

Worksheet 05

CTEC 22043 Object Oriented Programming

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Sri Lanka**

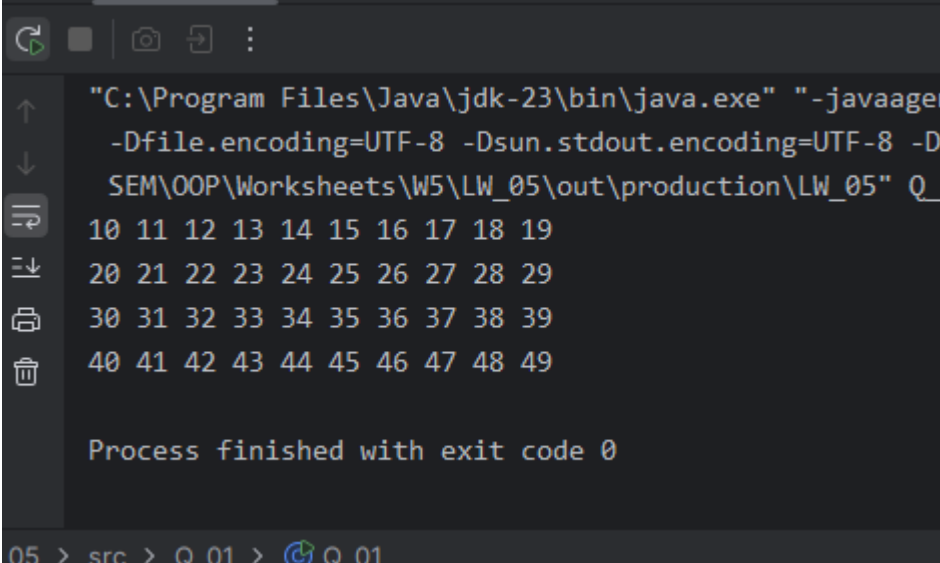
Q-01:

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+1) % 10 == 0)
                System.out.println();
        }
    }
}
```

Output:



```
"C:\Program Files\Java\jdk-23\bin\java.exe" "-javaagent
-Dfile.encoding=UTF-8 -Dsun.stdout.encoding=UTF-8 -D
SEM\OOP\Worksheets\W5\LW_05\out\production\LW_05" Q_
10 11 12 13 14 15 16 17 18 19
20 21 22 23 24 25 26 27 28 29
30 31 32 33 34 35 36 37 38 39
40 41 42 43 44 45 46 47 48 49

Process finished with exit code 0

05 > src > Q_01 > Q_01
```

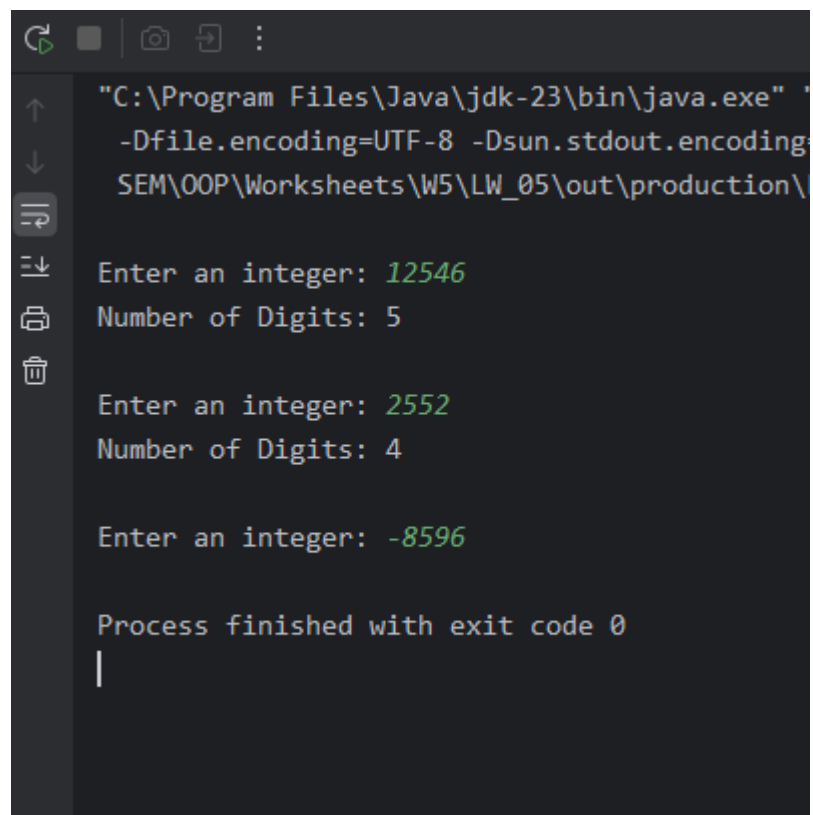
Q-02:**Code:**

```
package Q_02;

import java.util.Scanner;

public class Q_02 {
    public static int digitCount(int count) {
        return String.valueOf(Math.abs(count)).length();
    }

    public static void main(String[] args) {
        int num;
        Scanner scan = new Scanner(System.in);
        do{
            System.out.print("\nEnter an integer: ");
            num = scan.nextInt();
            if(num >= 0)
                System.out.println("Number of Digits: "+digitCount(num));
        } while(num >= 0);
    }
}
```

Output:A screenshot of a Java IDE terminal window. The window title bar shows standard OS icons. The command prompt shows the execution of 'java.exe' with various JVM options. The program prompts the user to 'Enter an integer:' and the user enters '12546'. The program outputs 'Number of Digits: 5'. The user enters '2552' and the program outputs 'Number of Digits: 4'. The user enters '-8596'. The program then outputs 'Process finished with exit code 0' and a cursor is visible on the next line.

```
"C:\Program Files\Java\jdk-23\bin\java.exe" '-Dfile.encoding=UTF-8 -Dsun.stdout.encoding=UTF-8 -Dsun.stderr.encoding=UTF-8 SEM\OOP\Worksheets\W5\LW_05\out\production\Q_02.class'

Enter an integer: 12546
Number of Digits: 5

Enter an integer: 2552
Number of Digits: 4

Enter an integer: -8596

Process finished with exit code 0
|
```

Q-03:

Code:

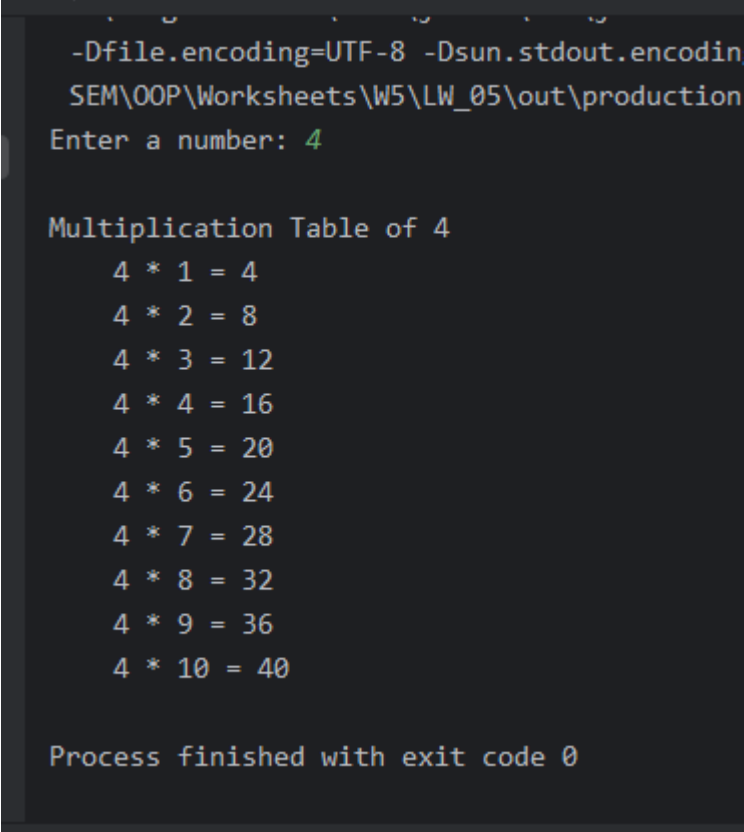
```
package Q_03;

import java.util.Scanner;

public class Q_03 {
    public static void main(String[] args) {
        int n;
        Scanner scan = new Scanner(System.in);
        System.out.print("Enter a number: ");
        n = scan.nextInt();

        System.out.println("\nMultiplication Table of "+n);
        for(int i=1; i < 11; i++){
            System.out.println("\t"+n+" * "+i+" = "+(n*i));
        }
    }
}
```

Output:



```
-Dfile.encoding=UTF-8 -Dsun.stdout.encoding=UTF-8
SEM\OOP\Worksheets\W5\LW_05\out\production
Enter a number: 4

Multiplication Table of 4
    4 * 1 = 4
    4 * 2 = 8
    4 * 3 = 12
    4 * 4 = 16
    4 * 5 = 20
    4 * 6 = 24
    4 * 7 = 28
    4 * 8 = 32
    4 * 9 = 36
    4 * 10 = 40

Process finished with exit code 0
```

Q-04:

Code:

```
package Q_04;

import java.util.Scanner;

public class Q_04 {
    public static void main(String[] args) {
        int row;
        Scanner scan = new Scanner(System.in);
        System.out.print("Enter the number of rows for the pattern: ");
        row = scan.nextInt();

        //loop through each row
        for(int i = 1; i <= row; i++){
            //printing the spaces on beginning of each line
            for(int j = i; j < row; j++){
                System.out.print(" ");
            }
            //printing the necessary amount of asterisks
            for(int k = 1; k <= (2*i-1); k++){
                System.out.print("*");
            }
            //move to next line after print each line
            System.out.println();
        }
    }
}
```

Output:

```
-Dfile.encoding=UTF-8 -Dsun.stdout.encoding=UTF-8
SEM\OOP\Worksheets\W5\LW_05\out\production\LW_05
Enter the number of rows for the pattern: 8

      *
     ***
    *****
   ********
  *********
 *****
*****
*****
*****

Process finished with exit code 0
```

Q-05:

Code:

```
package Q_05;

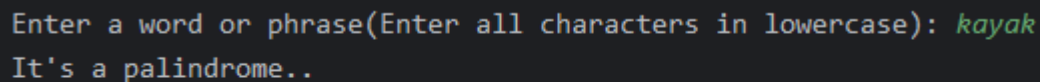
import java.util.Scanner;

public class Q_05 {
    public static void main(String[] args) {
        Scanner scanner = new Scanner(System.in);
        System.out.print("Enter a word or phrase(Enter all characters in lowercase): ");
        String input = scanner.nextLine();

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

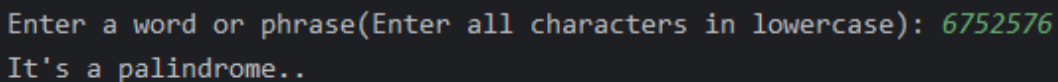
        if (input.equals(reversed)) {
            System.out.println("It's a palindrome..");
        } else {
            System.out.println("Not a palindrome..");
        }
        scanner.close();
    }
}
```

Output:



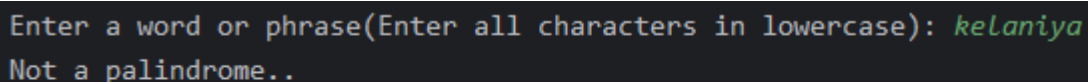
```
Enter a word or phrase(Enter all characters in lowercase): kayak
It's a palindrome..
```

```
Process finished with exit code 0
```



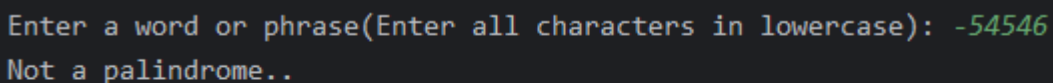
```
Enter a word or phrase(Enter all characters in lowercase): 6752576
It's a palindrome..
```

```
Process finished with exit code 0
```



```
Enter a word or phrase(Enter all characters in lowercase): kelaniya
Not a palindrome..
```

```
Process finished with exit code 0
```



```
Enter a word or phrase(Enter all characters in lowercase): -54546
Not a palindrome..
```

```
Process finished with exit code 0
```

Q-06:**Code:**

```
package Q_06;

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

public class Q_06 {
    public static void main(String[] args) {
        int random, guess;
        Random r = new Random();
        random = r.nextInt(100);

        do{
            System.out.print("\nGuess a number between 0 and 100: ");
            Scanner scan = new Scanner(System.in);
            guess = scan.nextInt();

            if(guess > random){
                System.out.println("Your guess is Higher, Guess again!");
            } else if (guess < random){
                System.out.println("Your guess is Lower, Guess again!");
            } else{
                System.out.println("Your guess is Correct!!");
            }
        } while(guess != random);
        System.out.println("\nThe random number was: "+random);
    }
}
```

Output:

```
Guess a number between 0 and 100: 75
Your guess is Higher, Guess again!

Guess a number between 0 and 100: 40
Your guess is Lower, Guess again!

Guess a number between 0 and 100: 50
Your guess is Higher, Guess again!

Guess a number between 0 and 100: 45
Your guess is Higher, Guess again!

Guess a number between 0 and 100: 42
Your guess is Lower, Guess again!

Guess a number between 0 and 100: 43
Your guess is Correct!!

The random number was: 43
```

Q-07:**Code:**

```
package Q_07;

import java.util.Scanner;

public class Q_07 {
    public static void main(String[] args) {
        Scanner scan = new Scanner(System.in);

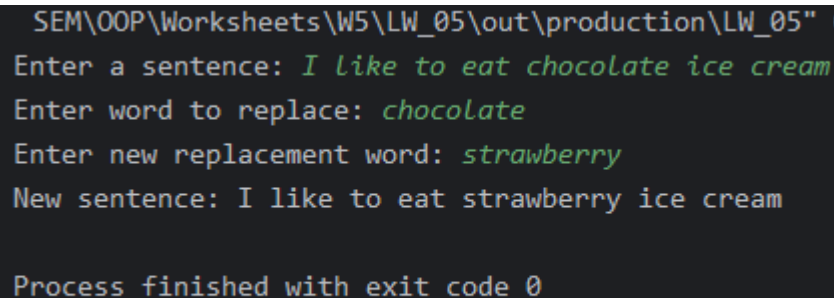
        System.out.print("Enter a sentence: ");
        String sentence = scan.nextLine();

        System.out.print("Enter word to replace: ");
        String oldWord = scan.nextLine();

        System.out.print("Enter new replacement word: ");
        String newWord = scan.nextLine();

        String replaced = sentence.replace(oldWord, newWord);

        System.out.println("New sentence: " + replaced);
    }
}
```

Output:

```
SEM\OOP\Worksheets\W5\LW_05\out\production\LW_05" Q_07.Q_
Enter a sentence: I like to eat chocolate ice cream
Enter word to replace: chocolate
Enter new replacement word: strawberry
New sentence: I like to eat strawberry ice cream

Process finished with exit code 0
```