1.Create a class named 'Student' with String variable 'name' and integer variable 'roll\_no'. Assign the value of roll\_no as '2' and that of name as "John" by creating an object of the class Student.

**public** **class** Student2

{

**int** roll\_no;

String name;

**void** getDetails()

{

System.***out***.println("Roll number of a student is : "+ roll\_no);

System.***out***.println("Name of a student is : "+ name);

}

**public** **static** **void** main(String args[])

{

Student2 obj= **new** Student2();

obj.name="Prasanth";

obj.roll\_no=2;

obj.getDetails();

}

}

2.Assign and print the roll number, phone number and address of two students having names "Sam" and "John" respectively by creating two objects of class 'Student'.

**class** Stu1

{

**int** roll\_no1 = 1;

String ph\_no1 = "8659080321";

String address1 = "Chennai";

String name1 = "Sam";

**void** getDetails()

{

System.***out***.println("Roll number of a student : "+ roll\_no1);

System.***out***.println("Name of a student is "+ name1 +" which he live in "+ address1 +" and the phone number is "+ ph\_no1);

}

}

**class** Stu2

{

**int** roll\_no2 = 2;

String ph\_no2 = "9859080222";

String address2 = "Bangalore";

String name2 = "John";

**void** getInfo()

{

System.***out***.println("Roll number of a student : "+ roll\_no2);

System.***out***.println("Name of a student is "+ name2 +" which he live in "+ address2 +" and the phone number is "+ ph\_no2);

}

}

**public** **class** Student

{

**public** **static** **void** main(String args[])

{

Stu1 obj1 = **new** Stu1();

Stu2 obj2 = **new** Stu2();

obj1.getDetails();

obj2.getInfo();

}

}

3. Write a program to print the area and perimeter of a triangle having sides of 3, 4 and 5 units by creating a class named 'Triangle' without any parameter in its constructor.

**class** Area

{

**int** a = 3;

**int** b = 4;

**int** c = 5;

Area()

{

**double** s = (a+b+c)/2;

**double** A = Math.*sqrt*(s\*(s-a)\*(s-b)\*(s-c));

System.***out***.println("Area of a triangle : "+ A +"sq.units");

}

}

**class** Perimeter

{

**int** a = 3;

**int** b = 4;

**int** c = 5;

Perimeter()

{

**int** P = (a+b+c);

System.***out***.println("Perimeter of a triangle : "+ P +"sq.units");

}

}

**public** **class** Triangle

{

**public** **static** **void** main(String args[])

{

Area obj = **new** Area();

Perimeter obj1 = **new** Perimeter();

}

}

4.Write a program to print the area and perimeter of a triangle having sides of 3, 4 and 5 units by creating a class named 'Triangle' with constructor having the three sides as its parameters.

**class** Area1

{

**int** x;

**int** y;

**int** z;

Area1(**int** a,**int** b,**int** c)

{

x = a;

y = b;

z = c;

**double** s = (a+b+c)/2;

**double** A = Math.*sqrt*(s\*(s-a)\*(s-b)\*(s-c));

System.***out***.println("Area of a triangle : "+ A +"sq.units");

}

}

**class** Perimeter1

{

**int** x1;

**int** x2;

**int** x3;

Perimeter1(**int** a1, **int** a2, **int** a3)

{

x1 = a1;

x2 = a2;

x3 = a3;

**int** P = (a1+a2+a3);

System.***out***.println("Perimeter of a triangle : "+ P +"sq.units");

}

}

**public** **class** Triangle\_eg2

{

**public** **static** **void** main(String args[])

{

Area1 obj1 = **new** Area1(3, 4, 5);

Perimeter1 obj2 = **new** Perimeter1(3, 4, 5);

}

}

5.Write a program to print the area of two rectangles having sides (4,5) and (5,8) respectively by creating a class named 'Rectangle' with a method named 'Area' which returns the area and length and breadth passed as parameters to its constructor.

**class** Rec\_eg1

{

**int** len;

**int** br;

Rec\_eg1(**int** l, **int** b)

{

len = l;

br = b;

}

**int** Area()

{

**int** area = len \* br;

**return** area;

}

}

**public** **class** Rectangle

{

**public** **static** **void** main(String args[])

{

Rec\_eg1 obj = **new** Rec\_eg1(4, 5);

Rec\_eg1 obj1 = **new** Rec\_eg1(5, 8);

System.***out***.println("Rectangle r1\nLength : "+ obj.len +"\nBreadth : "+ obj.br +"\nArea :"+obj.Area());

System.***out***.println("Rectangle r1\nLength : "+ obj1.len +"\nBreadth : "+ obj1.br +"\nArea :"+obj1.Area());

}

}

6.Write a program to print the area of a rectangle by creating a class named 'Area' taking the values of its length and breadth as parameters of its constructor and having a method named 'returnArea' which returns the area of the rectangle. Length and breadth of rectangle are entered through keyboard.

**import** java.util.Scanner;

**public** **class** Rectangle1

{

**int** len;

**int** br;

Rectangle1(**int** len,**int** br)

{

**this**.len = len;

**this**.br = br;

}

**int** returnArea()

{

**int** a = len\*br;

**return** a;

}

**public** **static** **void** main(String args[])

{

**int** len ,br;

Scanner s = **new** Scanner(System.***in***);

System.***out***.println("Height : ");

len = s.nextInt();

System.***out***.println("Breadth : ");

br = s.nextInt();

Rectangle1 obj = **new** Rectangle1(len, br);

System.***out***.println("rectangle r1\nlength "+obj.len+"\nbreath "+obj.br+"\nArea "+obj.returnArea());

}

}

7.Print the sum, difference and product of two complex numbers by creating a class named 'Complex' with separate methods for each operation whose real and imaginary parts are entered by user.

**import** java.util.Scanner;

**public** **class** Complex

{

**int** s1,s2,a1,a2,b1,b2;

Complex(**int** a1, **int** b1, **int** a2, **int** b2)

{

**this**.a1 = a1;

**this**.b1 = b1;

**this**.a2 = a2;

**this**.b2 = b2;

}

**void** sum()

{

s1 = a1 + a2;

s2 = b1 + b2;

System.***out***.println("The addition of two complex numbers is : "+ s1 +"+"+ s2+"i");

}

**void** diff()

{

s1 = a1 - a2;

s2 = b1 - b2;

System.***out***.println("The subraction of two complex numbers is : "+ s1 +"+"+ s2+"i");

}

**void** prod()

{

s1 = a1 \* a2;

s2 = b1 \* b2;

System.***out***.println("The multiplication of two complex numbers is : "+ s1 +"+"+ s2+"i");

}

**public** **static** **void** main(String args[])

{

**int** a1, a2, b1, b2;

Scanner s = **new** Scanner(System.***in***);

System.***out***.println("Enter the real number :");

a1 = s.nextInt();

System.***out***.println("Enter the real number :");

a2 = s.nextInt();

System.***out***.println("Enter the imaginary number :");

b1 = s.nextInt();

System.***out***.println("Enter the imaginary number :");

b2 = s.nextInt();

Complex obj = **new** Complex(a1, b1, a2, b2);

obj.sum();

obj.diff();

obj.prod();

}

}

8.Write a program that would print the information (name, year of joining, salary, address) of three employees by creating a class named 'Employee'. The output should be as follows:

Name Year of joining Address

Robert 1994 64C- WallsStreat

Sam 2000 68D- WallsStreat

John 1999 26B- WallsStreat

**public** **class** Employee

{

String Name;

String Address;

**int** Year\_of\_joining;

**double** Salary;

**void** getData(String a, String b, **int** c, **double** d)

{

Name = a;

Address = b;

Year\_of\_joining = c;

Salary = d;

}

**void** display()

{

System.***out***.println(Name+"\t\t"+Year\_of\_joining+"\t\t"+Address);

}

**public** **static** **void** main(String args[])

{

Employee obj[] = **new** Employee[3];

obj[0] = **new** Employee();

obj[1] = **new** Employee();

obj[2] = **new** Employee();

obj[0].getData("Robert", "64C-Wallsstreeet", 1994, 100000);

obj[1].getData("Sam", "68D-Wallsstreeet", 2000, 200000);

obj[2].getData("John", "26B-Wallsstreeet", 1999, 1000000);

System.***out***.println("Name\t Year of Joining\t Address");

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

obj[i].display();

}

}

9. The Matrix class has methods for each of the following:

1- get the number of rows

1. - get the number of columns
2. - set the elements of the matrix at given position (i,j)
3. - adding two matrices. If the matrices are not addable, "Matrices cannot be added" will be displayed.
4. - multiplying the two matrices
5. **import** java.util.Scanner;
6. **public** **class** Matrix
7. {
8. **int** a[][] = {{1,4,7},{6,8,2},{9,9,5}};
9. **int** b[][] = {{7,4,7},{2,2,2},{9,1,5}};
10. **int** e;
11. **int** d;
13. Matrix(**int** e, **int** d)
14. {
15. **this**.e = e;
16. **this**.d = d;
17. }
19. **void** add()
20. {
21. **if**(e != d || d != e)
22. {
23. System.***out***.println("Addition is not possible");
24. }
25. **else**
26. {
27. **int** c[][]= **new** **int**[3][3];
28. **for**(**int** i=0;i<e;i++)
29. {
30. **for**(**int** j=0;j<d;j++)
31. {
32. c[i][j] = a[i][j] + b[i][j];
33. System.***out***.print(" "+c[i][j]);
34. }
35. System.***out***.println();
36. }
37. }
38. }
40. **void** multi()
41. {
42. **if**(e != d || d != e)
43. {
44. System.***out***.println("Multiplication is not possible");
45. }
46. **else**
47. {
48. **int** c[][]= **new** **int**[3][3];
49. **for**(**int** i=0;i<e;i++)
50. {
51. **for**(**int** j=0;j<d;j++)
52. {
53. c[i][j] = a[i][j] \* b[i][j];
54. System.***out***.print(" "+c[i][j]);
55. }
56. System.***out***.println();
57. }
58. }
59. }
61. **public** **static** **void** main(String args[])
62. {
63. **int** e, d;
64. Scanner s = **new** Scanner(System.***in***);
65. System.***out***.println("Enter the no of rows :");
66. e = s.nextInt();
68. System.***out***.println("Enter the no of columns :");
69. d = s.nextInt();
71. Matrix obj = **new** Matrix(e, d);
72. obj.add();
73. //obj.multi();
74. }

}

10.Write a program to print the names of students by creating a Student class. If no name is passed while creating an object of Student class, then the name should be "Unknown", otherwise the name should be equal to the String value passed while creating object of Student class.

**public** **class** Student1

{

Student1()

{

System.***out***.print("Unknown");

}

String s;

**void** stud()

{

s = "Prasanth";

System.***out***.println(s);

}

**public** **static** **void** main(String[] args)

{

Student1 obj=**new** Student1();

obj.stud();

}

}

11.Will the following code snippet compile successfully? If yes, what is the output of the following program?

Ans: No, it will not complile.

12.Identify the error in the following code snippet. If there is no error then what will be the output of the program?

Ans: 10

13.what is the output

Ans: 20

30

400

14.whats the output

Ans: 200

15.Whats the error in the code

Ans: No error

Output: 24

16.Will this program execute what will be the output

Ans: Static method

Instance method

Constructor

17.whats the output

Ans: This is rectangle

Area:20

18. Create a class with a method that prints "This is parent class" and its subclass with another method that prints "This is child class". Now, create an object for each of the class and call

a - method of parent class by object of parent class b - method of child class by object of child class c - method of parent class by object of child class

**class** Parent

{

**void** getData()

{

System.***out***.println("This is parent class");

}

}

**class** Child **extends** Parent

{

**void** getDetails()

{

System.***out***.println("This is child class");

}

}

**public** **class** Inheritance

{

**public** **static** **void** main(String args[])

{

Child obj = **new** Child();

obj.getData();

obj.getDetails();

}

}

19.

Create a class named 'Member' having the following members:

Data members

1. - Name
2. - Age
3. - Phone number
4. - Address
5. - Salary

It also has a method named 'printSalary' which prints the salary of the members.

Two classes 'Employee' and 'Manager' inherits the 'Member' class. The 'Employee' and 'Manager' classes have data members 'specialization' and 'department' respectively. Now, assign name, age, phone number, address and salary to an employee and a manager by making an object of both of these classes and print the same.

**class** members

{

String name;

String Ph\_no;

String Address;

**int** age;

**int** Salary;

**void** printSalary()

{

System.***out***.println(Salary);

}

}

**class** Manager **extends** members

{

String Specialization;

String Department;

}

**public** **class** Employee1 **extends** members

{

String Specialization;

String Department;

**public** **static** **void** main(String args[])

{

Employee1 obj= **new** Employee1();

obj.name = "Prasanth";

obj.age = 22;

obj.Address = "Chennai";

obj.Ph\_no = "9837593344";

obj.Salary = 50000;

Manager obj1=**new** Manager();

obj1.name = "Saran";

obj1.age = 22;

obj1.Address = "Bangalore";

obj1.Ph\_no = "8936444309";

obj1.Salary = 550000;

obj.printSalary();

obj1.printSalary();

}

}

20.

Create a class named 'Rectangle' with two data members 'length' and 'breadth' and two methods to print the area and perimeter of the rectangle respectively. Its constructor having parameters for length and breadth is used to initialize length and breadth of the rectangle. Let class 'Square' inherit the 'Rectangle' class with its constructor having a parameter for its side (suppose s) calling the constructor of its parent class as 'super(s,s)'. Print the area and perimeter of a rectangle and a square.

**class** Rectangle2

{

**int** a, p;

Rectangle2(**int** l, **int** b)

{

a = l\*b;

p = (2\*l)+(2\*b);

}

**void** area()

{

System.***out***.println("Area is : "+a);

}

**void** perimeter()

{

System.***out***.println("perimeter is : "+p);

}

}

**public** **class** square **extends** Rectangle2

{

square(**int** l, **int** b)

{

**super**(l, b);

}

**public** **static** **void** main(String args[])

{

square obj = **new** square(3,3);

Rectangle2 obj1 = **new** Rectangle2(3,9);

obj.area();

obj.perimeter();

obj1.area();

obj1.perimeter();

}

}

21 whats the output

Ans: Inside GeeksforGeeks

22. **can we overload main() method?**

Ans: No, we cant overload main() because it is static.

**23.what is the output**

Ans: 200

24:

Ans: Sum of two numbers: 50

Sum of three numbers: 120

**25.what is the output**

Ans: Sum of two numbers: 50

**26.what is the output**

Ans: m1 method in class A

m1 method in class A

m1 method in class B

m1 method in class B

m1 method in class B

**27.What is the output**

Ans:

**28.what is the output**

Ans: No output will be showed.