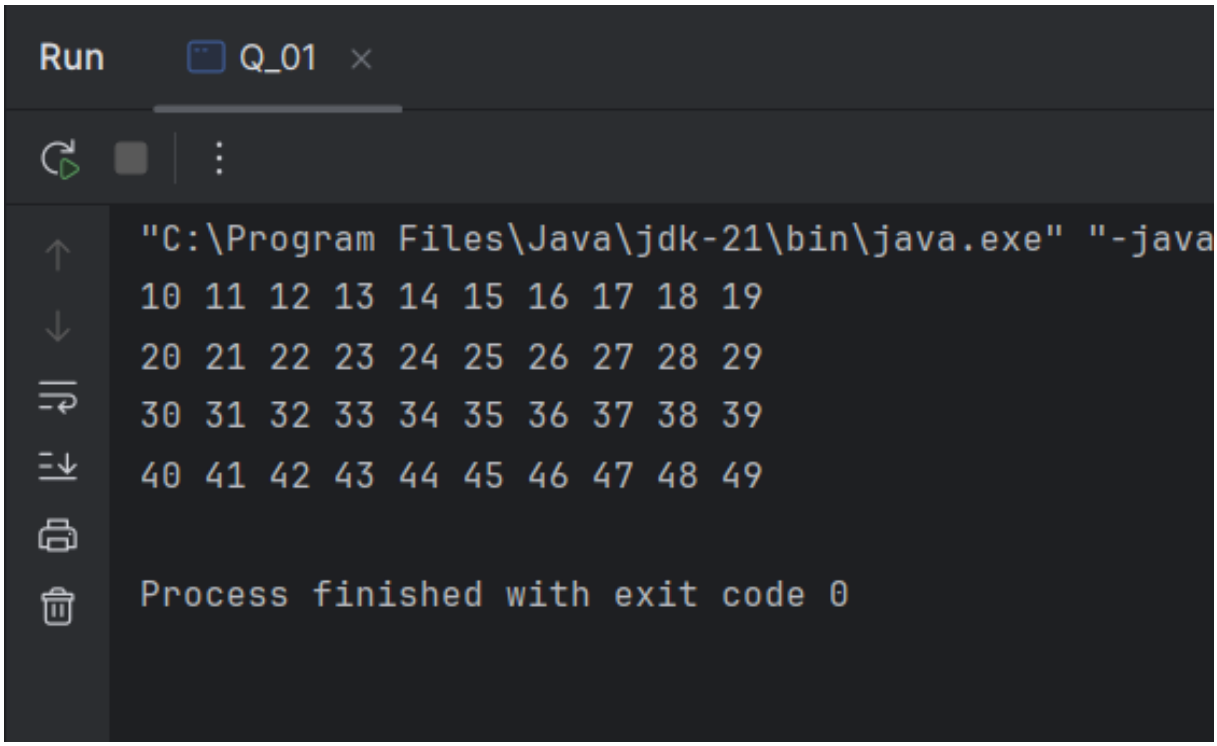
Lab worksheet 5: Repetition Statements

Q1.

Code:

```
 package Q_01;

public class Q_01 {
    public static void main(String[] args) {
        for (int i = 10; i <= 49; i++) {
            System.out.print(i + " ");
            if (i % 10 == 9) {  // After printing go to new
line
                System.out.println();
            }
        }
    }
}
```

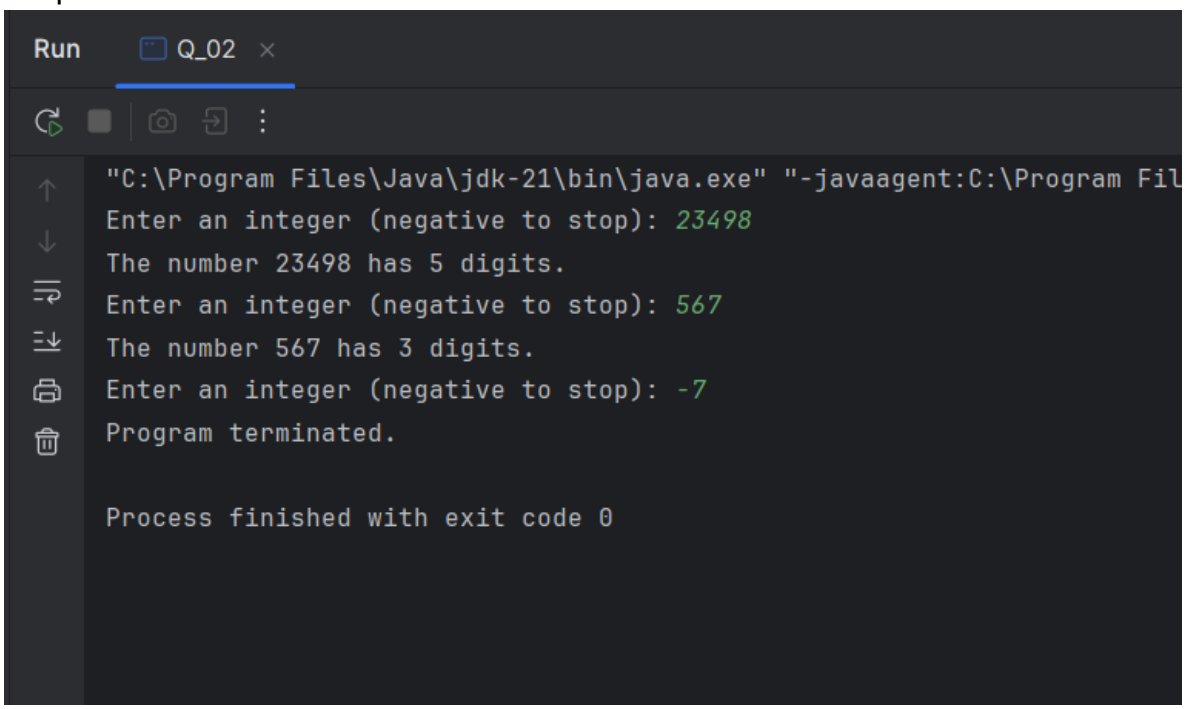
Output:



Q2.
Code:

```
package Q_02;

import java.util.Scanner;

public class Q_02 {
            public static int noOfDigits(int number) {
                if (number == 0) {
                    return 1;
                }
                number = Math.abs(number);
                int count = 0;

                while (number > 0) {
                    number = number /10; // Remove the last
digit
                    count++; // Increment the digit count
                }

                return count;
            }

            public static void main(String[] args) {
                Scanner scanner = new Scanner(System.in);;
                int input;
                do {
                    System.out.print("Enter an integer
(negative to stop): ");
                    input = scanner.nextInt();

                    if (input >= 0) {
                        int digitCount = noOfDigits(input);
                        System.out.println("The number " +
input +" has "+ digitCount +" digits.");
                    }

                } while (input >= 0);

                System.out.println("Program terminated.");
                scanner.close();
            }
}
```

Output:

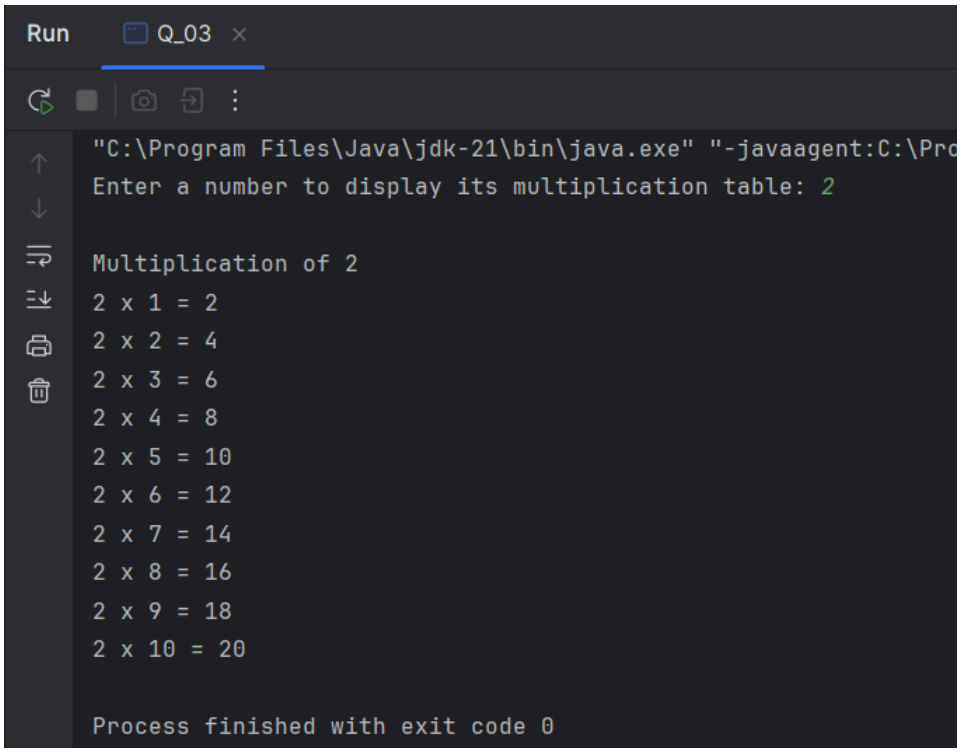


Q3.

Code:

```
 package Q_03;

import java.util.Scanner;

public class Q_03 {
    public static void main(String[] args) {
                Scanner scanner = new Scanner(System.in);

                System.out.print("Enter a number to display
its multiplication table: ");
                int N = scanner.nextInt();
                System.out.println("\nMultiplication of "+
N);

                for (int i = 1; i <= 10; i++) {
                    System.out.println(N + " x " + i + " = "
+ (N * i));
                }
                scanner.close();
    }
}
```

Output:

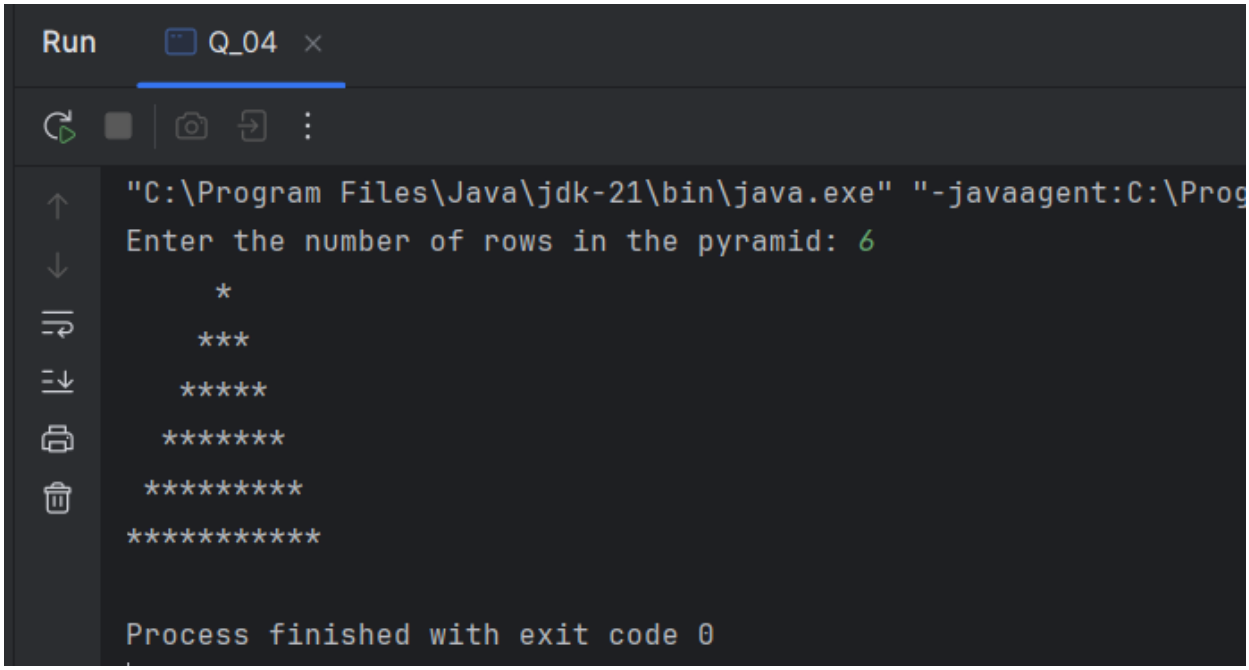


Q4.
Code:

```
package Q_04;

import java.util.Scanner;

public class Q_04 {
    public static void main(String[] args) {
        Scanner scanner = new Scanner(System.in);

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

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

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

        scanner.close();
    }
}
```

Output:

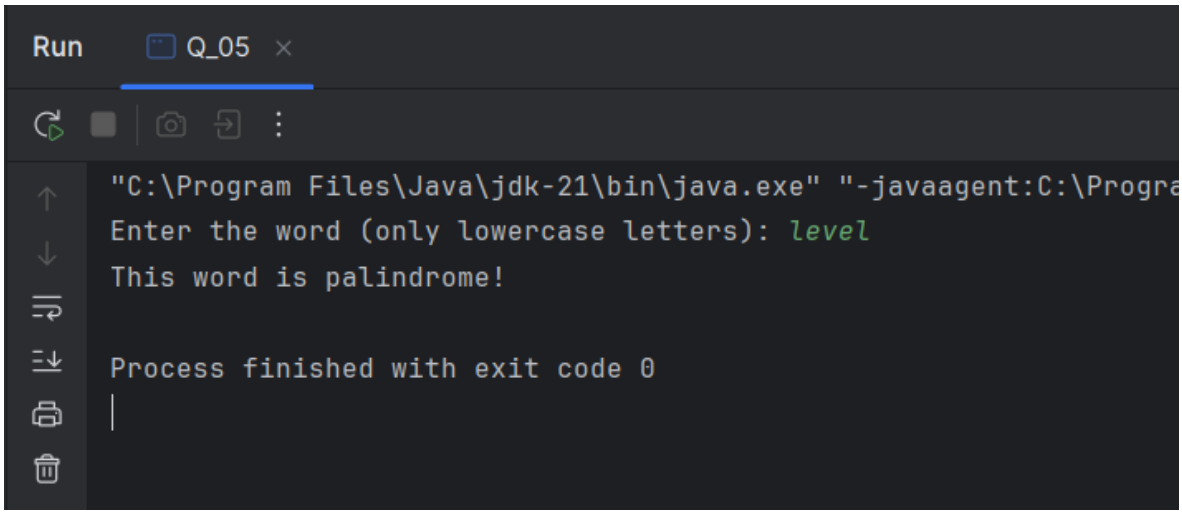


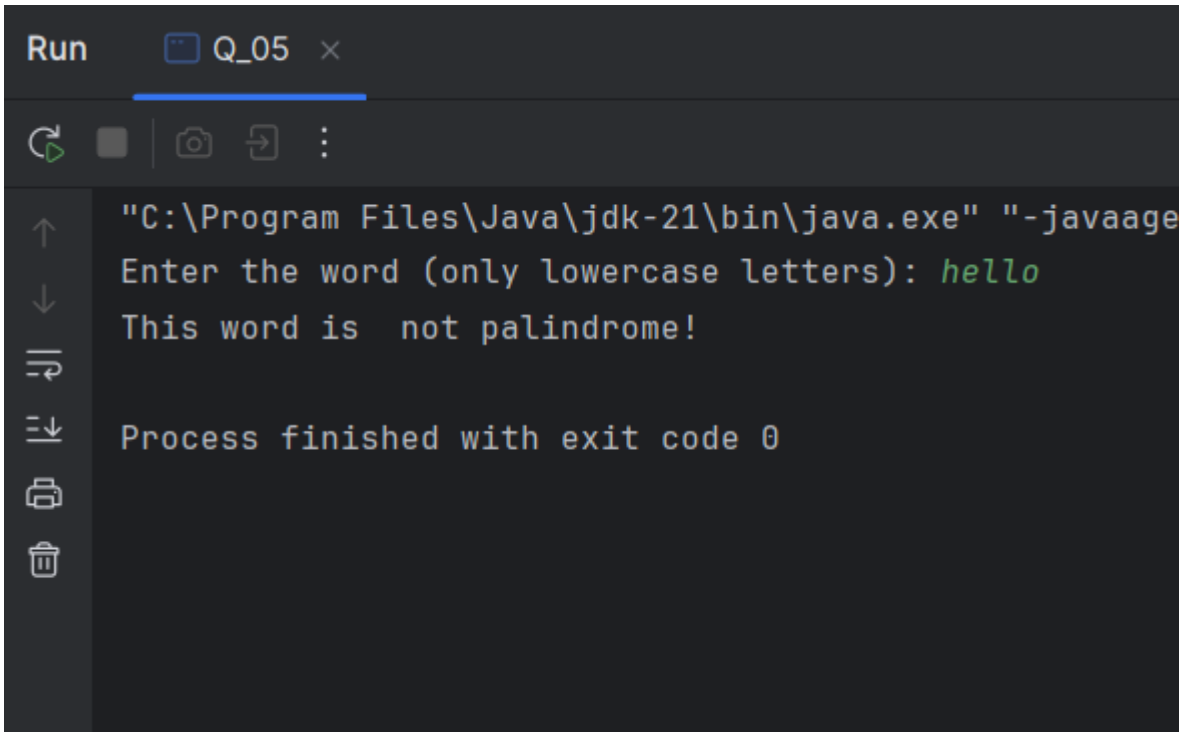
Q5.

Code:

```
 package Q_05;

import java.util.Scanner;

public class Q_05 {

    public static boolean isPalindrome(String word) {
        String reverseWord= "";
        for(int i = word.length() - 1; i >=0; i--) {
            reverseWord = reverseWord + word.charAt(i);
        }
        return word.equals(reverseWord);
    }


    public static void main(String[] args) {
        Scanner scanner = new Scanner(System.in);
        System.out.print("Enter the word (only lowercase
letters): ");

        String word = scanner.nextLine();

        if(isPalindrome(word)) {
            System.out.println("This word is palindrome! ");
        }
        else {
            System.out.println("This word is  not palindrome!
");

        }
        scanner.close();
    }

}
```

Output:


Run
Q_05
"C:\Program Files\Java\jdk-21\bin\java.exe" "-javaagent:C:\Progra
Enter the word (only lowercase letters): level
This word is palindrome!
Process finished with exit code 0

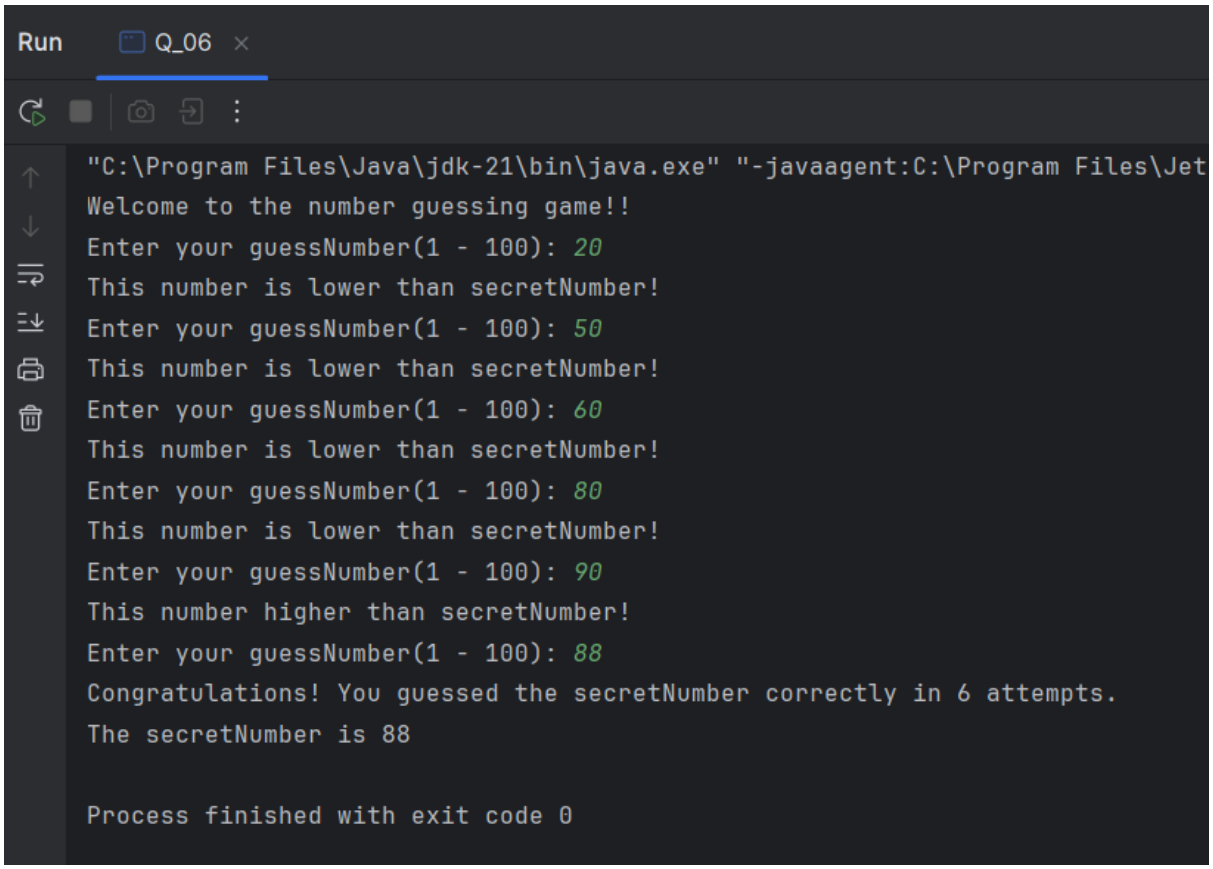

Run
Q_05
"C:\Program Files\Java\jdk-21\bin\java.exe" "-javaage
Enter the word (only lowercase letters): hello
This word is not palindrome!
Process finished with exit code 0

Q6.

Code:

```
package Q_06;

import java.util.Random;
import java.util.Scanner;

public class Q_06 {
    public static void main(String[] args) {
        Random random = new Random();
        Scanner scanner = new Scanner(System.in);

        int secretNumber = random.nextInt(100);
        int guessNumber;
        int attempts = 0;

        System.out.println("Welcome to the number guessing
game!!");

        do {
            System.out.print("Enter your guessNumber(1 -
100): ");
            guessNumber =scanner.nextInt();
            attempts++;

            if (guessNumber>secretNumber) {
                System.out.println("This number higher than
secretNumber! ");
            }
            else if(guessNumber< secretNumber){
                System.out.println("This number is lower than
secretNumber! ");
            }else {
                System.out.println("Congratulations! You
guessed the secretNumber correctly in "+ attempts +"
attempts.\nThe secretNumber is "+ secretNumber);
            }

        }while (guessNumber!=secretNumber);
        scanner.close();
    }
}
```

Output:



Q7.

Code:

```
 package Q_07;

import java.util.Scanner;

public class Q_07 {
    public static String replaceword(String sentence, String
wordToReplace,String replacementWord){
        //split the sentense into an array of words
        String[] words = sentence.split(" ");
        for (int i = 0; i < words.length; i++){
            if(words[i].equalsIgnoreCase(wordToReplace)){
                words[i]= replacementWord;
            }
        }
```

```
        return  String.join(" ",words);
    }

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

        System.out.println("Enter the sentence: ");
        String sentence = scanner.nextLine();

        System.out.println("Enter the replace word: ");
        String wordToReplace = scanner.nextLine();

        System.out.println("Enter the replacement word: ");
        String replacementWord = scanner.nextLine();

        String modifiedSentence = replaceword(sentence,
wordToReplace,replacementWord);
        System.out.println("Modified sentense:
\n"+modifiedSentence);

        scanner.close();
    }
}
```

Output: