**1.circle using polymorphism  
import java.util.Scanner;  
class poly1  
{  
double l,b,A,r, h;  
void cal\_area()  
{  
Scanner sc=new Scanner(System.in);  
System.out.println("Enter l & b");  
l=sc.nextDouble();  
b=sc.nextDouble();  
A=l\*b;  
System.out.println("Arae of rect="+A);  
}  
void cal\_area(double r)  
{  
this.r=r;  
A=3.14\*r\*r;  
System.out.println("Area of circle="+A);  
}**

**double cal\_area(double b,double h)  
{  
this.b=b;  
this.h=h;  
A=0.5\*b\*h;  
return(A);  
}  
}  
public class Main  
{  
public static void main(String[] args)  
{  
double r,h,b;  
Scanner sc=new Scanner(System.in);  
poly1 v1= new poly1();  
v1.cal\_area();  
System.out.println("Enter r ");  
r=sc.nextDouble();  
v1.cal\_area(r);  
System.out.println("Enter b & h ");**

**b=sc.nextDouble();  
h=sc.nextDouble();  
double A=v1.cal\_area(b, h);  
System.out.println("Area="+A);  
}  
}  
Output:  
Enter l & b  
2  
3  
Arae of rect=6.0  
Enter r  
4  
Area of circle=50.24  
Enter b & h  
5  
6  
Area=15.0  
2.max 2 number number using method overloading  
import java.util.Scanner;**

**class MaxTwoNumbers {  
public int max(int a, int b) {  
return (a > b) ? a : b;  
}  
}  
class MaxThreeNumbers extends MaxTwoNumbers {  
public int max(int a, int b, int c) {  
return max(max(a, b), c);  
}  
}  
public class Main {  
public static void main(String[] args) {  
Scanner scanner = new Scanner(System.in);  
System.out.print("Enter first number: ");  
int num1 = scanner.nextInt();  
System.out.print("Enter second number: ");  
int num2 = scanner.nextInt();  
MaxTwoNumbers maxTwo = new MaxTwoNumbers();  
int maxTwoResult = maxTwo.max(num1, num2);  
System.out.println("Maximum of two numbers: " +  
maxTwoResult);**

**System.out.print("Enter third number: ");  
int num3 = scanner.nextInt();  
MaxThreeNumbers maxThree = new MaxThreeNumbers();  
int maxThreeResult = maxThree.max(num1, num2, num3);  
System.out.println("Maximum of three numbers: " +  
maxThreeResult);  
}  
}  
Output:  
Enter first number: 2  
Enter second number: 9  
Maximum of two numbers: 9  
Enter third number: 5  
Maximum of three numbers: 9  
3. add 2 number & Add3 number using method overloading  
import java.util.Scanner;  
class addTwoNumbers {  
int add1;**

**public int max(int a, int b) {  
add1=a+b;  
return add1;  
}  
}  
class addThreeNumbers extends addTwoNumbers {  
int add2;  
public int max(int a, int b, int c) {  
add2=a+b+c;  
return add2;  
}  
}  
public class Main {  
public static void main(String[] args) {  
Scanner scanner = new Scanner(System.in);  
System.out.print("Enter first number: ");  
int num1 = scanner.nextInt();  
System.out.print("Enter second number: ");  
int num2 = scanner.nextInt();**

**addTwoNumbers addTwo = new addTwoNumbers();  
int addTwoResult = addTwo.max(num1, num2);  
System.out.println("Maximum of two numbers: " +  
addTwoResult);  
System.out.print("Enter third number: ");  
int num3 = scanner.nextInt();  
addThreeNumbers addThree = new addThreeNumbers();  
int addThreeResult = addThree.max(num1, num2, num3);  
System.out.println("Maximum of three numbers: " +  
addThreeResult);  
}  
}  
Output:  
Enter first number: 23  
Enter second number: 34  
Maximum of two numbers: 57  
Enter third number: 67**

**Maximum of three numbers: 124  
4.method overrriding  
class Animal {  
public void animalSound() {  
System.out.println("The animal makes a sound");  
}  
}  
class cat extends Animal {  
public void animalSound() {  
System.out.println("The cat says: mew mew");  
}  
}  
class Dog extends Animal {  
public void animalSound() {  
System.out.println("The dog says: bow wow");  
}  
}  
class Main {  
public static void main(String[] args) {**

**Animal myAnimal = new Animal();  
Animal myCat = new cat();  
Animal myDog = new Dog();  
myAnimal.animalSound();  
myCat.animalSound();  
myDog.animalSound();  
}  
}  
Output:  
The animal makes a sound  
The cat says: mew mew  
The dog says: bow wow  
5.method overriding  
class shape {  
public void show() {  
System.out.println("any shapes");  
}  
}  
class rectangle extends shape {  
public void show() {  
System.out.println("rectangle....");**

**}  
}  
class circle extends shape {  
public void show() {  
System.out.println("circle....");  
}  
}  
class Main {  
public static void main(String[] args) {  
shape s = new shape();  
shape rect = new rectangle();  
shape cir = new circle();  
s.show();  
rect.show();  
cir.show();  
}  
}  
Output:  
any shapes  
rectangle....  
circle....**

**6.inheritance with polymorphisam  
import java.util.Scanner;  
class Area1  
{  
double r,A;  
Area1(double r)  
{  
this.r=r;  
}  
void cal\_area()  
{  
A=3.14\*r\*r;  
System.out.println("Radius="+r+"\nArae="+A);  
}  
}  
class Volume11 extends Area1  
{  
double h,v;  
Volume11(double r,double h)  
{  
super(r);**

**this.h=h;  
}  
void cal\_area()  
{  
super.cal\_area();  
v=A\*h;  
System.out.println("H="+h+"\nVolume="+v);  
}  
}  
public class Main  
{  
public static void main(String[] args)  
{  
double r,h;  
Scanner sc=new Scanner(System.in);  
System.out.println("Enter r & h");  
r=sc.nextDouble();  
h=sc.nextDouble();  
Volume11 v1= new Volume11(r, h);  
v1.cal\_area();**

**}  
}  
Output:  
Enter r & h  
3  
5  
Radius=3.0  
Arae=28.259999999999998  
H=5.0  
Volume=141.29999999999998**