

NAME- DEVANSHU SINGH RAWAT

COURSE- MCA 2A

ROLL NO – 2201135

CLASS ROLL NO-23

Problem Statement - Write a java program to create a class named as student and implement the constructor.

Code-

```
class Student {  
    int id;  
    int roll;  
    String name;  
    Student(int i, int rol,String nam){  
        this.id=i;  
        this.roll=rol;  
        this.name=nam;  
    }  
    void display(){  
        System.out.println("The name of student is-"+name);  
        System.out.println("The id of student is-"+id);  
        System.out.println("The roll no of student is-"+roll);  
    }  
  
    public static void main(String[] args) {  
        Student ob = new Student(101,13,"Dev");  
        ob.display();  
    }  
}
```

```
C:\Users\Dev - Admin\Desktop\JaaVaa\cmd_java>java Student  
The name of student is-Dev  
The id of student is-101  
The roll no of student is-13  
  
C:\Users\Dev - Admin\Desktop\JaaVaa\cmd_java>_
```

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Problem Statement - Akshay wants to calculate the percentage of marks in four subjects. Write a JAVA program that accepts four subjects marks through command line argument and calculate the percentage.

CODE-

```
import java.util.Scanner;

public class Test{

    public static void main(String args[]){

        Scanner sc=new Scanner(System.in);

        System.out.print("Enter marks of Physics: ");

        int phy=sc.nextInt();

        System.out.print("Enter marks of Chemistry: ");

        int chem=sc.nextInt();

        System.out.print("Enter marks of Maths: ");

        int maths=sc.nextInt();

        System.out.print("Enter marks of Biology: ");

        int bio=sc.nextInt();

        float avg=(phy+chem+maths+bio)/4;

        System.out.println("the average of sub is-"+avg);

    }

}
```

```
C:\Users\Dev - Admin\Desktop\JaaVaa\cmd_java>java Test
Enter marks of Physics: 73
Enter marks of Chemistry: 91
Enter marks of Maths: 80
Enter marks of Biology: 82
the average of sub is-81.0
```

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Problem Statement - Write a JAVA program to compute the sum of even digits in a 5 digit number.

CODE-

```
public class Test{

    public static void main(String[] args) {
        Scanner sc=new Scanner(System.in);
        int n=Integer.parseInt(args[0]);
        int sum=0;
        while(n!=0){

            int y=n%10;
            if(y%2==0){
                sum=sum+y;
            }
            n=n/10;
        }

        System.out.println("sum of even no: "+sum);

    }
}
```

```
C:\Users\Dev - Admin\Desktop\JaaVaa\cmd_java>java Test 48512
sum of even no: 14

C:\Users\Dev - Admin\Desktop\JaaVaa\cmd_java>
```

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Problem Statement - Create a class named as “Animal” which has methods eat() and sleep(). Create a child class of animal named as “Bird” and override the parent class methods such that define a new method named as fly() in the same class. Create an instance of Animal Class and invoke eat() and sleep(). Create an instance of Bird Class and invoke eat(), sleep() and fly().

CODE-

```
class Animal {  
    void eat(){    System.out.println("Animal class eat");  }  
    void sleep(){    System.out.println("Animal class sleep");  }  
}  
  
class Bird extends Animal {  
    void eat(){    System.out.println("Birds class eat");  }  
    void sleep(){    System.out.println("Birds class sleep");  }  
    void fly(){        System.out.println("Birds class fly");  }  
    public static void main(String[] args) {  
        Animal an=new Animal();  
        Bird bd=new Bird();  
        an.eat();  
        an.sleep();  
        bd.eat();  
        bd.sleep();  
        bd.fly();  
    }  
}
```

```
C:\Users\Dev - Admin\Desktop\JaaVaa\cmd_java>java Bird  
Animal class eat  
Animal class sleep  
Birds class eat  
Birds class sleep  
Birds class fly
```

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Problem Statement - Write a java program to calculate the cyclic sum of 5 digits number.

CODE-

```
import java.util.Scanner;
class cyclic_sum{

    public static void main(String[] args) {

        Scanner sc=new Scanner (System.in);
        int n=sc.nextInt();
        int rev=0; int m=n;
        int sum=0;
        while(n!=0){
            int y=n%10;
            rev=(rev*10)+y;
            n=n/10;
        }
        while(rev!=0){
            int n2=rev;
            while(n2!=0){
                int y=n2%10;
                sum=sum+y;
                n2=n2/10;
            }
            rev=rev/10;
        }

        System.out.println("The sum is: "+sum);
    }
}
```

```
C:\Users\Dev - Admin\Desktop\JaaVaa\cmd_java>javac Test.java
```

```
C:\Users\Dev - Admin\Desktop\JaaVaa\cmd_java>java cyclic_sum
```

```
12345
```

```
The sum is: 55
```

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Problem Statement - Akshay wants to calculate the area of Square, Rectangle and Circle. Create three different methods having same name calculateArea(). Take input from command line.

CODE-

```
//area calculation
class Test{

    void calculateArea(int r){

        int sq=r*r;

        System.out.println("Area of square: "+sq);

    }

    void calculateArea(double pi,double r,double r2){

        double cir = pi * r * r;

        System.out.println("Area of circle: "+cir);

    }

    void calculateArea(int m,int n){

        int x=m*n;

        System.out.println("Area of Rectangle: "+x);

    }

    public static void main(String args[]){

        Test ab = new Test();

        ab.calculateArea(5);

        ab.calculateArea(3.14,4,4);

        ab.calculateArea(5,6);

    }

}
```

```
C:\Users\Dev - Admin\Desktop\JaaVaa\cmd_java>java Test
Area of square: 25
Area of circle: 50.24
Area of Rectangle: 30
```

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Problem Statement - Create a Class “Person” and declare the following variable name (string) and save it in a file called “Person.java”. Create a Class called Employee that will inherit the Person Class , the other data members of Employee Class are AnnualSalary (double), YearOfJoining (int) and MobileNumber (long). Your Class Should have the necessary constructors and the getter and the setter methods. Do create Class Test having main method to fully check your class definition.

code-

```
import java.util.*;
```

```
class Person{
```

```
    String name;
```

```
}
```

```
class Employee extends Person{
```

```
    private double anualSalary;
```

```
    private int year;
```

```
    private long phone;
```

```
    void setAnualSal(double anSal) {this.anualSalary=anSal;        }
```

```
    double getAnualSal() {        return anualSalary;    }
```

```
    void setYear(int yr)    {        this.year=yr;        }
```

```
    int getYear()        {        return year;        }
```

```
    void setPhone(long phone){    this.phone=phone;    }
```

```
    double getPhone()    {        return phone;        }
```

```
}
```

```
class TestEmployee    {
```

```
    public static void main(String[] args){
```

```
        Employee emp=new Employee();
```

```
        Scanner sc=new Scanner(System.in);
```

```
        System.out.println("Enter Name, Anual Salary, Year of Joining and Phone no.");
```

```
        emp.name=sc.next();
```

```
        emp.setAnualSal(sc.nextDouble());
```

```
        emp.setYear(sc.nextInt());
```

```
        emp.setPhone(sc.nextLong());
```

```
        System.out.println("Entered values are:");
```

```
        System.out.println(emp.name);
```

```
        System.out.println(emp.getAnualSal());
```

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```
        System.out.println(emp.getYear());  
        System.out.println(emp.getPhone());  
    }  
}
```

```
C:\Users\Dev - Admin\Desktop\JaaVaa\cmd_java>javac Person.java
```

```
C:\Users\Dev - Admin\Desktop\JaaVaa\cmd_java>java TestEmployee
```

```
Enter Name, Anual Salary, Year of Joining and Phone no.
```

```
Dev 700000 2023 1234567890
```

```
Entered values are:
```

```
Dev
```

```
700000.0
```

```
2023
```

```
1.23456789E9
```


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Problem Statement - Create PIN using three given input numbers. Secure Assets Private Ltd", a small company that deals with digital lockers which can be locked and unlocked using PINs (password). You have been asked to work on the module that is expected to generate password using three input number.

Code-

```
import java.util.Scanner;

public class pinCreate {

    public static void main(String[] args) {

        Scanner sc = new Scanner(System.in);

        System.out.println("Enter your 3 tripple digit numbers:");

        int pin1 = sc.nextInt();    int pin2 = sc.nextInt();    int pin3 = sc.nextInt();

        int pass = 0;    int max = 0;    int min = 0;

        int i = 1;

        while (i < 4) {

            max = Math.max(pin1 % 10, max);

            max = Math.max(max, pin2 % 10);

            max = Math.max(max, pin3 % 10);

            min = Math.min(pin1 % 10, pin2 % 10);

            min = Math.min(pin3 % 10, min);

            pass = 10 * pass + min;    i++;

            pin1 = pin1 / 10;    pin3 = pin3 / 10;    pin2 = pin2/10;

        }

        pass = pass * 10 + max;

        StringBuilder pins=new StringBuilder(String.valueOf(pass));

        System.out.println("PIN: "+pins.reverse());

    }

}
```

```
C:\Users\Dev - Admin\Desktop\JaaVaa\cmd_java>java pinCreate
Enter your 3 tripple digit numbers:
328
661
942
PIN: 9321
```

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Problem Statement - Write a java program to search element in a given array.

Code-

```
import java.util.Scanner;

public class Test {

    public static void main(String[] args) {

        Scanner sc=new Scanner(System.in);

        int p[]=new int[10];

        System.out.println("Fill the array");

        for(int i=0;i<10;i++){

            p[i]=sc.nextInt();

        }

        System.out.println("Enter a number to search");

        int n=sc.nextInt();

        int count=0;

        for(int i=0;i<10;i++){

            if(p[i]==n){    count++;    break;    }

        }

        if(count>=1)    System.out.println("Number is present");

        else    System.out.println("Number is not present");

    }

}
```

```
C:\Users\Dev - Admin\Desktop\JaaVaa\cmd_java>java Test
Fill the array
7 9 6 8 3 1 8 5 4 18
Enter a number to search
2
Number is not present
```

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Problem Statement - Write a java program to delete a element in a given array.

Code-

```
import java.util.Scanner;

public class Test {

    public static void main(String[] args) {

        Scanner sc=new Scanner(System.in);

        int p[]=new int[10];

        int d[]=new int[9];

        System.out.println("Fill the array");

        for(int i=0;i<10;i++){

            p[i]=sc.nextInt();

        }

        System.out.println("Enter a number to delete");

        int n=sc.nextInt();

        for(int i=0,k=0;i<10;i++) {

            if(p[i]!=n){

                d[k]=p[i];

                k++;

            }

        }

        for(int i=0;i<9;i++)

            System.out.print(d[i]+" ");

    }

}
```

```
C:\Users\Dev - Admin\Desktop\JaaVaa\cmd_java>java Test
Fill the array
11 22 33 44 55 66 77 88 99 100
Enter a number to delete
66
11 22 33 44 55 77 88 99 100
```

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Problem Statement – Write a program to create two static method –

A static method called powering(int n1,int n2)—where it returns n1 with power of n2

A static method called powering(double n1, int n2)—where it returns n1 with power of n2

Invoke both to return their value.

Code-

```
public class Calculator {
    public static int pow(int n1, int n2)
    {
        int po=1;
        while(n2>=1){
            po=po*n1;
            n2--;
        }
        return po;
    }

    public static double pow(double n1,int n2){
        double po=1;
        while(n2>0.0){
            po=po*n1;
            n2--;
        }
        return po;
    }

    public static void main(String[] args) {

        Scanner sc=new Scanner(System.in);
        int n1=sc.nextInt();
        int powe=sc.nextInt();
        double n11=sc.nextDouble();

        System.out.println("The n1 value after power is-- "+ pow(n1,powe));
        System.out.println("the n1 value after power is-- "+ pow(n11,powe)); }
}
```

```
C:\Users\Dev - Admin\Desktop\JaaVaa\cmd_java>java Calculator
2 4 2.3
the n1 value after power is-- 16
the n1 value after power is-- 27.984099999999999
```

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Problem Statement- Create a jagged array in java and display the sum of even number-

Code-

```
import java.util.Scanner;

public class Jaggedarr {
    public static void main(String[] args) {

        int sum=0;
        int a[][]=new int[3][];
        a[0]=new int[3];
        a[1]=new int[3];
        a[2]=new int[3];

        Scanner sc=new Scanner(System.in);

        for(int i=0;i<3;i++){
            for(int j=0;j<a[i].length;j++){
                a[i][j]=sc.nextInt();
            }
        }

        for(int i=0;i<3;i++){
            for(int j=0;j<a[i].length;j++){
                if(a[i][j] % 2==0){
                    sum=sum+a[i][j];
                }
            }
        }

        System.out.println("The sum of even digit -" +sum);

    }
}
```

```
C:\Users\Dev - Admin\Desktop\JaaVaa\cmd_java>java Jaggedarr
1 2 3
4
5 6
7 8 9
The sum of even digit -20
```