* **Name : Rushikesh Gaware**
* **WhatsApp Number : 9662631201**
* **Email Id :**

[**gawarerishi@gmail.com**](mailto:gawarerishi@gmail.com)

**Assignment-24**

**\*\*\*CLASSES AND OBJECTS\*\*\***

**Q.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**

**Ans:**

#include<iostream>

using namespace std;

class complex

{

private:

int a;

int b;

public:

void setvalue(int n1,int n2)

{

a=n1;

b=n2;

}

void display()

{

cout<<"Real "<<a<<" Imaginary "<<b<<endl;

}

};

int main()

{

complex c1,c2;

c1.setvalue(5,12);

c2.setvalue(8,11);

c1.display();

c2.display();

return 0;

}

**Q.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.**

**Ans:**

#include<iostream>

using namespace std;

class time

{

private:

int hour;

int min;

int sec;

public:

void setime(int h,int m,int s)

{

hour=h;

min=m;

sec=s;

}

displaytime()

{

if(hour<13&&min<60&&sec<60)

{

cout<<hour<<" hour :"<<min<<" min :"<<sec<<"

sec"<<endl;

}

}

};

int main()

{

time t1,t2;

t1.setime(11,50,15);

t2.setime(5,45,35);

t1.displaytime();

t2.displaytime();

return 0;

}

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

**Ans:**

#include<iostream>

using namespace std;

class factorial

{

private:

int a,b;

public:

void input()

{

cout<<"Enter A Number ";

cin>>a;

b=a;

}

void findfact()

{

int temp=1;

for(int i=1;i<=a;i++)

{

temp=temp\*i;

}

a=temp;

}

display()

{

cout<<"Factorial Of "<<b<<" Is "<<a<<endl;

}

};

int main()

{

factorial f1;

f1.input();

f1.findfact();

f1.display();

return 0;

}

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

**Ans:**

#include<iostream>

using namespace std;

class largestnumber

{

private:

int a,b,c;

public:

void input()

{

cout<<"Enter Three Numbers "<<endl;

cin>>a>>b>>c;

}

void largest()

{

int temp;

temp=a>b?a:b;

temp=temp>c?temp:c;

cout<<"Largest Number Is "<<temp;

}

};

int main()

{

largestnumber l1;

l1.input();

l1.largest();

return 0;

}

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

**Ans:**

#include<iostream>

using namespace std;

class reversenumber

{

private:

int a;

public:

void input()

{

cout<<"Enter A Number ";

cin>>a;

}

void revnumber()

{

int temp,reminder,rev,b=0;

rev=a;

while(a)

{

reminder=a%10;

a=a/10;

temp=(temp\*10)+reminder;

}

a=temp;

}

void display()

{

cout<<"Reverse Number Is "<<a<<endl;

}

};

int main()

{

reversenumber n1;

n1.input();

n1.revnumber();

n1.display();

return 0;

}

**Q.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.**

**Ans:**

#include<iostream>

using namespace std;

int count=0;

class square

{

private:

int n;

public:

void input()

{

cout<<"Enter A Number ";

cin>>n;

}

void findsquare()

{

count++;

int a=n;

n=n\*n;

cout<<"Square of "<<a<<" Is"<<n<<endl;

}

};

int main()

{

square s1;

s1.input();

s1.findsquare();

cout<<count<<" Times Square Function Called "<<endl;

return 0;

}

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

**Ans:**

#include<iostream>

using namespace std;

class greatest

{

private:

int a,b,c;

public:

void input()

{

cout<<"Enter Three Numbers ";

cin>>a>>b>>c;

}

void greater()

{

int greater;

greater=a>b?a:b;

greater=greater>c?greater:c;

cout<<"The Greater Number is "<<greater<<endl;

}

};

int main()

{

greatest g1;

g1.input();

g1.greater();

return 0;

}

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

**Ans**:

include<iostream>

using namespace std;

class rectangle

{

private:

int length,width;

public:

void input()

{

cout<<"Enter length Of Rectangle "<<endl;

cin>>length;

cout<<"Enter width Of Rectangle"<<endl;

cin>>width;

}

void area()

{

int a;

a=width\*length;

cout<<"Area Is "<<a<<endl;

}

};

int main()

{

rectangle r1;

r1.input();

r1.area();

return 0;

}

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

**Ans:**

#include<iostream>

using namespace std;

class circle

{

private:

float radius;

public:

void input()

{

cout<<"Enter Radius Of Circle "<<endl;

cin>>radius;

}

void area()

{

float area;

area=3.14\*(radius\*radius);

cout<<"Area Of Circle Is "<<area;

}

};

int main()

{

circle c1;

c1.input();

c1.area();

return 0;

}

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

**Ans:**

#include<iostream>

using namespace std;

class area

{

private:

int length,height,width,radius;

public:

void inputsquare()

{

cout<<"Enter Side Of Square "<<endl;

cin>>length;

}

void inputrect()

{

cout<<"Enter Length Of Rectangle "<<endl;

cin>>length;

cout<<"Enter Width Of Rectangle "<<endl;

cin>>width;

}

void inputcircle()

{

cout<<"Enter Radius Of Circle "<<endl;

cin>>radius;

}

void areaofsquare()

{

cout<<"Area Of Square is "<<length\*length<<endl;

}

void areaofrect()

{

cout<<"Area Of Rectangle Is "<<length\*width<<endl;

}

void areaofcircle()

{

cout<<"Area Of Circle Is "<<3.14\*(radius\*radius)<<endl;

}

};

int main()

{

area a1,a2,a3,a4;

a1.inputsquare();

a2.inputrect();

a3.inputcircle();

a1.areaofsquare();

a2.areaofrect();

a3.areaofcircle();

return 0;

}