accept matrix of m x n and print that matrix.

#include<conio.h>

#include<iostream.h>

void celsius(float c);

void main()

{

float f,c;

clrscr();

cout<<"enter the celsius : ";

cin>>c;

celsius(c);

getch();

}

void celsius(float c)

{

float f;

f=(c\*9/5)+32;

cout<<"\n celsius convert ferenhit : "<<f;

}

Assignment -2

1) Write a program to maintain a telephone directory. Use add () and show () methods to add new entries and

display the telephone numbers of person when the name of the person is given.

#include<iostream.h>

#include<conio.h>

#include<string.h>

class person

{

char name[3][10];

int no[3];

clrscr();

public:

void add(void);

void show(void);

};

void person::add(void)

{

int i;

for(i=0;i<3;i++)

{

cout<<" enter the name : ";

cin>>name[i];

cout<<" enter the no : ";

cin>>no[i];

}

}

void person::show(void)

{

char pname[10];

cout<<" enter pname : ";

cin>>pname;

for(int i=0;i<3;i++)

{

if(strcmp(pname,name[i])==0)

{

cout<<"\n"<<name[i];

cout<<"\n"<<no[i];

}

}

}

const int size=1;

void main()

{

person p[size];

clrscr();

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

{

cout<<"\n"<<i+1;

p[i].add();

}

cout<<"\n";

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

{

cout<<"\n";

p[i].show();

}

getch();

}

2) Create two classes DM and DB which store the value of the distances. DM stores distance in meters and

centimeters and DB stores distance in feet and inches. Write a program that can add one object of DM with

another object of DB. Use a friend function to carry out the addition operation. And this function will

display answer in meter and centimeter.

#include <iostream.h>

#include <conio.h>

class db;

class dm

{

float mt;

int cm;

public:

void getdata(void);

void display(void);

friend dm add(dm,db);

};

class db

{

int feet;

float inches;

public:

void getdata(void);

void display(void);

friend dm add(dm,db);

};

void dm :: getdata(void)

{

clrscr();

cout<<"\n\nEnter Values for metres :- ";

cin>>mt;

cout<<"Enter Values for centimetres:- ";

cin>>cm;

}

void dm :: display(void)

{

cout<<"\n\nThe value of distance in metres is "<<mt;

cout<<"\nThe value of distance in Centimetres is "<<cm;

}

void db :: getdata(void)

{

clrscr();

cout<<"\n\nEnter Values for feet :-";

cin>>feet;

cout<<"Enter Values for inches :-";

cin>>inches;

}

void db :: display(void)

{

cout<<"\n\nThe value of distance in feet is "<<feet;

cout<<"\nThe value of distance in inches is "<<inches;

}

dm add(dm a,db b)

{

dm temp;

temp.cm=a.cm+(b.feet\*30)+((b.inches\*30)/12.0);

temp.mt=a.mt+(temp.cm % 100);

return(temp);

}

void main()

{

dm a;

a.getdata();

db b;

b.getdata();

clrscr();

cout<<"\n\t\tAFTER CONVERSION AND THEIR ADDITION IS PERFORMED\n";

dm extra;

extra=add(a,b);

extra.display();

getch();

}

4) Write a program that consists of two classes, Rupee and Dollar. Provide conversion function to carry out

conversion from object of one type to another.

#include<iostream.h>

#include<conio.h>

class rupees;

class dollar

{

public:

float doll;

dollar()

{

doll=0;

}

dollar(float doll1)

{

doll=doll1;

}

int getdoll()

{

return(doll);

}

void display()

{

cout<<"\n\n Dollar:"<<"$"<<doll;

}

};

class rupee

{

public:

float rup;

rupee(float rup1)

{

rup=rup1;

}

rupee(dollar d)

{

rup=d.getdoll()\*(51.1265);

}

operator dollar()

{

dollar d;

d.doll=rup\*(0.0196);

return d;

}

void display()

{

cout<<"\n\n Rupees:"<<"Rs"<<rup;

}

};

void main() {

float d1,r1;

clrscr();

cout<<"\n\t\t TYPE CONVERSION";

cout<<"\n\t\t \*\*\*\*\*\*\*\*\*\*\*\*";

cout<<"\n\n Enter the rupees:";

cin>>r1;

rupee rs(r1);

dollar dr;

dr=rs;

cout<<"\n\n After Conversion";

dr.display();

cout<<"\n\n Enter the Dollar:";

cin>>d1;

dollar dr1(d1);

rs=dr1;

cout<<"\n\n After Conversion";

rs.display();

getch();

}

5) Define a class to represent a bank account for handling 10 customers. Include the following members.

Data members:

1) Name of the A/c Holder

2) Account number

3) Balance amount in the account

Member function:

1) To display the values

2) To deposit an amount

3) To withdraw an amount

#include<iostream.h>

#include<conio.h>

class bank

{

char name[20];

long int ac;

long int salary;

public:

void getdata();

void deposit(int);

void withdraw(int);

void display(long int);

};

void bank::getdata()

{

cout<<"enter the name:";

cin>>name;

cout<<"enter the account number:";

cin>>ac;

cout<<"enter the salary:";

cin>>salary;

}

void bank::deposit(int x)

{

salary=salary+x;

}

void bank::withdraw(int x)

{

if(salary>=x)

{

salary=salary-x;

}

else

{

cout<<"no found the money";

}

}

void bank::display(long int accno)

{

if(ac==accno)

{

cout<<"Account holder name:"<<name<<endl;

cout<<"Account number:"<<ac<<endl;

cout<<"Account balance:"<<salary<<endl;

char ch;

cout<<"enter the d for deposit and \n w for withdraw:";

cin>>ch;

switch(ch)

{

case 'd':

int x;

cout<<"deposit the money";

cin>>x;

deposit(x);

break;

case 'w':

cout<<"withdraw the money:";

cin>>x;

withdraw(x);

break;

default:

cout<<"enter the proper choice:";

}

cout<<"Account name:"<<name<<endl;

cout<<"Account number:"<<ac<<endl;

cout<<"Account balance:"<<salary<<endl;

}

}

void main()

{

bank a[10];

clrscr();

int i;

for(i=0;i<3;i++)

a[i].getdata();

long int accno;

cout<<"enter the account number:";

cin>>accno;

for(i=0;i<3;i++)

{

a[i].display(accno);

}

getch();

}

6) Create a class matrix and do the following:

---Add two matrix

---Multiply two matrix

---subtract two matrix

#include<iostream.h>

#include<conio.h>

class matrix

{

int a[20][20],b[20][20];

int m,n,p,q;

public:

void create();

void display();

void add();

void mul();

void sub();

};

void matrix::create()

{

int i,j;

cout<<"\nenter the value of first row:";

cin>>m;

cout<<"\nenter the value of column:";

cin>>n;

cout<<"\nenter the value of secondrow:";

cin>>p;

cout<<"\nenter the value of column:";

cin>>q;

cout<<"first matrix:";

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

{

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

{

cin>>a[i][j];

}

}

cout<<"second matrix:";

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

{

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

{

cin>>b[i][j];

}

}

}

void matrix::display()

{

int i,j;

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

{

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

{

cout<<"\t"<<a[i][j];

}

}

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

{

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

{

cout<<"\t"<<b[i][j];

}

cout<<"\n";

}

}

void matrix::add()

{

int c[20][20],i,j;

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

{

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

{

c[i][j]=a[i][j]+b[i][j];

}

cout<<"\n";

}

cout<<"addition of two no:";

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

{

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

{

cout<<"\t"<<c[i][j];

}

}

cout<<"\n";

}

void matrix::sub()

{

int c[20][20],i,j;

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

{

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

{

c[i][j]=a[i][j]-b[i][j];

}

cout<<"\n";

}

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

{

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

{

cout<<"\t"<<c[i][j];

}

}

cout<<"\n";

}

void matrix::mul()

{

int i,j;

int c[20][20];

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

{

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

{

c[i][j]=a[i][j]\*b[i][j];

}

cout<<"\n";

}

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

{

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

{

}

}

}

7) Write a program that consists of 2 class time12 and time24. The first maintain time on 12-hour basis,

whereas the other one maintain time on 24-hour basis. Provide conversion function to carry out conversion

from object of one type to another.

#include<iostream.h>

#include<conio.h>

class time24

{

int hour,minutes;

public:

time24(int a,int b)

{

hour=a;

minutes=b;

}

void display()

{

cout<<"\n24\_hours : "<<hour<<":"<<minutes;

}

int get\_h()

{

return hour;

}

int get\_m()

{

return minutes;

}

};

class time12

{

int hour,minutes;

public:

time12()

{

hour=0;

minutes=0;

}

time12(time24 c)

{

hour=c.get\_h();

minutes=c.get\_m();

}

void display()

{

if(hour>12)

{

hour=hour-12;

cout<<"\n 12.hours : "<<hour<<":"<<minutes<<":"<<"pm";

}

else

{

cout<<"\n 12.hours : "<<hour<<":"<<minutes<<" "<<"am";

}

}

};

int main()

{

int a,b;

clrscr();

cout<<"enter the 24-hour time : "<<"\n";

cin>>a;

cout<<"\nenter the minute in 24 formate : ";

cin>>b;

time24 a1(a,b);

a1.display();

time12 b1;

b1=a1;

b1.display();

getch();

return 0;

}

8) Write a program to find addition of 1 to 200 using + operator overloading.

#include<iostream.h>

#include<conio.h>

class insertion

{

public:

void operation+();

};

void main()

{

clrscr();

insertion i1;

i1;

getch();

}

void insertion::operator +()

{

int ans=0;

inti;

for(i=0;i<=200;i++)

{

ans=ans+i;

}

cout<<"Ans is:"<<ans;

}

9) Create a class with at least two data members and overload >> and << operators.

#include<iostream.h>

#include<conio.h>

class over

{

int value;

public:

void setvalue(int temp)

{

value=temp;

}

over operator+(over ob)

{

over t;

t.value=value+ob.value;

return(t);

}

void display()

{

cout<<value<<endl;

}

};

void main()

{

over obj1,obj2,result;

clrscr();

int a,b;

cout<<"enter the value of complex number a:";

cin>>a;

cin>>b;

obj1.setvalue(a);

obj2.setvalue(b);

result=obj1+obj2;

cout<<"input values:";

obj1.display();

obj2.display();

cout<<"Result:";

result.display();

getch();

}

10) Create a class “sample” that stores the weight and height. Ovreload the (+=)/(-=) operators to add two

values.

#include<iostream.h>

#include<conio.h>

class height\_weight

{

int height;

int weight;

public:

height\_weight(){}

height\_weight(int h,int w)

{

height=h;

weight=w;

}

friend void operator+=(height\_weight h1,height\_weight h2);

friend void operator-=(height\_weight h1,height\_weight h2);

};

void operator+=(height\_weight h1,height\_weight h2)

{

height\_weight h3;

h3.height=h1.height+h2.height;

h3.weight=h1.weight+h2.weight;

cout<<"\naddition of height:"<<h3.height;

cout<<"\naddition of weight:"<<h3.weight;

}

void operator-=(height\_weight h1,height\_weight h2)

{

height\_weight h3;

h3.height=h1.height-h2.height;

h3.weight=h1.weight-h2.weight;

cout<<"\nsubtraction of height:"<<h3.height;

cout<<"\nsubtarction of weight:"<<h3.weight;

}

void main()

{

int a,b,c,d;

clrscr();

cout<<"enter the height1:";

cin>>a;

cout<<"enter the weight1:";

cin>>b;

cout<<"enter the height2:";

cin>>c;

cout<<"enter the weight2:";

cin>>d;

height\_weight h1(a,b);

height\_weight h2(c,d);

h1+=h2;

h1-=h2;

getch();

}

11) Wap to compare and concatenate two strings using == and + operators overloading respectively.

#include<iostream.h>

#include<conio.h>

#include<string.h>

class string

{

public:

char \*s;

int size;

void getstring(char \*str)

{

size=strlen(str);

s=new char[size];

strcpy(s,str);

}

void operator+(string);

};

void string::operator+(string ob)

{

size=size+ob.size;

s=new char[size];

strcat(s,ob.s);

cout<<"\nconcanated string is:"<<s;

}

void main()

{

string ob1,ob2;

char \*string1,\*string2;

clrscr();

cout<<"\nenter the first string:";

cin>>string1;

ob1.getstring(string1);

cout<<"\nenter the second string:";

cin>>string2;

ob2.getstring(string2);

ob1+ob2;

getch();

}

12) Create a class FLOAT that contains two float data member. Overload all four arithmetic operators so that they operate on object of float. The operators should be overloaded using friend function.

#include<iostream.h>

#include<conio.h>

class FLOAT

{

float no;

public:

void getdata()

{

cout<<"\nenter the floating no:";

cin>>no;

}

void display()

{

cout<<"\nanswer is:"<<no;

}

FLOAT operator+(FLOAT);

FLOAT operator\*(FLOAT);

FLOAT operator-(FLOAT);

FLOAT operator/(FLOAT);

};

FLOAT FLOAT::operator+(FLOAT a)

{

FLOAT temp;

temp.no=no+a.no;

return temp;

}

FLOAT FLOAT::operator\*(FLOAT b)

{

FLOAT temp;

temp.no=no\*b.no;

return temp;

}

FLOAT FLOAT::operator-(FLOAT b)

{

FLOAT temp;

temp.no=no-b.no;

return temp;

}

FLOAT FLOAT::operator/(FLOAT b)

{

FLOAT temp;

temp.no=no/b.no;

return temp;

}

void main()

{

FLOAT a,b,c;

clrscr();

a.getdata();

b.getdata();

c=a+b;

cout<<"\nafter addittion of two objects";

c.display();

cout<<"\nafter multiplication of two objects";

c=a\*b;

c.display();

cout<<"\nafter subtraction of two objects";

c=a-b;

c.display();

cout<<"\nafter division of two objects";

c=a/b;

c.display();

getch();

}

Assignment – 3

1) Create a class emp which consists of members empno, empname. Derive a new class income from emp class. Income class consists of data members like basic salary, da, hra. Derive another class expense from emp which consists of 3 data members income tax, laundry and food. Derive a new class from income and expense and find out net saving of employee.

#include<iostream.h>

#include<conio.h>

class emp

{

protected:

int no;

char name[20];

public:

void get\_emp()

{

cout<<"\n enter the no : ";

cin>>no;

cout<<"\n enter the name : ";

cin>>name;

}

void display\_emp()

{

cout<<"\n emp\_no : "<<no;

cout<<"\n emp\_name : "<<name;

}

};

class income:public virtual emp

{

protected:

int salary,hra,da;

public:

void geti()

{

cout<<"\n enter the salary : ";

cin>>salary;

cout<<"\n enter the hra : ";

cin>>hra;

cout<<"\n enter the da : ";

cin>>da;

}

void displayi()

{

cout<<"\n salary : "<<salary;

cout<<"\n hra : "<<hra;

cout<<"\n da : "<<da;

}

};

class expense:virtual public emp

{

protected:

int income\_tax;

int laundry;

int food;

public:

void gete()

{

cout<<"\n enter the income tax : ";

cin>>income\_tax;

cout<<"\n enter the laundry : ";

cin>>laundry;

cout<<"\n enter the food : ";

cin>>food;

}

void displaye()

{

cout<<"\n income tax : "<<income\_tax;

cout<<"\n laundry : "<<laundry;

cout<<"\n food : "<<food;

}

};

class net\_salary:public income,public expense

{

protected:

int ns;

public:

void display(void);

};

void net\_salary::display(void)

{

ns=hra+da+salary-income\_tax-laundry-food;

cout<<"\n net saving of employee is : "<<ns;

}

void main()

{

net\_salary e;

clrscr();

e.get\_emp();

e.display\_emp();

e.geti();

e.displayi();

e.gete();

e.displaye();

e.display();

getch();

}

2) Create a base class shape and declare 2 data members x and y in shape. Derive two classes rectangle and triangle from shape class. Write function to calculate area in rectangle and triangle class.

i. Area of rectangle=x\*y

ii.Area of triangle=1/2\*x\*y

#include<iostream.h>

#include<conio.h>

class shape

{

protected:

int x,y;

public:

void get\_shape()

{

cout<<"\nenter the x:";

cin>>x;

cout<<"\nenter the y:";

cin>>y;

}

void display\_shape()

{

cout<<"\nx:"<<x;

cout<<"\ny:"<<y;

}

};

class rectangle:public shape

{

protected:

int rec;

public:

void display\_rec()

{

rec=x\*y;

cout<<"\nrec"<<rec;

}

};

class triangle:public shape

{

protected:

float tri;

public:

void display\_tri()

{

tri=0.5\*x\*y;

cout<<"\ntri:"<<tri;

}

};

void main()

{

rectangle r;

triangle t;

clrscr();

r.get\_shape();

r.display\_shape();

r.display\_rec();

t.get\_shape();

t.display\_shape();

t.display\_tri();

getch();

}

3) Create class vehicle which contain data member registration no and fuel type. Make getdata() function to input data. Create a class two wheeler from vehicle which contain data members distance and mileage. Make getdata function to input value and display the information with fuel used.

#include<iostream.h>

#include<conio.h>

class vehical

{

protected:

int no;

char fuel[20];

public:

void getv()

{

cout<<"\nenter the registration no : ";

cin>>no;

cout<<"\nenter the fuel type : ";

cin>>fuel;

}

void displayv()

{

cout<<"\n registration no : "<<no;

cout<<"\nfuel type : "<<fuel;

}

};

class two\_wheeler:public vehical

{

protected:

float mileage;

float distance;

float fuel;

public:

void get\_t\_w()

{

cout<<"\n enter the mileage : ";

cin>>mileage;

cout<<"\n enter the distance : ";

cin>>distance;

}

void display\_t\_w()

{

cout<<"\n mileage : "<<mileage;

cout<<"\n distance : "<<distance;

}

void fule()

{

fuel=distance/mileage;

cout<<"\n using fuel is : "<<fuel;

}

};

void main()

{

two\_wheeler tw;

clrscr();

tw.getv();

tw.displayv();

tw.get\_t\_w();

tw.display\_t\_w();

tw.fule();

getch();

}

4) Class student contains roll no, name and course as data member and input\_student and display\_student as member function. A derived class exam is created from the class student with publicly inherited. The derived class contains marks1, mark2, mark3 as marks of three subjects and input\_marks and display\_result as member functions. Create an array of object of the exam class and display the result of 5 students.

#include<iostream.h>

#include<conio.h>

class student

{

protected:

int no;

char name[20],course [20];

public:

void gets()

{

cout<<"\nenter the no:";

cin>>no;

cout<<"\nenter the name:";

cin>>name;

cout<<"\nenter the course:";

cin>>course;

}

void displays()

{

cout<<"\nroll\_no:"<<no;

cout<<"\nname:"<<name;

cout<<"\ncourse:"<<course;

}

};

class mark:public student

{

protected:

int m1,m2,m3;

int total;

public:

void get\_mark()

{

cout<<"\nenter the mark 1:";

cin>>m1;

cout<<"\nenter the mark 2:";

cin>>m2;

cout<<"\nenter the mark 3:";

cin>>m3;

}

void display\_mark()

{

cout<<"\nmark1:"<<m1;

cout<<"\nmark2:"<<m2;

cout<<"\nmark3:"<<m3;

}

void result()

{

total=m1+m2+m3;

cout<<"\n\ntotal:"<<total;

}

};

const int size=5;

void main()

{

mark s[size];

int i;

clrscr();

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

{

cout<<"\ndetails of student"<<i+1;

s[i].gets();

s[i].get\_mark();

}

cout<<"\n";

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

{

cout<<"\nstudent"<<i+1;

s[i].displays();

s[i].display\_mark();

s[i].result();

}

// s[i].get\_mark();

// s[i].display\_mark();

// s[i].result();

getch();

}

6) Write a program using this pointer to find out the greatest number obtained among two Number.

#include<iostream.h>

#include<conio.h>

class no

{

int a;

public:

no(int x)

{

a=x;

}

no & no ::greater(no & p)

{

if(p.a>=a)

return p;

else

return \*this;

}

void getdata(void)

{

cout<<"\nenter the number a : ";

cin>>a;

}

void display(void)

{

cout<<"\n A : "<<a;

}

};

void main()

{

int m,n;

clrscr();

cout<<" enter the value : ";

cin>>m;

cout<<" enter the value : ";

cin>>n;

no n1(m),n2(n);

no q=n1.greater(n2);

cout<<"\n greatest value is : ";

q.display();

getch();

}

7) Class polygon contains data member width and height and public method set\_value() to assign values to width and height. Class Rectangle and Triangle are inherited from polygon class. Both the classes contain public method calculate\_area() to calculate the area of Rectangle and Triangle. Use base class pointer to access the derived class object and show the area calculated.

#include<iostream.h>

#include<conio.h>

class polygon

{

public:

float width,height;

void set\_value()

{

cout<<"\nenter the width:";

cin>>width;

cout<<"\nenter the height:";

cin>>height;

}

void display()

{

cout<<"\nwidth"<<width;

cout<<"\nheight"<<height;

}

};

class rectangle:public polygon

{

public:

int a;

void cal\_area()

{

a=width\*height;

cout<<"\narea of rectangle:"<<a;

}

};

class triangle:public polygon

{

public:

int b;

void cal\_area()

{

b=0.5\*width\*height;

cout<<"\ntriangle:"<<b;

}

};

void main()

{

polygon \*p;

rectangle \*r;

rectangle rec;

polygon p1;

clrscr();

p=&rec;

p->set\_value();

r=&rec;

r->cal\_area();

triangle \*t;

triangle tri;

p=&tri;

t=&tri;

p->set\_value();

t->cal\_area();

getch();

}

8) Write a program to create a class shape with functions to find area of and display the name of the shape and other essential component of the class. Create derived classes circle, rectangle and trapezoid each having overridden functions area and display. Write a suitable program to illustrate virtual functions.

#include<iostream.h>

#include<conio.h>

class shape

{

public:

int l,b;

virtual void getdata()

{

cout<<"\nenter the l:"<<l;

cin>>l;

cout<<"\nenter the b:"<<b;

cin>>b;

}

void display()

{

cout<<l;

cout<<b;

}

};

class rectangle:public shape

{

float x;

public:

void getdata()

{

cout<<"\nenter the value l:";

cin>>l;

cout<<"\nenter the value b:";

cin>>b;

}

void display()

{

x=l\*b;

cout<<x;

}

};

class triangle:public shape

{

float a;

public:

void getdata()

{

cout<<"\nenter the value of l:";

cin>>l;

cout<<"\nenter the value of b:";

cin>>b;

}

void display()

{

a=0.5\*l\*b;

cout<<a;

}

};

void main()

{

shape s;

rectangle r;

triangle t;

shape \*pt;

clrscr();

pt=&s;

pt->getdata();

pt=&r;

pt->getdata();

pt->display();

pt=&t;

pt->getdata();

pt->display();

getch();

}