Java Practicals
(1 to 23)

Name - Aman Kumar Singh
EN - 200510101159
Batch - C
Branch - BCA

1. WAP to perform arithmetic operations.

```java
// Program to perform arithmetic operations

public class Program_1 {

   public static void main(String[] args) {

       int num1=21, num2=4;

       System.out.println("\n Given Number 1 is -> "+num1+" and Number
2 is -> "+num2);

       int add, sub, mul, div, mod;

       add = num1 + num2;

       sub = num1 - num2;

       mul = num1 * num2;

       div = num1 / num2;

       mod = num1 % num2;

       System.out.println("\n Additon is -> "+add);

       System.out.println(" Substraction is -> "+sub);

       System.out.println(" Multiplication is -> "+mul);

       System.out.println(" Division is -> "+div);

       System.out.println(" Modulo is -> "+mod);

   }
```

```
 Given Number 1 is -> 21 and Number 2 is -> 4

 Additon is -> 25
 Substraction is -> 17
 Multiplication is -> 84
 Division is -> 5
 Modulo is -> 1
```

```java
}
```

2. WAP to calculate simple interest.

```java
// Proram to calculate simple interest.

import java.util.Scanner;

public class Program_2 {

    public static void main(String[] args) {

        int time;

        double prin, rate, si;

        Scanner sc = new Scanner(System.in);

        System.out.print("\n Enter Principal Amount : ");

        prin = sc.nextDouble();

        System.out.print(" Enter Rate of Interest : ");

        rate = sc.nextDouble();

        System.out.print(" Enter Time (in Year) : ");

        time = sc.nextInt();

        sc.close();

        si = (prin*rate*time) / 100;

        System.out.println("\n Simple Interest is -> Rs"+si);

    }

}
```

```
Enter Principal Amount : 10000
Enter Rate of Interest : 5
Enter Time (in Year) : 5

Simple Interest is -> Rs2500.0
```

3. WAP to check the given no is odd or even.

```java
// Program to check the given no is odd or even

import java.util.Scanner;

public class Program_3 {

    public static void main(String[] args) {

        int num1;

        Scanner as = new Scanner(System.in);

        System.out.print(" Enter Number : ");

        num1 = as.nextInt();

        as.close();

        if (num1 % 2 == 0) {

            System.out.println("\n Given Number is Even");

        }

        else {

            System.out.println("\n Given Number is ODD");

        }

    }

}
```

```
Enter Number : 12

Given Number is Even
```

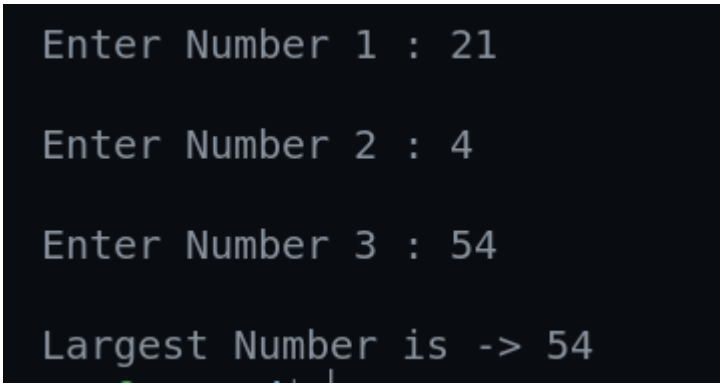
4. WAP to find the area of circle.

```java
// Praogram to find the area of circle.

import java.util.Scanner;

public class Program_4 {

    public static void main(String[] args) {

        double radius, circle;

        Scanner ar = new Scanner(System.in);

        System.out.print("\n Enter Radius of the Circle : ");

        radius = ar.nextDouble();

        circle = 3.14 * (radius * radius);

        ar.close();

        System.out.println("\n Area of the Circle is -> "+circle + " sq unit");

    }

}
```

```
 Enter Radius of the Circle : 21

 Area of the Circle is -> 1384.74 sq unit
aman@asus:~/$
```

5. WAP to find the largest no amongst three number.

```java
// Program to find the largest no amongst three number.

import java.util.Scanner;

public class Program_5 {

   public static void main(String[] args) {

        int num1, num2, num3;

        Scanner ar = new Scanner(System.in);

        System.out.print("\n Enter Number 1 : ");

        num1 = ar.nextInt();

        System.out.print("\n Enter Number 2 : ");

        num2 = ar.nextInt();

        System.out.print("\n Enter Number 3 : ");

        num3 = ar.nextInt();

        ar.close();

        if (num1 > num2 && num1 > num3){

            System.out.println("\n Largest Number is -> "+num1);

        }

        else if (num2 > num3 && num2 > num1) {

            System.out.println("\n Largest Number is -> "+num2);

        }

        else {

            System.out.println("\n Largest Number is -> "+num3);

        }

   }

}
```


Enter Number 1 : 21
Enter Number 2 : 4
Enter Number 3 : 54
Largest Number is -> 54

6. WAP to draw following pattern

```java
import java.util.Scanner;

// Program to draw following pattern

public class Program_6 {

   public static void main(String[] args) {

       int row, num;

       char ch;

       Scanner ar = new Scanner(System.in);

       System.out.print("\n Enter the Row : ");

       row = ar.nextInt();

       ar.close();

       // Pattern Number 1

       System.out.println("\nCharacter Pattern no - 01");

       for (int i = 1; i < row; i++) {

           for (int j = 1; j <= i; j++) {

               num = 64+j;

               ch = (char)num;

               System.out.print(ch+" ");

           }

           System.out.println();

       }

       // Pattern Number 2

       System.out.println("\nCharacter Pattern no - 02");

       for (int i = 1; i < row; i++) {

           for (int j = 1; j <= i; j++) {
```

```
            num = 64+i;
            ch = (char)num;
            System.out.print(ch+" ");
        }
        System.out.println();
    }
    // Pattern Number 3
    System.out.println("\nStar Pattern Program");
    for (int i = 1; i < row; i++) {
        for (int j=row-i; j>=1; j--){
            System.out.print(" ");
        }
        for (int j = 1; j <= i; j++) {
            System.out.print("* ");
        }
        System.out.println();
    }
    // Pattern Number 4
    System.out.println("\nTriangle Pattern Program");
    for (int i = 1; i <= row; i++) {
        for (int j = i; j < row; j++) {
            System.out.print(" ");
        }
        for (int k = 1; k <= (2*i-1); k++) {
            if(k==1 || i == row || k==(2*i-1)) {
```

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

            }

            else {

                System.out.print(" ");

            }

        }

        System.out.println("");

    }

}
```

```
 Enter the Row : 5

Character Pattern no - 01
A
A B
A B C
A B C D

Character Pattern no - 02
A
B B
C C C
D D D D

Star Pattern Program
    *
   * *
  * * *
 * * * *

Triangle Pattern Program
    *
   * *
  *   *
 *     *
*********
```

7. WAP for simple if statement.

```java
import java.util.Scanner;

// Program for simple if statement.

public class Program_7 {

   public static void main(String[] args) {

       int age;

       Scanner ar = new Scanner(System.in);

       System.out.print("\n Enter Your Age : ");

       age = ar.nextInt();

       ar.close();

       if (age > 17) {

           System.out.println("\n You are Eligible for Voting");

       }

   }

}
```

```
Enter Your Age : 18

You are Eligible for Voting
```

8. WAP for If..else statement.

```java
// Program for If..else statement.

import java.util.Scanner;

public class Program_8 {

   public static void main(String[] args) {

        int num;

        Scanner ar = new Scanner(System.in);

        System.out.print("\n Enter any Number : ");

        num = ar.nextInt();

        ar.close();

        if (num % 2 == 0) {

            System.out.println("\n "+num+" is a Even Number");

        }

        else {

            System.out.println("\n "+num+" is a Odd Number");

        }

   }

}
```

```
Enter any Number : 21

21 is a Odd Number
```

9. WAP for nested if statement.

```java
import java.util.Scanner;

// Program for nested if statement.

public class Program_9 {

   public static void main(String[] args) {

       int num;

       Scanner ar = new Scanner(System.in);

       System.out.print("\n Enter any Number : ");

       num = ar.nextInt();

       ar.close();

       if (num > 0) {

           if (num % 2 == 0) {

               System.out.println("\n "+num+" is Even and Positive");

           } else {

               System.out.println("\n "+num+" is Odd and Positive");

           }

       }

       else if (num < 0){

           if (num % 2 == 0) {

               System.out.println("\n "+num+" is Even and Negetive");

           } else {

               System.out.println("\n "+num+" is Odd and Negetive");

           }

       }

       else {
```

```
            System.out.println("\n "+num+" is Zero");

        }

    }

}
```

```
Enter any Number : 214

214 is Even and Positive
```

10. WAP for if..else..if statement.

```java
import java.util.Scanner;

// program for if..else..if statement.

public class Program_10 {

   public static void main(String[] args) {

        int num;

        Scanner ar = new Scanner(System.in);

        System.out.print("\n Enter any Number : ");

        num = ar.nextInt();

        ar.close();

        if (num > 0) {

            System.out.println("\n "+num+" is a Positive Number");

        }

        else if (num < 0){

            System.out.println("\n "+num+" is a Negetive Number");

        }

        else {

            System.out.println("\n "+num+" is Zero");

        }

   }

}
```

```
Enter any Number : 125

125 is a Positive Number
```

11. WAP for while loop statement.

```java
// program for while loop statement.

public class Program_11 {

   public static void main(String[] args) {

       int num = 10, i = 1, var;

       System.out.println("\nTable of Number "+num+" is -> ");

       while (i < 11) {

           var = num * i;

           System.out.println(num+" * "+i+" = "+var);

           i++;

       }

   }

}
```

```
Table of Number 10 is ->
10 * 1 = 10
10 * 2 = 20
10 * 3 = 30
10 * 4 = 40
10 * 5 = 50
10 * 6 = 60
10 * 7 = 70
10 * 8 = 80
10 * 9 = 90
10 * 10 = 100
```

12. WAP for for loop statement.

```java
// Program for use of for Loop

public class Program_12 {

   public static void main(String[] args) {

       int num = 21, var;

       System.out.println("\nTable of Number "+num+" is -> ");

       for (int i = 1; i < 11; i++) {

           var = num * i;

           System.out.println(num+" * "+i+" = "+var);

       }

   }

}
```

```
Table of Number 21 is ->
21 * 1 = 21
21 * 2 = 42
21 * 3 = 63
21 * 4 = 84
21 * 5 = 105
21 * 6 = 126
21 * 7 = 147
21 * 8 = 168
21 * 9 = 189
21 * 10 = 210
```

13. WAP for do while loop statement.

```java
// Program to use of do while loop


public class Program_13 {

   public static void main(String[] args) {

       int num = 4, i = 1, var;

       System.out.println("\nTable of Number "+num+" is -> ");



       do {

           var = num * i;

           System.out.println(num+" * "+i+" = "+var);

           i++;

       } while (i < 11);

   }

}
```

```
Table of Number 4 is ->
4 * 1 = 4
4 * 2 = 8
4 * 3 = 12
4 * 4 = 16
4 * 5 = 20
4 * 6 = 24
4 * 7 = 28
4 * 8 = 32
4 * 9 = 36
4 * 10 = 40
```

14. WAP for switch case statement.

```
import java.util.Scanner;

public class Program_14 {

   public static void main(String[] args) {

       System.out.println("\n +----------------------------+");

       System.out.println(" | Press 1 for Addition       |");

       System.out.println(" | Press 2 for Substraction   |");

       System.out.println(" | Press 3 for Multiplication |");

       System.out.println(" | Press 4 for Division       |");

       System.out.println(" | Press 5 for Modulo         |");

       System.out.println(" | Press 6 for Exit           |");

       System.out.println(" +----------------------------+");



       Scanner ar = new Scanner(System.in);

       int num1 , num2, ch;

       System.out.print("\n Enter Your Choice : ");

       ch = ar.nextInt();

       if (ch == 6) {

           System.exit(0);

       }

       System.out.print("\n Enter Number 1 : ");

       num1 = ar.nextInt();

       System.out.print(" Enter Number 2 : ");

       num2 = ar.nextInt();

       ar.close();
```

```
        int add, sub, mul, div, mod;

        add = num1 + num2;

        sub = num1 - num2;

        mul = num1 * num2;

        div = num1 / num2;

        mod = num1 % num2;

        switch (ch) {

            case 1:

                System.out.println("\n Addition of "+num1+" and "+num2+"
is -> "+add);

                break;

            case 2:

                System.out.println("\n Substraction of "+num1+" and
"+num2+" is -> "+sub);

                break;

            case 3:

                System.out.println("\n Multplication of "+num1+" and
"+num2+" is -> "+mul);

                break;

            case 4:

                System.out.println("\n Division of "+num1+" and "+num2+"
is -> "+div);

                Break;

            case 5:

                System.out.println("\n Modulo of "+num1+" and "+num2+"
is -> "+mod);
```

```
                break;

            default:

            System.out.println("\n Please Enter valid Input");

                break;

        }

    }

}
```

```
+-----------------------------+
| Press 1 for Addition        |
| Press 2 for Substraction    |
| Press 3 for Multiplication  |
| Press 4 for Division        |
| Press 5 for Modulo          |
| Press 6 for Exit            |
+-----------------------------+

Enter Your Choice : 1

Enter Number 1 : 21
Enter Number 2 : 4

Addition of 21 and 4 is -> 25
```

15. WAP for constructor.

```java
// Program for use of Constructor

public class Program_15 {

   String name, branch;

   Program_15(String n, String b){

       name = n;

       branch = b;

   }

   void details(){

       System.out.println("\n Name : "+name+"\n Branch : "+branch);

   }

   public static void main(String[] args) {

       Program_15 s1 = new Program_15("","");

       Program_15 s2 = new Program_15("Aman","BCA");

       Program_15 s3 = new Program_15("Yash","BCA");

       Program_15 s4 = new Program_15("Nivid","IMCA");

       Program_15 s5 = new Program_15("Aman","MCA");


       s1.details();

       s2.details();

       s3.details();

       s4.details();

       s5.details();

   }

}
```

```
Name :
Branch :

Name : Aman
Branch : BCA

Name : Yash
Branch : BCA

Name : Nivid
Branch : IMCA

Name : Aman
Branch : MCA
```

16. WAP for constructor overloading.

```
// program for constructor overloading

public class Program_16 {

   int id;

   String name;

    Program_16(){

       System.out.println("\n This is a default constructor");

   }

   Program_16(int i, String n){

       id = i;

       name = n;

   }

   public static void main(String[] args) {

       Program_16 s = new Program_16();

       System.out.println(" Default Constructor values: ");

       System.out.println(" Student Id : "+s.id + "\n Student Name :
"+s.name);



       System.out.println("\n Parameterized Constructor values: ");

       Program_16 Student = new Program_16(10, "David");

       System.out.println(" Student Id : "+Student.id + "\n Student
Name : "+Student.name);

   }

}
```

```
This is a default constructor
Default Constructor values:
Student Id : 0
Student Name : null

Parameterized Constructor values:
Student Id : 10
Student Name : David
```

17. WAP for single inheritance.

```
// Program for single inheritance.

public class Program_17 {

   float salary=40000;

}

class Programmer extends Program_17{

   int bonus=10000;

   public static void main(String[] args){

        Programmer p=new Programmer();

        System.out.println("Programmer salary is:"+p.salary);

        System.out.println("Bonus of Programmer is:"+p.bonus);

   }

}
```

Error in Output

18. WAP for multilevel inheritance.

```
// Program for MultiLevel Inheritance

public class Program_18 {

   public Program_18()

   {

       System.out.println("Class Program_18");

   }

   public void vehicleType()

   {

       System.out.println("Vehicle Type: Program_18");

   }

}

class Maruti extends Program_18{

   public Maruti(){

       System.out.println("Class Maruti");

   }

   public void brand()

   {

       System.out.println("Brand: Maruti");

   }

   public void speed()

   {

       System.out.println("Max: 90Kmph");

   }

}
```

```
class Maruti800 extends Maruti{


   public Maruti800()

   {

       System.out.println("Maruti Model: 800");

   }

   public void speed()

   {

       System.out.println("Max: 80Kmph");

   }

   public static void main(String[] args) {

       Maruti800 obj = new Maruti800();

       obj.vehicleType();

       obj.brand();

       obj.speed();

   }

}
```

Error in Output

19. WAP for hierarchical inheritance.

```
// Program for hierachical Inheritance

class A {

   public void methodA() {

        System.out.println("\n Method of Class A");

   }

}

class B extends A {

   public void methodB() {

        System.out.println("\n Method of Class B");

   }

}

class C extends A {

   public void methodC() {

        System.out.println("\n Method of Class C");

   }

}

class D extends A {

   public void methodD() {

        System.out.println("\n Method of Class D");

   }

}

class Program_19 {

   public static void main(String args[]) {

        B obj1 = new B();
```

```
        C obj2 = new C();

        D obj3 = new D();

        // All classes can access the method of class A

        obj1.methodA();

        obj2.methodA();

        obj3.methodA();

    }

}
```

```
Method of Class A

Method of Class A

Method of Class A
```

20. WAP to find area of circle, square and rectangle. (Method Overloading)

```
// Program to find area of circle, square and rectangle. (Method Overloading)

public class Program_20

{

   public static void main(String[] args)

   {

       Circle obj1 = new Circle();

       obj1.Area(3);

       obj1.Area(5.5);

       Square obj2 = new Square();

       obj2.Area(20);

       obj2.Area(5.2);

       Rectangle obj = new Rectangle();

       obj.Area(30, 20);

       obj.Area(12.5, 4.5);



   }

}

class Square

{

   void Area(double side)

   {
```

```
        System.out.println("\n Area of the Square: "+ side * side);
    }
    void Area(float side)
    {
        System.out.println("\n Area of the Square: "+ side * side);
    }
}
class Circle
{
    static final double PI = Math.PI;
     void Area(double r)
    {
        double A = PI * r * r;
         System.out.println("\n The area of the circle is : " + A);
    }
     void Area(float r)
    {
        double A = PI * r * r;
         System.out.println("\n The area of the circle is : " + A);
    }
}
class Rectangle
{
    void Area(double l, double b)
    {
```

```
        System.out.println("\n Area of the rectangle: " + l * b);

    }

    void Area(int l, int b)

    {

        System.out.println("\n Area of the rectangle: " + l * b);

    }

}
```

```
The area of the circle is : 28.274333882308138

The area of the circle is : 95.03317777109123

Area of the Square: 400.0

Area of the Square: 27.040000000000003

Area of the rectangle: 600

Area of the rectangle: 56.25
```

21. WAP to Implement abstract class.

```java
// Program  to Implement abstract class.

abstract class Base {

   abstract void fun();

}

class Derived extends Base {

   void fun() {

       System.out.println("\n Derived fun() called");

   }

}

class Program_21 {

   public static void main(String args[]) {

       Base b = new Derived();

       b.fun();

   }

}
```

```
Derived fun() called
```

22. WAP to Implement interface.

```
// Program to implement interface

interface bikes {

   void views();

}

class ask implements bikes {

   public void views() {

        System.out.println("\n What do you think about Bikes..?");

   }

}

class choice implements bikes {

   public void views() {

        System.out.println("\n I always preffered Car over Bike..");

   }

}

class Program_22 {

   public static void main(String[] args) {

        bikes d = new ask();

        bikes e = new choice();

        d.views();

        e.views();

   }

}
```

```
What do you think about Bikes..?

I always preffered Car over Bike..
```

23. WAP to use super keyword

```java
// Program to use Super Keyword

class Animal {

   String color = "White";

}

class Dog extends Animal {

   String color = "Black";



   void printColor() {

       System.out.println("\n Color of Dog Class -> "+color);

       System.out.println("\n Color of Animal Class -> "+super.color);

   }

}

class Program_23 {

   public static void main(String args[]) {

       Dog d = new Dog();

       d.printColor();

   }

}
```

```
Color of Dog Class -> Black

Color of Animal Class -> White
```

The End :)