\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\* ASSIGNMENT-25 \*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*

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. #include <string.h>
4. using namespace std;
5. class complexnum
6. {
7. private:
8. float real;
9. float img;
10. public:
11. void displaycomplex()
12. {
13. cout << "Complex number is "<< "(" << real << " + i" << img << ")";
14. }
15. void inputcomplex()
16. {
17. cout << "Enter Real and Imaginary part of complex number:";
18. cin >> real;
19. cin >> img;
20. }
21. };
22. int main()
23. {
24. complexnum cmp;
25. cmp.inputcomplex();
26. cmp.displaycomplex();
27. }

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>

#include <string.h>

using namespace std;

class time

{

private:

   int hour;

   int min;

   int sec;

public:

   void displaytime()

   {

      cout << "Time is "<<hour<<" Hour "<<min<<" Minutes " <<sec<<" Second";

   }

   void inputtime()

   {

      cout << "Enter Hour , Minutes and Second:\n";

      cin >> hour;

      cin >> min;

      if(min>=60)

       {

         hour+=1;

         min=min%60;

       }

      cin>>sec;

       if(sec>=60)

       {

         min+=1;

         sec=sec%60;

       }

   }

};

int main()

{

   time t;

   t.inputtime();

   t.displaytime();

}

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

#include <iostream>

#include <string.h>

using namespace std;

class factorial

{

private:

   int num;

public:

   void displayfact()

   {

      int fact = 1;

      for (int i = 1; i <= num; i++)

         fact = fact \* i;

      cout << "Factorial is " << fact;

   }

   void inputfactorialnum()

   {

      cout << "Enter number: ";

      cin >> num;

   }

};

int main()

{

   factorial f;

   f.inputfactorialnum();

   f.displayfact();

}

4. #include <iostream>

#include <string.h>

using namespace std;

class largestnumber

{

private:

   int num1;

   int num2;

   int num3;

public:

   void displaylargest()

   {

      int largest;

      largest = num1;

      if (num1 < num2)

         largest = num2;

      if (num2 < num3)

         largest = num3;

      cout << "Largest number is " << largest;

   }

   void inputnumbers()

   {

      cout << "Enter three number: ";

      cin >> num1 >> num2 >> num3;

   }

};

int main()

{

   largestnumber num;

   num.inputnumbers();

   num.displaylargest();

}

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

#include <iostream>

#include <string.h>

using namespace std;

class reversenumber

{

private:

   int num1;

public:

   void displayreverse()

   {

      int rev = 0;

      while (num1 > 0)

      {

         rev = rev \* 10 + num1 % 10;

         num1 /= 10;

      }

      cout << "Reverse number is " << rev;

   }

   void inputnumber()

   {

      cout << "Enter number: ";

      cin >> num1;

   }

};

int main()

{

   reversenumber num;

   num.inputnumber();

   num.displayreverse();

}

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>

#include <string.h>

using namespace std;

class square

{

  private:

   int a;

  public:

   void seta(int x)

   {

      a=x;

   }

   int geta()

   {

      return a\*a;

   }

};

int main()

{

   square s;

   int x;

   cout<<"Enter a number:";

   cin>>x;

   s.seta(x);

   cout<<s.geta()<<endl;

}

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

#include <iostream>

#include <string.h>

using namespace std;

class greatest

{

  private:

   int a,b,c;

  public:

   void set(int x,int y, int z)

   {

      a=x;

      b=y;

      c=z;

   }

   int get()

   {

       if(a>b)

      {

        if(a>c)

         return a;

        else

         return c;

      }

      else

      {

         if(b>c)

          return b;

      }

   }

};

int main()

{

   greatest g;

   int x,y,z;

   cout<<"Enter three numbers:";

   cin>>x>>y>>z;

   g.set(x,y,z);

   cout<<"Greatest is "<<g.get()<<endl;

}

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

#include <iostream>

#include <string.h>

using namespace std;

class rectangle

{

  private:

   float a,b;

  public:

   void set(float x,float y)

   {

      a=x;

      b=y;

   }

   float get()

   {

      return a\*b;

   }

};

int main()

{

rectangle A;

   float x,y,z;

   cout<<"Enter length and weidth:";

   cin>>x>>y;

   A.set(x,y);

   cout<<"Area of rectangle is "<<A.get()<<endl;

}

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

#include <iostream>

#include <string.h>

using namespace std;

class circle

{

  private:

   float a,b;

  public:

   void set(float x)

   {

      a=x;

   }

   float get()

   {

      return 3.14\*a\*a;

   }

};

int main()

{

circle A;

   float x,y,z;

   cout<<"Enter radius:";

   cin>>x;

   A.set(x);

   cout<<"Area of circle is "<<A.get()<<endl;

}

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>

#include <string.h>

using namespace std;

class area

{

  private:

   float r,b,l,a;

  public:

  // CIRCLE AREA

   void setc(float x)

   {

      r=x;

   }

   float getc()

   {

      return 3.14\*r\*r;

   }

   // RECTANGLE AREA

   void setrec(float x, float y)

   {

      l=x;

      b=y;

   }

   float getrec()

   {

      return l\*b;

   }

   // SQUARE AREA

   void setsquare(float x)

   {

      a=x;

   }

   float getsquare()

   {

      return a\*a;

   }

};

int main()

{

area A;

   float x,l,b,side;

   cout<<"Enter radius:";

   cin>>x;

   A.setc(x);

   cout<<"Area of circle is "<<A.getc()<<endl<<endl;

   cout<<"Enter length and weidth of rectangle:";

   cin>>l>>b;

   A.setrec(l,b);

   cout<<"Area of rectangle is "<<A.getrec()<<endl<<endl;

   cout<<"Enter length of side:";

   cin>>side;

   A.setsquare(side);

   cout<<"Area of rectangle is "<<A.getsquare()<<endl;

}