Assignment - 25

A Job Ready Bootcamp in C++, DSA and IOT MySirG Classes and Objects

1. Define a class Complex to represent a complex number. Declare instance member variables to store real and imaginary part of a complex number, also define instance member functions to set values of complex number and print values of complex number
2. #include<iostream>
3. using namespace std;
4. class Complex
5. {
6. private:
7. int real;
8. int img;
9. public:
10. void set(int r, int i)
11. {
12. real=r;
13. img=i;
14. }
15. void print(Complex c)
16. {
17. cout<<real<<" + "<<img<<"i"<<endl;
18. cout<<c.real<<" + "<<c.img<<"i"<<endl;
19. }
20. void add(Complex c)
21. {
22. cout<<real+c.real<<" + "<<img+c.img<<"i";
23. }
25. };
26. int main()
27. {
28. Complex c1,c2;
29. c1.set(3,2);
30. c2.set(5,3);
31. //c1 is implicitly
32. c1.print(c2);
33. //c2 explicitly
34. c1.add(c2);
36. return 0;
38. }

2. Define a class Time to represent Time (like 3 hr 45 min 20 sec). Declare appropriate number of instance member variables and also define instance member functions to set values for time and display values of time.

#include<iostream>

using namespace std;

class Time

{

    private:

    int hour;

    int minut;

    int second;

    public:

    void set(int hr, int mn, int sc)

    {

        hour=hr;

        minut=mn;

        second=sc;

    }

    void Display()

    {

        cout<<hour<<" hr "<<minut<<" min "<<second<<" sec "<<endl;

    }

};

int main()

{

    int a,b,c;

    cout<<"Enter Time With Proper Syntax :"<<endl;

    cin>>a>>b>>c;

    Time t1;

    t1.set(a,b,c);

    t1.Display();

    return 0;

}

3. Define a class Factorial and define an instance member function to find the Factorial of a number using class.

#include<iostream>

using namespace std;

class factorial

{

    private:

    int b;

    int fact;

    public:

    void set(int a)

    {

        b=a;

    }

    int getN()

    {

        return b;

    }

    int getfactorial()

    {

        return fact;

    }

    void calculatefactorial()

    {

        int f=1;

        for (int i = 1; i <= b; i++)

        {

            f=f\*i;

        }

       fact=f;

    }

};

int main()

{

    int a;

    cout<<"Enter a number"<<endl;

    cin>>a;

    factorial f1;

    f1.set(a);

    f1.getN();

    f1.getfactorial();

    f1.calculatefactorial();

    cout<<"Factorial of "<<f1.getN()<<" is "<<f1.getfactorial()<<endl;

}

4. Define a class LargestNumber and define an instance member function to find the Largest of three Numbers using the class.

5. Define a class ReverseNumber and define an instance member function to find Reverse of a Number using class.

#include<iostream>

using namespace std;

class Reverse

{

    private:

    int n;

    public:

    void setN(int a)

    {

        n=a;

    }

    int getN()

    {

        return n;

    }

    void calculate\_re()

    {

        while (n!=0)

        {

            int r = n%10;

            n=n/10;

            cout<<r;

        }

    }

};

int main()

{

    int a;

    cout<<"Enter a Number :"<<endl;

    cin>>a;

    Reverse r1;

    r1.setN(a);

    r1.getN();

    r1.calculate\_re();

}

6. Define a class Square to find the square of a number and write a C++ program to Count number of times a function is called.

#include<iostream>

using namespace std;

class square

{

    private:

    int n;

    int p;

    public:

    void setN(int a)

    {

        n=a;

    }

    int getN()

    {

        return n;

    }

    void getsquare()

    {

        return p;

    }

    int calculate\_sqr()

    {

        p=n\*n;

    }

};

int main()

{

    int a;

    cout<<"Enter a Number :"<<endl;

    cin>>a;

    square r1;

    r1.setN(a);

    r1.getN();

    r1.getsquare();

    r1.calculate\_sqr();

    cout<<r1.getsquare()<<endl;

}

7. Define a class Greatest and define instance member function to find Largest among 3 numbers using classes.

// Online C++ compiler to run C++ program online

#include<iostream>

using namespace std;

class greatest

{

private:

int a;

int b;

int c;

int p;

public:

void setX(int x)

{

a=x;

}

int getX()

{

return a;

}

void setY(int y)

{

b=y;

}

int getY()

{

return b;

}

void setZ(int z)

{

c=z;

}

int getZ()

{

return c;

}

int getCal()

{

return p;

}

void calculate()

{

if (a>=b && a>=c)

{

p = a;

}

else if (b>=a && b>=c)

{

p = b;

}

else

{

p = c;

}

}

};

int main()

{

int x,y,z;

cout<<"Enter three numbers :"<<endl;

cin>>x>>y>>z;

greatest g1;

g1.setX(x);

g1.getX();

g1.setY(y);

g1.getY();

g1.setZ(z);

g1.getZ();

g1.getCal();

g1.calculate();

cout<<"Greatest Numbers is: "<<" "<<g1.getCal()<<" in among of this "<<g1.getX()<<" "<< g1.getY()<<" "<< g1.getZ()<<endl;

}

8. Define a class Rectangle and define an instance member function to find the area of the rectangle.

#include<iostream>

using namespace std;

//Define a class Rectangle and define an instance member function to find the area of the rectangle.

class Ractangle

{

    private:

    int x;

    int y;

    int z;

    public:

    void setA(int a)

    {

        x=a;

    }

    void setB(int b)

    {

        y=b;

    }

    int getCal()

    {

        return z;

    }

    void ractangle()

    {

        z=x\*y;

    }

};

int main()

{

    int a,b;

    cout<<"Enter two Numbers :"<<endl;

    cin>>a>>b;

    Ractangle r1;

    r1.setA(a);

    r1.setB(b);

    r1.getCal();

    r1.ractangle();

    cout<<"Ractangle of Area is :"<<r1.getCal();

}

9. Define a class Circle and define an instance member function to find the area of the circle.

#include<iostream>

using namespace std;

//Define a class Circle and define an instance member function to find the area of the circle

class Circle

{

    private:

    int x;

    float z;

    public:

    void setA(int a)

    {

        x=a;

    }

    float getCal()

    {

        return z;

    }

    int circle()

    {

        z=3.14\*x\*x;

    }

};

int main()

{

    int a;

    cout<<"Enter radius of Circle :"<<endl;

    cin>>a;

    Circle r1;

    r1.setA(a);

    r1.getCal();

    r1.circle();

    cout<<"Area of Circle is :"<<r1.getCal();

}

10. Define a class Area and define instance member functions to find the area of the different shapes like square, rectangle , circle etc

#include<iostream>

using namespace std;

//Define a class Area and define instance member functions to find the area of the different shapes like square, rectangle , circle etc

class Area

{

    private:

    float s;

    float l,b;

    float r;

    public:

    void setSide(int side)

    {

        s=side;

    }

    void setlengtBrith(int length, int brith)

    {

        l=length;

        b=brith;

    }

    void setRadius(int radius)

    {

        r=radius;

    }

    float Areaofcircle()

    {

        return 3.14\*r\*r;

    }

    float Areaofrectangle()

    {

        return l\*b;

    }

    float Areaofsquare()

    {

        return s\*s;

    }

};

int main()

{

    int radius,length,brith,side;

    cout<<"Enter radius of the circle :"<<endl;

    cin>>radius;

    cout<<"Enter length & brith of the Rectangle :"<<endl;

    cin>>length>>brith;

    cout<<"Enter side of the square :"<<endl;

    cin>>side;

    Area a;

    a.setSide(side);

    a.setlengtBrith(length,brith);

    a.setRadius(radius);

    cout<<"Area Of square is :"<<a.Areaofsquare()<<endl;

    cout<<"Area Of ractangle is :"<<a.Areaofrectangle()<<endl;

    cout<<"Area Of circle is :"<<a.Areaofcircle()<<endl;

}