1.Write a program to reverse a word using loop?

A.

```
public class ReverseWord {
    public static void main(String[] args) {
        String input = "TEMPLE";
        String reversed = "";

        for (int i = input.length() - 1; i >= 0; i--) {
            reversed += input.charAt(i);
        }

        System.out.println("Reverse String: " + reversed);
    }
}
```

OUTPUT: String: TEMPLE

Sample Output:

Reverse String: ELPMET

2. Write a program to check the entered user name is valid or not. Get both the inputs from the user.

A.

```
import java.util.Scanner;
public class UserNameValidator {
    public static void main(String[] args) {
        Scanner scanner = new Scanner(System.in);
        System.out.print("Enter your username: ");
        String userName = scanner.nextLine();
        if (isValidUserName(userName)) {
            System.out.println("Valid username.");
        } else {
            System.out.println("Invalid username.");
        }
```

```
        scanner.close();
    }
    public static boolean isValidUserName(String userName) {
        return userName.matches("^[a-zA-Z0-9_-]{3,16}$");
    }
}
```

OUTPUT: Sample Input

Enter the user name: Saveetha@789

Reenter the user name: Saveetha@123

Sample Output:

User name is Invalid

3. Write a program to reverse a number using loop?(Get the input from user)

A.

```
import java.util.Scanner;
public class ReverseNumber {
    public static void main(String[] args) {
        Scanner scanner = new Scanner(System.in);
        System.out.print("Enter a number to reverse: ");
        int number = scanner.nextInt();
        int reversedNumber = 0;
        while(number != 0) {
            int digit = number % 10;
            reversedNumber = reversedNumber * 10 + digit;
            number /= 10;
        }
        System.out.println("Reversed Number: " + reversedNumber);
    }
}
```

OUTPUT:

Sample Input:

Number: 14567

Sample Output:

Reverse Number: 76541

4. Write a program to find whether the person is eligible for vote or not. And if that particular person is not eligible, then print how many years are left to be eligible.

A. import java.util.Scanner;

```
public class VoterEligibility {
    public static void main(String[] args) {
        Scanner scanner = new Scanner(System.in);
        System.out.println("Enter your age:");
        int age = scanner.nextInt();
        if (age >= 18) {
            System.out.println("You are allowed to vote.");
        } else {
            int yearsLeft = 18 - age;
            System.out.println("You are not allowed to vote. You can vote after " + yearsLeft + " years.");
        }
        scanner.close();
    }
}
```

OUTPUT: Sample Input:

Enter your age:

7

Sample output:

You are allowed to vote after 11 years

5. Find the LCM and GCD of n numbers?

A. import java.util.Scanner;

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

```
    Scanner input = new Scanner(System.in);
    System.out.print("Enter the number of elements: ");
    int n = input.nextInt();
    int[] numbers = new int[n];
    for (int i = 0; i < n; i++) {
        System.out.print("Enter number " + (i + 1) + ": ");
        numbers[i] = input.nextInt();
    }
    int lcm = numbers[0];
    int gcd = numbers[0];
    for (int i = 1; i < n; i++) {
        lcm = findLCM(lcm, numbers[i]);
        gcd = findGCD(gcd, numbers[i]);
    }
    System.out.println("LCM = " + lcm);
    System.out.println("GCD = " + gcd);
}
public static int findLCM(int a, int b) {
    return a * b / findGCD(a, b);
}
public static int findGCD(int a, int b) {
    if (b == 0) {
        return a;
    }
```

```
        return findGCD(b, a % b);
    }
}
```

OUTPUT: Sample Input:

N value = 2

Number 1 = 16

Number 2 = 20

Sample Output:

LCM = 80

GCD = 4

6. Write a program to print Right Triangle Star Pattern.

A.

```
public class RightTrianglePattern {
    public static void main(String[] args) {
        int n = 5;
        for (int i = 1; i <= n; i++) {
            for (int j = 1; j <= i; j++) {
                System.out.print("* ");
            }
            System.out.println();
        }
    }
}
```

OUTPUT: Sample Input:: n = 5

Output:

*

* *

* * *

* * * *

* * * * *

7. Write a program to print the below pattern?

A. public class PatternPrinting {

```
    public static void main(String[] args) {
        int rows = 5;
        for (int i = 0; i < rows; i++) {
            int number = 1;
            for (int j = 0; j <= i; j++) {
                System.out.print(number + " ");
                number = number * (i - j) / (j + 1);
            }
            System.out.println();
        }
    }
}
```

OUTPUT:

1

1 1

1 2 1

1 3 3 1

1 4 6 4 1

8. Write a program using function to calculate the simple interest. Suppose the customer is a senior citizen. He is being offered 12 percent rate of interest; for all other customers, the ROI is 10 percent.

A.

```
import java.util.Scanner;
public class SimpleInterestCalculator {
    public static void main(String[] args) {
        Scanner input = new Scanner(System.in);
        System.out.print("Enter the principal amount: ");
        double principal = input.nextDouble();
        System.out.print("Enter the number of years: ");
        double years = input.nextDouble();
        System.out.print("Is the customer a senior citizen (y/n): ");
        char customerType = input.next().charAt(0);
        double rateOfInterest = (customerType == 'y') ? 0.12 : 0.10;
        double interest = principal * rateOfInterest * years;
        System.out.println("Interest: " + interest);
        input.close();
    }
}
```

OUTPUT:

Sample Input:

Enter the principal amount: 200000

Enter the no of years: 3

Is customer senior citizen (y/n): n

Sample Output:

Interest: 60000

9. Java Program to Find Even Sum of Fibonacci Series Till number N?

A.

```
public class EvenSumFibonacci {
    public static void main(String[] args) {
        int n = 10; // Change the value of n as needed
        int a = 0, b = 1, c, sum = 0;
        System.out.println("Even Fibonacci Series up to " + n + " terms:");
        for (int i = 1; i <= n; i++) {
            c = a + b;
            a = b;
            b = c;
            if (c % 2 == 0) {
                sum += c;
                System.out.print(c + " ");
            }
        }
        System.out.println("\nSum of Even Fibonacci Series up to " + n + " terms: " + sum);
    }
}
```

OUTPUT:

Sample Input: n = 4

Sample Output: 33

(N = 4, So here the fibonacci series will be produced from 0th term till 8th term:0, 1,

1, 2, 3, 5, 8, 13, 21

Sum of numbers at even indexes = 0 + 1 + 3 + 8 + 21 = 33)

10. Write a program to print the numbers from M to N by skipping K numbers in between?

A.

```
public class SkipNumbers {
    public static void main(String[] args) {
        int M = 50;
        int N = 100;
        int K = 7;
        for (int i = M; i <= N; i += K) {
            System.out.print(i + ", ");
        }
    }
}
```

OUTPUT:

Sample Input:

M = 50

N = 100

K = 7

Sample Output:

50, 58, 66, 74, ...

11. Write a program for matrix addition?

A.

```
public class MatrixAddition {
    public static void main(String[] args) {
        int[][] mat1 = {{1, 2}, {5, 3}};
        int[][] mat2 = {{2, 3}, {4, 1}};
        int rows = mat1.length;
        int cols = mat1[0].length;
        int[][] sum = new int[rows][cols];

        for (int i = 0; i < rows; i++) {
            for (int j = 0; j < cols; j++) {
                sum[i][j] = mat1[i][j] + mat2[i][j];
            }
        }

        System.out.println("Mat Sum = ");
        for (int i = 0; i < rows; i++) {
            for (int j = 0; j < cols; j++) {
                System.out.print(sum[i][j] + " ");
            }
            System.out.println();
        }
```

```
    }
}
```

OUTPUT:

Sample Input:

Mat1 = 1 2

5 3

Mat2 = 2 3

4 1

Sample Output:

Mat Sum = 3 5

9 4

12. Write a program to print rectangle symbol pattern.

Get the symbol as input from user?

A.

```
import java.util.Scanner;
public class RectanglePattern {
    public static void main(String[] args) {
        Scanner scanner = new Scanner(System.in);
        System.out.print("Enter the symbol you want to use for the rectangle pattern: ");
        char symbol = scanner.next().charAt(0);
        int rows = 5;
        int columns = 10;
        for (int i = 0; i < rows; i++) {
            for (int j = 0; j < columns; j++) {
                System.out.print(symbol + " ");
            }
            System.out.println();
        }
    }
}
```

OUTPUT:

Sample Input:5

Sample Output:

5 5 5 5 5 5 5 5 5

5 5 5 5 5 5 5 5 5

5 5 5 5 5 5 5 5 5

5 5 5 5 5 5 5 5 5

5 5 5 5 5 5 5 5 5

13. Write a program that would sort a list of names in alphabetical order Ascending or Descending, choice get from the user?

A.

```
import java.util.ArrayList;
import java.util.Collections;
import java.util.Scanner;
public class NameSorter {
    public static void main(String[] args) {
        Scanner scanner = new Scanner(System.in);
        ArrayList<String> names = new ArrayList<>();
        System.out.println("Enter the number of names:");
        int numNames = scanner.nextInt();
        scanner.nextLine(); // Consume newline
        System.out.println("Enter the names:");
        for (int i = 0; i < numNames; i++) {
            names.add(scanner.nextLine());
        }
        System.out.println("Enter 'A' for Ascending order or 'D' for Descending order:");
        String sortOrder = scanner.nextLine().toUpperCase();

        if (sortOrder.equals("A")) {
            Collections.sort(names);
```

```
        } else if (sortOrder.equals("D")) {
            Collections.sort(names, Collections.reverseOrder());
        } else {
            System.out.println("Invalid input. Please enter 'A' or 'D'.");
            return;
        }
        System.out.println("Sorted Names:");
        for (String name : names) {
            System.out.println(name);
        }
    }
}
```

OUTPUT:

Sample Input:

Banana

Carrot

Radish

Apple

Jack

Order(A/D) : A

Sample Output:

Apple

Banana

Carrot

Jack

Radish

14. Write a program for matrix multiplication?

A.

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

```
        int[][] mat1 = {{1, 2}, {5, 3}};
        int[][] mat2 = {{2, 3}, {4, 1}};
        int[][] result = new int[2][2];
        for (int i = 0; i < 2; i++) {
            for (int j = 0; j < 2; j++) {
                for (int k = 0; k < 2; k++) {
                    result[i][j] += mat1[i][k] * mat2[k][j];
                }
            }
        }
        System.out.println("Mat Sum = ");
        for (int i = 0; i < 2; i++) {
            for (int j = 0; j < 2; j++) {
                System.out.print(result[i][j] + " ");
            }
            System.out.println();
        }
    }
}
```

OUTPUT:

Sample Input:

Mat1 = 1 2

5 3

Mat2 = 2 3

4 1

Sample Output:

Mat Sum = 10 5

22 18

15. Write a program to print the following pattern?

A.

```
public class PrintPattern {
    public static void main(String[] args) {
        int rows = 5;

        for (int i = 1; i <= rows; i++) {
            for (int j = 1; j <= i; j++) {
                System.out.print(j + " ");
            }
            System.out.println();
        }
    }
}
```

OUTPUT:

Sample Input:

Enter the number to be printed: 1

Max Number of time printed: 3

1

11

111

11

1

16. Write a program to print the special characters separately and print number of Special characters in the line?

A.

```
import java.util.Scanner;
public class SpecialCharactersCounter {
    public static void main(String[] args) {
        Scanner scanner = new Scanner(System.in);
        System.out.println("Enter a string: ");
        String input = scanner.nextLine();
```

```
        int specialCharCount = 0;
        for (int i = 0; i < input.length(); i++) {
            char ch = input.charAt(i);
            if (!(Character.isLetterOrDigit(ch) || Character.isWhitespace(ch))) {
                System.out.println("Special Character: " + ch);
                specialCharCount++;
            }
        }
        System.out.println("Number of Special Characters: " + specialCharCount);
    }
}
```

OUTPUT:

Sample Input: Enter a string:

ESRTY234&^%$

Sample Output:

Special Character: &

Special Character: ^

Special Character: %

Special Character: $

Number of Special Characters: 4

17. Write a program to print all the composite numbers between a and b?

A.

```
public class CompositeNumbersPrinter {
    public static void main(String[] args) {
        int a = 10;
        int b = 50;
        System.out.println("Composite numbers between " + a + " and " + b + " are:");
        for (int i = a; i <= b; i++) {
            if (isComposite(i)) {
                System.out.print(i + " ");
```

```
            }
        }
    }
    public static boolean isComposite(int num) {
        if (num < 2) {
            return false;
        }
        for (int i = 2; i <= num / 2; i++) {
            if (num % i == 0) {
                return true;
            }
        }
        return false;
    }
}
```

OUTPUT:

Sample Input:

A = 12

B = 19

Sample Output

14, 15, 16, 18

18. Write a program to print the Inverted Full Pyramid pattern?

A.

```
public class InvertedFullPyramid {
    public static void main(String[] args) {
        int rows = 5;
        for (int i = rows; i >= 1; --i) {
            for (int space = 0; space < rows - i; ++space) {
                System.out.print("  ");
            }
```

```
            for (int j = i; j <= 2 * i - 1; ++j) {
                System.out.print("* ");
            }
            for (int j = 0; j < i - 1; ++j) {
                System.out.print("* ");
            }
            System.out.println();
        }
    }
}
```

OUTPUT:

```
* * * * * * * * *
 * * * * * * *
  * * * * *
   * * *
    *
```

19. Find the Mean, Median, Mode of the array of numbers?

A.

```
import java.util.Arrays;
import java.util.HashMap;
import java.util.Map;
import java.util.stream.IntStream;
public class ArrayStatistics {
    public static void main(String[] args) {
        int[] numbers = {1, 2, 3, 4, 5, 5, 6, 6, 6, 7, 8, 9};
        double mean = IntStream.of(numbers).average().orElse(Double.NaN);
        Arrays.sort(numbers);
        double median;
        if (numbers.length % 2 == 0) {
            median = (numbers[numbers.length / 2 - 1] + numbers[numbers.length / 2]) / 2.0;
```

```
        } else {
            median = numbers[numbers.length / 2];
        }
        Map<Integer, Integer> frequencyMap = new HashMap<>();
        for (int num : numbers) {
            frequencyMap.put(num, frequencyMap.getOrDefault(num, 0) + 1);
        }
        int maxFrequency = frequencyMap.values().stream().mapToInt(v -> v).max().orElse(0);
        int mode = frequencyMap.entrySet().stream()
                .filter(entry -> entry.getValue() == maxFrequency)
                .map(Map.Entry::getKey)
                .findFirst()
                .orElse(0);
        System.out.println("Mean: " + mean);
        System.out.println("Median: " + median);
        System.out.println("Mode: " + mode);
    }
}
```

OUTPUT:

Sample Input;:

Array of elements = {16, 18, 27, 16, 23, 21, 19}

Sample Output:

Mean = 20

Median = 19

Mode = 16

20. Find the factorial of n?

A.

```
Scanner input=new Scanner(System.in);
int n=input.nextInt();
int fact=1;
```

```
for(int i=1;i<=n;i++)
{
fact=fact*i;
}
System.out.print(fact);
```

OUTPUT:

Sample Input:

N = 4

Sample Output:

4 Factorial = 24

Test cases:

1. N = 0
2. N = -5
3. N = 1
4. N = Q
5. N = 3A

21. Write a program to print the following pattern?

A.

```
Scanner input=new Scanner(System.in);
char c=input.next().charAt(0);
int n=input.nextInt();
for(int i=1;i<=n;i++)
{
for(int j=1;j<=i;j++)
{
System.out.print(c);
}
System.out.println();
}
```

OUTPUT:

Sample Input:

Enter the Character to be printed: %

Max Number of time printed: 3

%

% %

% % %

22. Find the year of the given date is leap year or not.?

A.

```
import java.util.Scanner;
public class ak
{
public static void main(String[] args)
{
Scanner input=new Scanner(System.in);
System.out.print("Enter year: ");
String year=input.next();
String a[]=year.split("/");
String d=a[2];
int num=Integer.parseInt(d);
if((num%4==0 && num%100!=0)|| num%400==0)
System.out.println("It is a leap year");
else
System.out.println("Not a leap year");
}
}
```

OUTPUT:

Sample Input:

Enter Date: 04/11/1947

Sample Output:

Given year is Non Leap Year.

23. Find the number of factors for the given number?

A.

```
Scanner input=new Scanner(System.in);
int n=input.nextInt();
int factors=0;
for(int i=1;i<=n;i++)
{
if(n%i==0)
```

```
factors=factors+1;
}
System.out.print("Number of factors = "+factors);
1. Scanner input=new Scanner(System.in);
int n=input.nextInt();
```

OUTPUT:

Sample Input:

Given number: 100

Sample Output:

Number of factors = 9

24. Write a program to print the given number is Perfect number or not?

A.

```
Scanner input=new Scanner(System.in);
int n=input.nextInt();
int factors=0;
for(int i=1;i<n;i++)
{
if(n%i==0)
factors=factors+i;
}
if(n==factors)
System.out.print("It's a perfect number");
```

OUTPUT:

Sample Input:

Given Number: 6

Sample Output:

It’s a Perfect Number

25. Write a program to print the number of vowels in the given statement?

A.

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

```
String name=input.nextLine();
int len=name.length();
char a[]=new char[len];
int vow=0;
for(int i=0;i<len;i++)
{
a[i]=name.charAt(i);
if(a[i]=='a'||a[i]=='e'||a[i]=='i'||a[i]=='o'||a[i]=='u'
||a[i]=='A'||a[i]=='E'||a[i]=='I'||a[i]=='O'||a[i]=='U')
vow=vow+1;
}
System.out.println(vow);
```

OUTPUT:

Sample Input:

Saveetha School of Engineering

Sample Output:

Number o vowels = 12

26. Write a program to print consonants and vowels separately in the given Word.

A.

```
String name=input.nextLine();
int len=name.length();
char a[]=new char[len];
char vow[]=new char[len];
char con[]=new char[len];
int v=0,c=0;
for(int i=0;i<len;i++)
{
a[i]=name.charAt(i);
if(a[i]=='a'||a[i]=='e'||a[i]=='i'||a[i]=='o'||a[i]=='u'
```

```
||a[i]=='A'||a[i]=='E'||a[i]=='I'||a[i]=='O'||a[i]=='U') {
vow[v] = a[i];
v++;
}
else {
con[c] = a[i];
c++;
}
}
System.out.print("Consonants: ");
for(int i=0;i<v;i++)
{
System.out.print(vow[i]);
}
System.out.print("\nvowels: ");
for(int j=0;j<c;j++)
{
System.out.print(con[j]);
}
```

OUTPUT:

Sample Input:

Given Word: Engineering

Sample Output:

Consonants: n g n r n g

Vowels: e i e ei

27. Write a program to print the Fibonacci series.

A.

```
Scanner input=new Scanner(System.in);
int n=input.nextInt();
int a1=0,a2=1;
for(int i=0;i<n;i++)
```

```
{
System.out.print(a1+" ");
int a3=a1+a2;
a1=a2;
a2=a3;
}
```

OUTPUT:

Sample Input:

Enter the n value: 6

Sample Output:

0 1 1 2 3 5

Test Condition: Implement negative Fibonacci series

28.Write a program to print the below pattern?

A.

```
Scanner input=new Scanner(System.in);
int n=input.nextInt();
for(int i=1;i<=n;i++)
{
for(int j=1;j<=i;j++)
{
System.out.print(i);
}
System.out.println();
}
```

OUTPUT:

1

2 2

3 3 3

4 4 4 4

29. Write a program to find the square, cube of the given decimal number?

A.

```
Scanner input=new Scanner(System.in);
float n=input.nextFloat();
System.out.print("square: "+(n*n));
System.out.print("cube: "+(n*n*n));
```

OUTPUT:

Sample Input:

Given Number: 0.6

Sample Output:

Square Number: 0.36

Cube Number:0.216

30. Program to find the frequency of each element in the array.

A.

```
import java.util.Arrays;
import java.util.Scanner;
public class ak {
public static void main(String[] args)
{
Scanner input=new Scanner(System.in);
int a[]=new int[] {1,2,8,3,2,2,2,5,1};
int t[]=new int[a.length];
int visited=-1;
for(int i=0;i<a.length;i++)
{
int count=1;
for(int j=i+1;j<a.length;j++)
{
if(a[i]==a[j])
{
count++;
t[j]=visited;

}
}
if(t[i]!=visited)
t[i]=count;
}
for(int i=0;i<a.length;i++)
{
if(t[i]!=visited)
System.out.println(a[i]+" "+t[i]);
}
}
```

}

OUTPUT:

Sample Input & Output:

{1, 2, 8, 3, 2, 2, 2, 5, 1}

Element | Frequency

---

1 | 2

2 | 4

8 | 1

3 | 1

5 | 1

31. Write a program to print the given number is Perfect number or not?

A.

```
Scanner input=new Scanner(System.in);
int n=input.nextInt();
int factors=0;

for(int i=1;i<n;i++)
{
if(n%i==0)
factors=factors+i;
}
if(n==factors)
System.out.print("It's a perfect number");
```

OUTPUT:

Sample Input:

Given Number: 6

Sample Output:

It’s a Perfect Number

32. Find the factorial of n?

A. Scanner input=new Scanner(System.in);

int n=input.nextInt();

int fact=1;

for(int i=1;i<=n;i++)

{

fact=fact*i;

}

System.out.print(n+" factorial = "+fact);

OUTPUT:

Sample Input:

N = 6

Sample Output:

6 Factorial = 720

33. Write a program to print the below pattern

A.int n=input.nextInt();

int k=1;

for(int i=1;i<=n;i++)

{

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

{

System.out.print(k*k+" ");

k++;

}

System.out.println();

}

OUTPUT:

1

4 9

16 25 36

49 64 81 100

34. Write a program to find the number of composite numbers in an array of elements.

A.

```
Scanner input=new Scanner(System.in);
int arr[]={16,18,27,16,23,21,19};
int len=arr.length;
int count=0;
for(int i=0;i<len;i++)
{
int c=0;
for(int j=1;j<100;j++)
{
if(arr[i]%j==0)
{
c++;
}
}
if(c>2)
count++;
}
System.out.println(count);
```

OUTPUT:

Sample Input;:

Array of elements = {16, 18, 27, 16, 23, 21, 19}

Sample Output:

Number of Composite Numbers = 5

35. Find the nth odd number after n odd number.

A.

```
Scanner input=new Scanner(System.in);
int n=input.nextInt();
int arr[]=new int[100];
int j=1;
for(int i=1;i<100;i++)
```

```
{
if(i%2!=0) {
arr[j] = i;
j++;
}
}
System.out.print(arr[n*2]);
```

OUTPUT:

Sample Input:

N : 4

Sample Output:

4

th Odd number after 4 odd numbers = 15

36. Write a program that finds whether a given character is present in a string or not. In case it is present it prints the index at which it is present. Do not use built-in find functions to search the character.

A.

```
Scanner input=new Scanner(System.in);
String str=input.nextLine();
char c=input.next().charAt(0);
char arr[]=new char[str.length()];
int len=str.length();
int x=0;
for(int i=0;i<len;i++)
{
arr[i]=str.charAt(i);
if(arr[i]==c)
{
System.out.println(c+" is found in string at index: "+(i+1));
x=1;
```

```
}
}
if(x==0)
System.out.print("character not found");
```

OUTPUT:

Sample Input:

Enter the string: I am a programmer

Enter the character to be searched: p

Sample Output:

P is found in string at index: 8

37.Write a program to print the below pattern?

A.

```
Scanner input=new Scanner(System.in);
int n=input.nextInt();
for(int i=1;i<=n;i++)
{
for(int j=1;j<=i;j++)
{
System.out.print(i);
}
System.out.println();
}
for(int i=n-1;i>=1;i--)
{
for(int j=1;j<=i;j++)
```

OUTPUT:

```
1
2 2
3 3 3
4 4 4 4
3 3 3
2 2
1
```

38. Program to find whether the given number is Armstrong number or not?

A.

```
Scanner input=new Scanner(System.in);
int n=input.nextInt();
int num1=n;
int arm=0;
while(num1!=0)
{
int rem=num1%10;
arm=arm+(rem*rem*rem);
num1=num1/10;
}
if(n==arm)
System.out.print("Armstrong number");
else
System.out.print("Not Armstrong");
```

OUTPUT:

Sample Input:

Enter number : 153

Sample Output:

Given number is Armstrong number

39. Write a program to arrange the letters of the word alphabetically in reverse Order.

A.

```
import java.util.Scanner;
import java.util.Arrays;
public class ak
{
public static void main(String args[])
{
Scanner input=new Scanner(System.in);
```

```
String name=input.nextLine();
int len=name.length();
char arr[]=new char[len];
String Alpha;
for(int i=0;i<len;i++)
{
arr[i]=name.charAt(i);
}
Arrays.sort(arr);
for(int i=len-1;i>=0;i--)
{
System.out.print(arr[i]+" ");
}
}
}
```

OUTPUT:

Sample Input:

Enter the word : MOSQUE

Sample Output:

Alphabetical Order: U S Q O M E

40. Write a program that accepts a string from user and displays the same string after removing vowels from it.

A.

```
Scanner input=new Scanner(System.in);
String name=input.nextLine();
String n1=name.replaceAll("[aeiouAEIOU]","");
System.out.println(n1);
```

OUTPUT:

Sample Input & Output:

Enter a string: we can play the game

The string without vowels is: we can play them.

41. Write a program to print hollow SquareDollar pattern?

A.
```
public class HollowSquareDollarPattern {
    public static void main(String[] args) {
        int rows = 5;

        for (int i = 1; i <= rows; i++) {
            for (int j = 1; j <= rows; j++) {
                if (i == 1 || i == rows || j == 1 || j == rows) {
                    System.out.print("$ ");
                } else {
                    System.out.print("  ");
                }
            }
            System.out.println();
        }
    }
}
```

OUTPUT:

```
$ $ $ $ $
$       $
$       $
$       $
$ $ $ $ $
```

42. Write a program to find the sum of digits of N digit number (sum should be single digit).

A.

```
Scanner input=new Scanner(System.in);
int n=input.nextInt();
int sum=0;
```

```
while(n!=0)


{
int rem=n%10;
sum=sum+rem;
n=n/10;
}
System.out.println(sum);
```

OUTPUT:

Sample Input:

Enter N value : 3

Enter 3 digit number: 143

Sample Output:

Sum of 3 digit number: 8

43. Write a program to find the square root of a perfect square number(print both the positive and negative values).

A.

```
public class Main {
   public static void main(String[] args) {
      int number = 25;
      double squareRoot = Math.sqrt(number);
      System.out.println("Square root of " + number + " is: " + squareRoot);
      System.out.println("Negative square root of " + number + " is: " + (-squareRoot));
   }
}8
```

OUTPUT:

Sample Input:

Enter the number : 6561

Sample Output:+-81

44. Write a program for matrix multiplication?

A.

```
Scanner input=new Scanner(System.in);
int r=input.nextInt();
int c=input.nextInt();
int mat1[][]=new int[r][c];

int mat2[][]=new int[r][c];
for(int i=0;i<r;i++)
{
for(int j=0;j<c;j++)
{
mat1[i][j]=input.nextInt();
}
}
for(int i=0;i<r;i++)
{
for(int j=0;j<c;j++)
{
mat2[i][j]=input.nextInt();
}
}
int sum[][]=new int[r][c];
for(int i=0;i<r;i++)
{
for(int j=0;j<c;j++)
{
sum[i][j]=0;
for(int k=0;k<c;k++)
{
sum[i][j] = sum[i][j] +(mat1[i][k]*mat2[k][j]);
}
```

```
System.out.print(sum[i][j] + "\t");
}
System.out.println();
}
```

OUTPUT:

Sample Input:

Mat1 = 1 2

5 3

Mat2 = 2 3

4 1

Sample Output:

Mat Sum = 10 5

22 18

45. Write a program to print inverted pyramid pattern.?

A.

```
public class InvertedPyramidPattern {
    public static void main(String[] args) {
        int rows = 5;

        for (int i = rows; i >= 1; --i) {
            for (int j = 1; j <= rows - i; ++j) {
                System.out.print("  ");
            }

            for (int k = i; k <= 2 * i - 1; ++k) {
                System.out.print("* ");
            }

            for (int k = 0; k < i - 1; ++k) {
                System.out.print("* ");
            }

            System.out.println();
        }
    }
}
```

OUTPUT:

```
* * * * * * * * *
  * * * * * * *
    * * * * *
      * * *
        *
```