

Assignment - 3

JAVA

Sree Roshan Nair

191911415

1. Write a java program to get inputs for multiplying two matrices and display the result.

```
Ans import java.util.Scanner;

public class Matrix Multiplication {
    public static void main (String [] args) {
        Scanner scanner = new Scanner (System.in);

        System.out.print ("Enter the number of rows of M1");
        int rows1 = scanner.nextInt();

        System.out.print ("Enter the number of columns of M1 ");
        int cols1 = scanner.nextInt();

        System.out.print ("Enter the number of rows in M2 ");
        int rows2 = scanner.nextInt();

        System.out.print ("Enter the number of columns in M2");
        int cols2 = scanner.nextInt();

        if (cols1 != rows2) {
            System.out.println ("Matrix multiplication is not possible.")
        }
        else {
            int[][] matrix1 = new int [rows1] [cols1]
            int[][] matrix2 = new int [rows2] [cols2];
            int [][] result matrix = new int [rows1] [cols2];
        }
    }
}
```

```
System.out.println("Enter the elements for the first matrix:");
```

```
for (int i=0; i<rows1; i++){
```

```
    for (int j=0; j<cols1; j++){ matrix1[i][j] = scanner.nextInt();
```

```
    }
```

```
System.out.println("Enter the elements for the second matrix:");
```

```
for (int i=0; i<rows2; i++){ for (int j=0; j<cols2; j++){
```

```
    matrix2[i][j] = scanner.nextInt();
```

```
    }
```

```
for (int i=0; i<rows1; i++){
```

```
    for (int j=0; j<cols2; j++){
```

```
        for (int k=0; k<cols1; k++){
```

```
            resultMatrix[i][j] += matrix1[i][k] * 
```

```
matrix2[k][j];
```

```
        }
```

```
System.out.println("Result Matrix after multiplication:");
```

```
for (int i=0; i<rows1; i++){
```

```
    for (int j=0; j<cols2; j++){
```

```
        System.out.print(resultMatrix[i][j] + " ");
```

```
    }
```

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

```
}
```

```
scanner.close();
```

```
}
```

2. Find factorial of numbers with integer Square root from 1 to 35
example no. 169.

```
Ans import java.io.*;
public class fact {
    public static void main (String [] args) {
        int n=1;
        for (int i = 1; (i*i) < 356; i++)
        {
            System.out.println (i*i);
            int fact = 1;
            for (int j = 1; j <= i; j++) {
                fact = fact * j;
            }
            System.out.println(fact);
        }
    }
}
```

3. Reverse a string and find if it is a palindrome

Ans import java.util.Scanner;

public class a1 {

public static void main (String [] args) {

Scanner scanner = new Scanner (System.in);

System.out.print (" Enter a strn:");

String input = scanner.nextLine();

if (isPalindrome (input)) {

System.out.println ("The String is a palindrome.")

} else

System.out.println ("The String is not a palindrome")

}

scanner.close();

}

public static boolean isPalindrome (String str) {

str = str.replaceAll("\\s+", "").toLowerCase();

String str2 = "";

for (int i = str.length() - 1; i >= 0; i--) {

str2 = str2 + str.charAt(i)

}

System.out.println(str2)

if (str2 == str) {return true;

}

else {

return false;

}