

JAVA ASSIGNMENT

1. Write a Java program to change temperature from Celsius to Fahrenheit and vice versa.

```
import java.util.Scanner;
public class p1 {
    public static void main(String[] args) {
        Scanner sc=new Scanner(System.in);
        System.out.println("enter the value in celcius:");
        int celcius= sc.nextInt();
        int farenhite=((9*celcius)/5)+32;
        System.out.println("the value in farenhite is:"+farenhite);
    }
}
```

output:

enter the value in celcius:

30

the value in farenhite is:86

2. Write a Java Program to check if a number is Positive or Negative.

```
package com.company;
import java.util.Scanner;
public class p2 {
    public static void main(String[] args) {
        Scanner sc=new Scanner(System.in);
        System.out.println("enter a number");
        int a= sc.nextInt();
        if(a>=0){
            System.out.println("the number is positive ");
        }
        else {
            System.out.println("the number is negative");
        }
    }
}
```

output

enter a number

45

the number is positive

enter a number

-45

the number is negative

3. Write a Java program to find maximum of three numbers.

```
import java.util.Scanner;
public class p3 {
    public static void main(String[] args) {
        Scanner sc=new Scanner(System.in);
        System.out.println("enter three number:");
        int a= sc.nextInt();
        int b= sc.nextInt();
        int c= sc.nextInt();
        if(a>b&& a>c){
            System.out.println("a is greater");
        }
        else if(b>a&& b>c){
            System.out.println("b is greater");
        }
        else{
            System.out.println("c is greater");
        }
    }
}
```

output

enter three number:

4 5 2

b is greater

4. Write a Java program to swap two numbers.

```
import java.util.Scanner;
public class p4 {
    public static void main(String[] args) {
        Scanner sc=new Scanner(System.in);
        int num1= sc.nextInt();
        int num2= sc.nextInt();
        swap(num1,num2);
    }
    private static boolean swap(int num1, int num2) {
```

```

        int temp =num1;
        num1=num2;
        num2=temp;
        System.out.println(swap(4,5));
        return false;
    }
}

```

output:

5. Write a Java program to convert miles to kilometers.

```

import java.util.Scanner;
public class p5 {
    public static void main(String[] args) {
        Scanner sc=new Scanner(System.in);
        System.out.println("enter the value of km");
        int km= sc.nextInt();
        double miles=0.612*km;
        System.out.println("the value in miles is:");
        System.out.println(miles);
    }
}

```

output;

enter the value of km

3

the value in miles is:

1.8359999999999999

6. Write a Java program to check whether a year is leap year or not.

```

import java.util.Scanner;
public class p6 {
    public static void main(String[] args) {
        Scanner sc=new Scanner(System.in);
        System.out.println("enter the year:");
        int year= sc.nextInt();
    }
}

```

```

if(year%4==0||year%400==0){
    System.out.println("it is a leap year");
}
else if(year%100==0){
    System.out.println("it is not a leap year");
}
else {
    System.out.println("it is not a leap year");
}
}
}

```

output:

enter the year:

1342

it is not a leap year

7. Write a Java program for following grading system. Note:

Percentage \geq 90% : Grade A

Percentage \geq 80% : Grade B

Percentage \geq 70% : Grade C

Percentage \geq 60% : Grade D

Percentage \geq 40% : Grade E

Percentage $<$ 40% : Grade F

```

import java.util.Scanner;
public class p7 {
    public static void main(String[] args) {
        Scanner sc=new Scanner(System.in);
        System.out.println("enter the percentage");
        int percent=sc.nextInt();
        if(percent>=90)
            System.out.println("Grade A");
        else if(percent>=80)
            System.out.println("Grade B");
        else if(percent>=70)

```

```

        System.out.println("Grade C");
    else if(percent>=60)
        System.out.println("Grade D");
    else if(percent>=40)

        System.out.println("Grade E");
    else
        System.out.println("Grade F");
    }
}

```

output:

enter the percentage

45

Grade E

8. Write a Java program to check whether a number is divisible by a number given by user.

```

import javax.swing.*.*;
import java.util.Scanner;

public class p8 {
    public static void main(String[] args) {
        Scanner sc=new Scanner(System.in);
        System.out.println("enter a number");
        int a=sc.nextInt();
        //to check whether a given number is divisible by given number or not
        if(a%a==0){
            System.out.println("the nnumber is divisible");
        }
        else if(a%a!=0){
            System.out.println("the number is not divisible ");
        }
        else {
            System.out.println("the number is not divisible");
        }
    }
}

```

output:

enter a number

34

the nnumber is divisible by34

9. Write a Java program to calculate factorial of 12.

```
//create a factorial 12
public class p9 {
    public static void main(String[] args) {
        int i, fact=1;
        int number=12;
        for(i=1;i<=number;i++){
            fact=fact*i;
        }
        System.out.println("factorial of"+number+ "is" +fact);
    }
}
```

output:

factorial of12is479001600

10. Write a Java program for Fibonacci series.

```
public class p11 {
    public static void main(String[] args) {
        int n1=0,n2=1,n3,i,count=10;
        System.out.print(n1+" "+n2);//printing 0 and 1

        for(i=2;i<count;++i)//loop starts from 2 because 0 and 1 are already printed
        {
            n3=n1+n2;
            System.out.print(" "+n3);
            n1=n2;
            n2=n3;
        }

    }
}
```

output:

0 1 1 2 3 5 8 13 21 34

11. Write a Java program to reverse a number.

```

public class p19 {
    public static void main(String[] args) {
        int num = 1234567, reversed = 0;
        for(;num != 0; num /= 10) {
            int digit = num % 10;
            reversed = reversed * 10 + digit;
        }
        System.out.println("Reversed Number: " + reversed);
    }
}

```

output:

Reversed Number: 7654321

12. Admission to a professional course is subject to the following conditions:

(a) marks in Mathematics ≥ 60

(b) marks in Physics ≥ 50

(c) marks in Chemistry ≥ 40

(d) Total in all 3 subjects ≥ 200

(Or) Total in Maths & Physics ≥ 150 Given the marks in the 3 subjects of n (user input)

students, write a program to process the applications to list the eligible candidates.

```

import javax.swing.*;
import java.util.Scanner;
public class p12 {
    public static void main(String[] args) {
        Scanner sc = new Scanner(System.in);
        System.out.println("enter the marks oof three subjects:");
        int phy = sc.nextInt();
        int mat = sc.nextInt();
        int chem = sc.nextInt();
        int t = phy + mat + chem;
    }
}

```

```

int pm = phy + mat;
if (phy >= 70 && chem >= 60 && mat >= 70
    && (t >= 225 || pm >= 150)) ;
System.out.println("eligible");
else{
    System.out.println("not eligible");
}
}
}
}

```

output:

13. Write a Java program to calculate the sum of natural numbers up to a certain range.

```

public class p13 {
    public static void main(String[] args) {
        int n = 100;
        int sum=0;
        for(int i=0;i<n;i++) {
            sum += i;
        }
        System.out.println("sum is "+sum);
    }
}

```

output:

sum is 4950

14. Write a Java program to print all multiple of 10 between a given interval.

```

public class p14 {
    public static void main(String[] args) {
        int n=10;
        for(int i=1;i<11;i++){
            System.out.println(10*i);
        }
    }
}

```



```
}  
}
```

output:

```
10  
20  
30  
40  
50  
60  
70  
80  
90  
100
```

15. Write a Java program to generate multiplication table.

```
import java.util.Scanner;  
public class p15 {  
    public static void main(String[] args) {  
        Scanner sc=new Scanner(System.in);  
        System.out.println("enter a number");  
        int n= sc.nextInt();  
        for (int i=0;i<11;i++){  
            System.out.println(i*n);  
        }  
    }  
}
```

output:

enter a number 4

0 4

8

12 16 20 24 28 32 36 40

16. Write a Java program to find HCF of two Numbers.

```
public class p16 {  
    public static void main(String[] args) {  
        int num1 = 24, num2 = 36, hcf=0;  
        for (int i = 1; i <= num1 || i <= num2; i++)  
        {  
            if (num1 % i == 0 && num2 % i == 0)  
                hcf = i;  
        }  
        System.out.println("The HCF: " + hcf);  
    }  
}
```

output:

The HCF: 12

17. Write a Java program to find LCM of two Numbers.

```
public class p17 {  
    public static void main(String[] args) {  
        // Numbers  
        int a = 15, b = 25;  
  
        // Checking for the largest  
        // Number between them  
        int ans = (a > b) ? a : b;  
  
        // Checking for a smallest number that  
        // can be divided by both numbers  
        while (true) {  
            if (ans % a == 0 && ans % b == 0)  
                break;  
            ans++;  
        }  
  
        // Printing the Result  
        System.out.println("LCM of " + a + " and " + b  
            + " : " + ans);  
    }  
}
```

output:

LCM of 15 and 25 : 75

18. Write a Java program to count the number of digits of an integer

```
public class p18 {  
    public static void main(String[] args) {  
        int count = 0, num = 20000;  
        while (num != 0) {  
            // num = num/10  
            num /= 10;  
            ++count;  
        }  
        System.out.println("Number of digits: " + count);  
    }  
}
```

output:

Number of digits: 5

19. Write a Java program to check whether a number is palindrome or not.

```
import java.util.Scanner;  
public class p19 {  
    public static void main(String args[]){  
        Scanner sc=new Scanner(System.in);  
        System.out.print("Input a number: ");  
        int n = sc.nextInt();  
        int sum = 0, r;  
        int temp = n;  
        while(n>0)  
        {  
            r = n % 10;  
            sum = (sum*10)+r;  
            n = n/10;  
        }  
        if(temp==sum)  
            System.out.println("It is a Palindrome number.");  
    }  
}
```

```

        else
            System.out.println("Not a palindrome");
    }
}

```

output:

Input a number: 12321

It is a Palindrome number.

20. Write a Java program to check whether a number is prime or not.

```

import java.util.Scanner;
public class p20 {
    public static void main(String[] args) {
        Scanner sc=new Scanner(System.in);
        System.out.println("enter a number:");
        int a=sc.nextInt();
        if (a==0|a==1){
            return;
        }
        for (int i=2;i<a/2;++i){
            if(a%i==0){
                System.out.println("not a prime number");
            }
            else{
                System.out.println("prime number");
            }
        }
    }
}

```

output:

enter a number:

7

prime number

21. Write a Java program to convert a Binary Number to Decimal and Decimal to Binary.

```

public class p21 {
    public static void main(String[] args) {
        //declare variable to store decimal number,quotient and array
        int quot,i=1,j;
    }
}

```

```

int [] arr=new int[100];
//create a scanner input class
Scanner sc=new Scanner(System.in);
System.out.println("enter a decimal number:");
int dec_num= sc.nextInt();
//initialize the quotient ,
quot=dec_num;
// Convert the decimal number to binary and store binary digits
while (quot != 0) {
    arr[i++] = quot % 2;
    quot = quot / 2;
}

// Display the binary representation of the decimal number
System.out.print("Binary number is: ");
for (j = i - 1; j > 0; j--) {
    System.out.print(arr[j]);
}
System.out.print("\n");
}
}

```

output:

enter a decimal number:

23

Binary number is: 10111

22. Write a Java program to find median of a set of numbers.

```

import java.util.Arrays;
public class p22 {
    public static void main(String[] args) {
        // Define and initialize an array of integers
        int[] nums = { 10, 2, 38, 22, 38, 23 };
        // Display the original array
        System.out.println("Original array: " + Arrays.toString(nums));
        // Calculate and display the median of the array
        System.out.println("Median of the said array of integers: " + getMedian(nums));
        // Define and initialize another array of integers
        int[] nums1 = { 10, 2, 38, 23, 38, 23, 21 };
        // Display the original array
        System.out.println("\nOriginal array: " + Arrays.toString(nums1));
        // Calculate and display the median of the second array
        System.out.println("Median of the said array of integers: " + getMedian(nums1));
    }
}

```

```

    }
    public static int getMedian(int[] array) {
        // Check if the length of the array is even
        if (array.length % 2 == 0) {
            // Calculate the median for even-sized arrays
            int mid = array.length / 2;
            return (array[mid] + array[mid - 1]) / 2;
        }
        // Calculate the median for odd-sized arrays
        return array[array.length / 2];
    }
}

```

output:

Original array: [10, 2, 38, 22, 38, 23]

Median of the said array of integers: 30

Original array: [10, 2, 38, 23, 38, 23, 21]

Median of the said array of integers: 23

23. Write Java programs for the patterns given bellow:

(a) 1

2 3 4

5 6 7 8 9

(b) 1

2 1 2

3 2 1 2 3

4 3 2 1 2 3 4

```

public class p23 {
    public static void main(String[] args) {
        int a = 1;
        for (int i = 1; i <= 4; i++) {
            for (int j = 1; j <= i; j++) {

```

```

        System.out.print(a++ + "\t");
    }
    System.out.println();
}
}
}

```

output:

```

1
2 3 4
5 6 7 8 9

```

24. Write a Java program to calculate Sum & Average of an integer array.

```

package com.company;
//import util.java.s
import java.util.Scanner;
public class p24 {
    public static void main(String[] args) {
        int n, sum = 0;
        float average;
        Scanner sc = new Scanner(System.in);
        System.out.print("Enter no. of elements you want in array:");
        n = sc.nextInt();
        int a[] = new int[n];
        System.out.println("Enter all the elements:");
        for(int i = 0; i < n ; i++)
        {
            a[i] = sc.nextInt();
            sum = sum + a[i];
        }
        System.out.println("Sum:"+sum);
        average = (float)sum / n;
        System.out.println("Average:"+average);
    }
}

```

output:

Enter no. of elements you want in array:5

Enter all the elements:

23 12 56 45 33

Sum:169

Average:33.8

25. Write a Java program to implement stack using array.

```
public class p25 {private int maxSize;
    private Object[] stackArray;
    private int top;

    public p25(int size) {
        maxSize = size;
        stackArray = new Object[maxSize];
        top = -1;
    }

    public void push(Object value) {
        if (isFull()) {
            System.out.println("Stack is full. Cannot push element.");
            return;
        }
        top++;
        stackArray[top] = value;
    }

    public Object pop() {
        if (isEmpty()) {
            System.out.println("Stack is empty. Cannot pop element.");
            return -1;
        }
        int oldTop = top;
        top--;
        stackArray[oldTop] = null;
        return stackArray[oldTop];
    }

    public Object peek() {
        if (isEmpty()) {
            System.out.println("Stack is empty. Cannot peek element.");
            return -1;
        }
        return stackArray[top];
    }
}
```



```

    }

    public boolean isEmpty() {
        return (top == -1);
    }

    public boolean isFull() {
        return (top == maxSize - 1);
    }

    @Override
    public String toString() {
        return "Stack: " + Arrays.toString(stackArray);
    }
}

```

26. Write a Java program to implement Queue using array.

27. Write a Java program to enter n elements in an array and find smallest number among them.

```

public class p27 {
    public static void main(String[] args)
    {
        // Either we can initialize array elements or can
        // get input from user. Always it is best to get
        // input from user and form the array
        int[] initializedArray
            = new int[] { 25, 110, 74, 75, 5 };
        System.out.println("Given array ");
        for (int i = 0; i < initializedArray.length; i++) {
            System.out.println(initializedArray[i]);
        }
        // Initialize minVal with first element of array.
        int minVal = initializedArray[0];
        // Loop through the array
        for (int i = 0; i < initializedArray.length; i++) {
            // Compare elements of array with minVal and
            // if condition true, make minVal to that
            // element
            if (initializedArray[i] < minVal)
                minVal = initializedArray[i];
        }
        System.out.println("Smallest element present in given array: " + minVal);
    }
}

```

```
}  
}
```

output:

Given array

25 110 74 75 5

Smallest element present in given array: 5

28. Write Java program to find the sum of all odd numbers in a array.

```
import java.util.Scanner;  
public class p28 {  
    static Scanner sc=new Scanner(System.in);  
    public static void main(String[] args){  
        int Size, i, OddSum = 0;  
        sc = new Scanner(System.in);  
        System.out.print(" Please Enter Number of elements in an array : ");  
        Size = sc.nextInt();  
        int [] a = new int[Size];  
        System.out.print(" Please Enter " + Size + " elements of an Array : ");  
        for (i = 0; i < Size; i++)  
        {  
            a[i] = sc.nextInt();  
        }  
        for(i = 0; i < Size; i++)  
        {  
            if(a[i] % 2 != 0)  
            {  
                OddSum = OddSum + a[i];  
            }  
        }  
        System.out.println("\n The Sum of Odd Numbers in this Array = " + OddSum);  
    }  
}
```

output:

Please Enter Number of elements in an array : 5

Please Enter 5 elements of an Array : 12 34 23 67 45

The Sum of Odd Numbers in this Array = 135

29. Write a Java program to find duplicate elements in a 1D array and find their frequency of occurrence.

```
import java.util.Arrays;
public class p29 {
    //main method
    public static void main(String[] args) {
        //Declare and initialize the array elements
        int[] array = { 2, 3, 5, 4, 3, 1, 3, 2, 1, };
        //sorting an array
        Arrays.sort(array);
        //declaring the variables
        int i,j,frequency;
        System.out.println("These elements are repeated along with its frequency-");
        //loop for logic implementation
        for(i=0; i<array.length; i++){
            frequency = 1;
            for(j=i+1; j<array.length; j++){
                if(array[j] == array[i]){
                    frequency++;
                } else {
                    break;
                }
            }
            i=j-1;
            if(frequency > 1){

                //printing the output
                System.out.println(array[i] + " --> " + frequency);
            }
        }
    }
}
```

output:

These elements are repeated along with its frequency-

1 --> 2

2 --> 2

3 --> 3

30. Write a Java program to print every alternate number of a given array

```

public class p30 {
    public static void main( String args[] ) {
        //initialize array
        int[] arr = { 11, 12, 13, 14, 15};
        //array length
        int n = arr.length;
        // loop through the array and increment by 2
        for(int i=0; i<n; i = i+2){
            //print element
            System.out.println(arr[i]);
        }
    }
}

```

output:

```

11
13
15

```

31. Write a Java program to show 0-arguments constructor.

```

public class p31 {
    int i;
    // constructor with no parameter
    private p31() {
        i = 5;
        System.out.println("Constructor is called");
    }
    public static void main(String[] args) {
        // calling the constructor without any parameter
        p31 obj = new p31();
        System.out.println("Value of i: " + obj.i);
    }
}

```

output:

```

Constructor is called
Value of i: 5

```

32. Write a Java program to show parameterized constructor.

```

import java.util.Scanner;
public class p32{
    public static class Edureka{
        String studentName;
        int studentAge;
        //constructor
        Edureka(String name, int age){
            studentName = name;
            studentAge = age;
        }
        void display(){
            System.out.println(studentName+ " "+studentAge);
        }
        public static void main(String args[])
        {
            Edureka myObj = new Edureka("Manan" , 19);
            myObj.display();
        }
    }
}

```

output:

Manan 19

33. Write a class, Commission, which has an instance variable, sales; an appropriate constructor; and a method, commission() that returns the commission. Now write a demo class to test the Commission class by reading a sale from the user, using it to create a Commission object after validating that the value is not negative. Finally, call the commission() method to get and print the commission. If the sales are negative, your demo should print the message “Invalid Input”.

```

import java.util.Scanner;

public class p29{
    public static class Commission
    {
        String name;
        int emp_no;
        int sal;
        double comm;
        void input() {
            Scanner sc=new Scanner(System.in);

```

```

        System.out.print("Enter employee name: ");
        name = sc.nextLine();
        System.out.print("Enter employee number: ");
        emp_no = sc.nextInt();
        System.out.print("Enter monthly sales value: ");
        sal = sc.nextInt();
    }
    void compute() {
        if (sal <= 50000) {
            comm = 5.0 / 100.0 * sal;
        }
        else if (sal <= 80000) {
            comm = 8.0 / 100.0 * sal;
        }
        else if (sal <= 100000) {
            comm = 10.0 / 100.0 * sal;
        }
        else if (sal < 0) {
            System.out.println("invalid output");
        }
        else {
            comm = 12.0 / 100.0 * sal;
        }
    }
    void display() {
        System.out.println("Employee name: " + name);
        System.out.println("Employee Number: " + emp_no);
        System.out.println("Monthly Sales: " + sal);
        System.out.println("Commission: " + comm);
    }
    public void main(String args[]) {
        com.company.p33.Commission obj = new com.company.p33.Commission();
        obj.input();
        obj.compute();
        obj.display();
    }
}

```

output:

