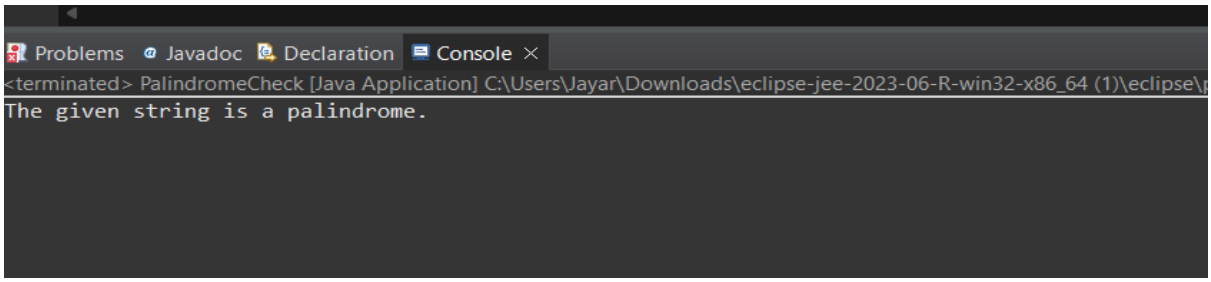
JAVA PROGRAMMING QUESTION

1. Write a program to check whether a given string is a palindrome or not using for loop and if-else statement.

```
package project1;

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

              String input ="madam";

               String reversed = new StringBuilder(input).reverse().toString();

            if (input.equals(reversed)) {
               System.out.println("The given string is a palindrome.");
            } else {
               System.out.println("The given string is not a palindrome.");
            }

}
}
```

OUTPUT:

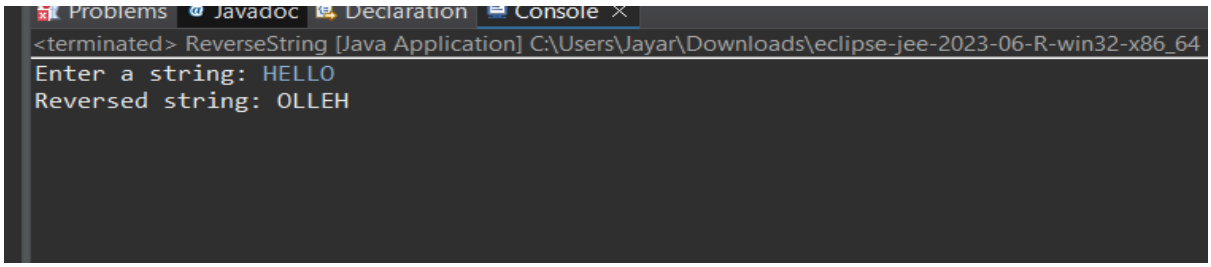


2. Write a program that reads in a string from the user and uses a loop to reverse the order of the characters in the string. Then, output the reversed string.

```
package project1;

import java.util.Scanner;

public class ReverseString {

      public static void main(String[] args)

{

      Scanner scanner = new Scanner(System.in);

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

      String input = scanner.nextLine();

      String reversed = "";
```

```
            for (int i = input.length() - 1; i >= 0; i--)
            {
               reversed += input.charAt(i);
            }
            System.out.println("Reversed string: " + reversed);
         }
      }
```

OUTPUT:



3. Write a program to print the given below pattern.

Sample Input:

4

Sample Output:

1

2 3

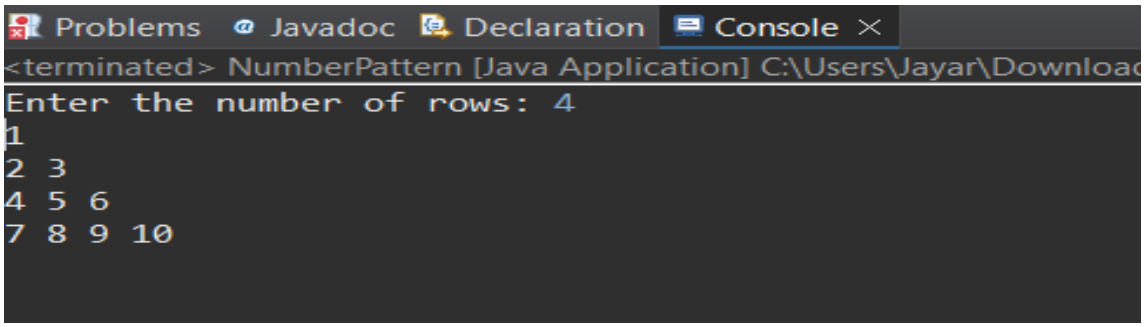
4 5 6

7 8 9 10

```
package project1;
import java.util.Scanner;
public class NumberPattern {
        public static void main(String[] args) {
            Scanner scanner = new Scanner(System.in);
            System.out.print("Enter the number of rows: ");
            int rows = scanner.nextInt();
            int number = 1;
            for (int i = 1; i <= rows; i++) {
               for (int j = 1; j <= i; j++) {
                  System.out.print(number +" ");
```

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

OUTPUT:



4.Write a program to print the given below pattern.

Sample Input:

5

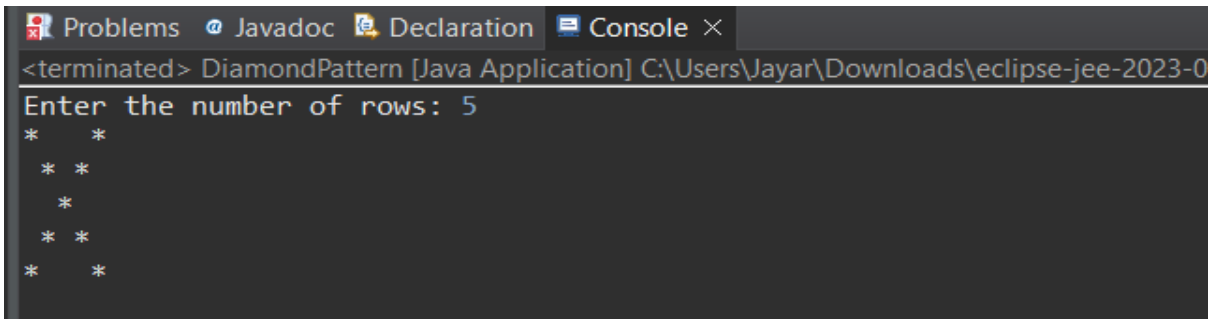
Sample Output:

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

```
package project1;
import java.util.Scanner;
public class DiamondPattern {
        public static void main(String[] args) {
            Scanner scanner = new Scanner(System.in);
            System.out.print("Enter the number of rows: ");
            int rows = scanner.nextInt();
            for (int i = 0; i < rows / 2; i++) {
                for (int j = 0; j < i; j++) {
                    System.out.print(" ");
                }
                System.out.print("*");
```

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

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

OUTPUT:



5. Anna University Grading System

The newly appointed Vice-Chancellor of Anna University wanted to create an automated grading system for the students to check their grade. When a student enters a mark, the grading system displays the corresponding grade. Write a program to solve the given problem. The grades for marks 100-S, 90-99 is A. 50-89 is B. 70-79 is C, 60-69 is D. 50-59 is E and less than 50 is F.

Input format:

The input consists of one integer which corresponds to the marks scored by the Student.

Output format:

If a student marks greater than 100, print "Invalid Input". Otherwise, print the grade.

Sample Input:

78

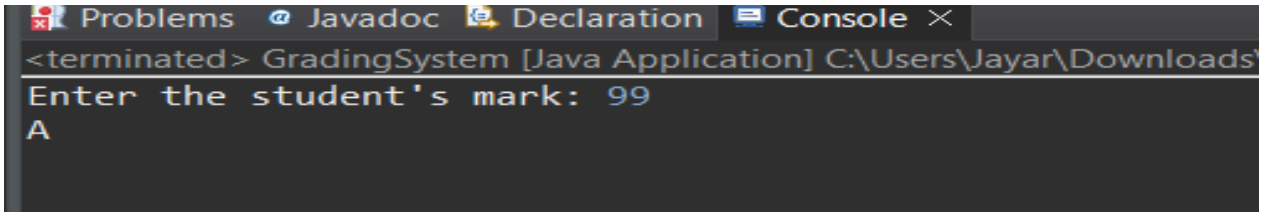
Sample output:

C

```
package project1;
import java.util.Scanner;
public class GradingSystem {
    public static void main(String[] args) {
        Scanner scanner = new Scanner(System.in);
        System.out.print("Enter the student's mark: ");
        int mark = scanner.nextInt();
        String grade;
        if (mark > 100) {
            grade = "Invalid Input";
        } else if (mark == 100) {
            grade = "S";
        } else if (mark >= 90) {
            grade = "A";
        } else if (mark >= 80) {
            grade = "B";
        } else if (mark >= 70) {
            grade = "C";
        } else if (mark >= 60) {
            grade = "D";
        } else if (mark >= 50) {
            grade = "E";
        } else {
            grade = "F";
        }
        System.out.println(grade);
```

```
    }
}
```

OUTPUT:



6. Write a program to calculate the hotel tariff. The room rent is 20% high during peak seasons [April-June, November-December]. Note: Use the switch construct.

Input format:

The first input containing an integer which denotes the number of the month

The second input containing the floating point number which denotes the room rent per day

The third input containing an integer which denotes the number of days stayed in the hotel

Output format:

Print the hotel tariff to be paid in floating point with 2 decimal places

Refer the sample output for formatting

Sample Input:

3

1500

2

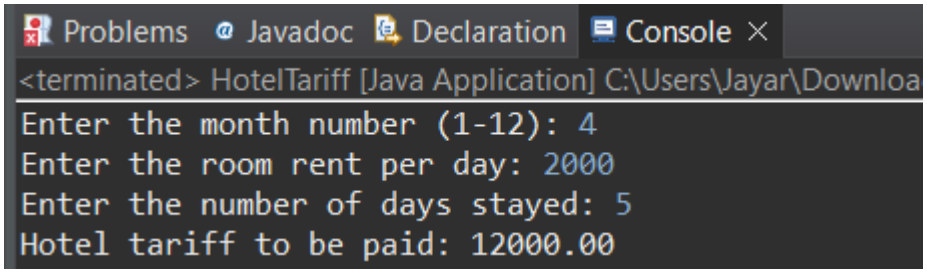
Sample Output:

3000.00

```
package project1;
import java.util.Scanner;
public class HotelTariff {
        public static void main(String[] args) {
            Scanner scanner = new Scanner(System.in);
            System.out.print("Enter the month number (1-12): ");
            int month = scanner.nextInt();
            System.out.print("Enter the room rent per day: ");
            double roomRentPerDay = scanner.nextDouble();
            System.out.print("Enter the number of days stayed: ");
            int daysStayed = scanner.nextInt();
```

```
            boolean isPeakSeason = false;
            switch (month) {
                case 4: case 5: case 6: case 11: case 12:
                    isPeakSeason = true;
                    break;
                default:
                    isPeakSeason = false;
                    break;
            }
            if (isPeakSeason) {
                roomRentPerDay *= 1.20;
            double totalTariff = roomRentPerDay * daysStayed;
            System.out.printf("Hotel tariff to be paid: %.2f%n", totalTariff);
        }
    }
}
```

OUTPUT:



7.Write a program to calculate the largest number among three members.

```
package project1;
import java.util.Scanner;
public class LargestNumber {
        public static void main(String[] args) {
            Scanner scanner = new Scanner(System.in);
            System.out.print("Enter the first number: ");
            int num1 = scanner.nextInt();
            System.out.print("Enter the second number: ");
            int num2 = scanner.nextInt();
```

```
        System.out.print("Enter the third number: ");
        int num3 = scanner.nextInt();
        int largest = num1;
        if (num2 > largest) {
            largest = num2;
        }
        if (num3 > largest) {
            largest = num3;
        }
        System.out.println("The largest number is: " + largest);
    }
}
```

OUTPUT: