Assignment 7

Template

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Div : SE10
Batch : F10
Roll.No : 23241

Code:

```
/*
Name:- Atharva Kinikar
Div :- SE10
Batch :- F10
Roll no :- 23241
*/

import java.util.ArrayList; //importing arraylist
package
import java.util.*;
import java.lang.*;
import java.io.*;

//class number_op to containing methods realted
to number operations
class number_op {
    private int n, count, element, choice; //
class variables

    number_op() { // class constructor
        n = 0;
        count = 0;
        element = 0;
```

```
        choice = 0;
    }

    void even_odd(int x) { // function to check
if number is even or odd
        if (x % 2 == 0) {
            System.out.println(x + " is an even
number.");
            count++;
        } else {
            System.out.println(x + " is  an odd
number.");
        }
    }

    void prime(int x) { // function to check if
number is prime or not
        boolean flag = false;
        if (x == 1)
            System.out.println(x + " is not prime
number");
        else {
            for (int j = 2; j <= x / 2; j++) {
                if (x % 2 == 0) {
                    flag = true;
                    break;
                }
            }

            if (flag) {
```

```
                System.out.println(x + " is not a
prime number");
            }

            else {
                System.out.println(x + " is prime
number");
                count++;
            }
        }

    }

    void check(int choice, int x) { // checking
for odd& even numbers and prime numbers
        switch (choice) {
        case 1:
            even_odd(x);
            break;

        case 2:
            prime(x);
            break;

        default:
            System.out.println("Enter valid
choice");
            break;
        }

    }
```

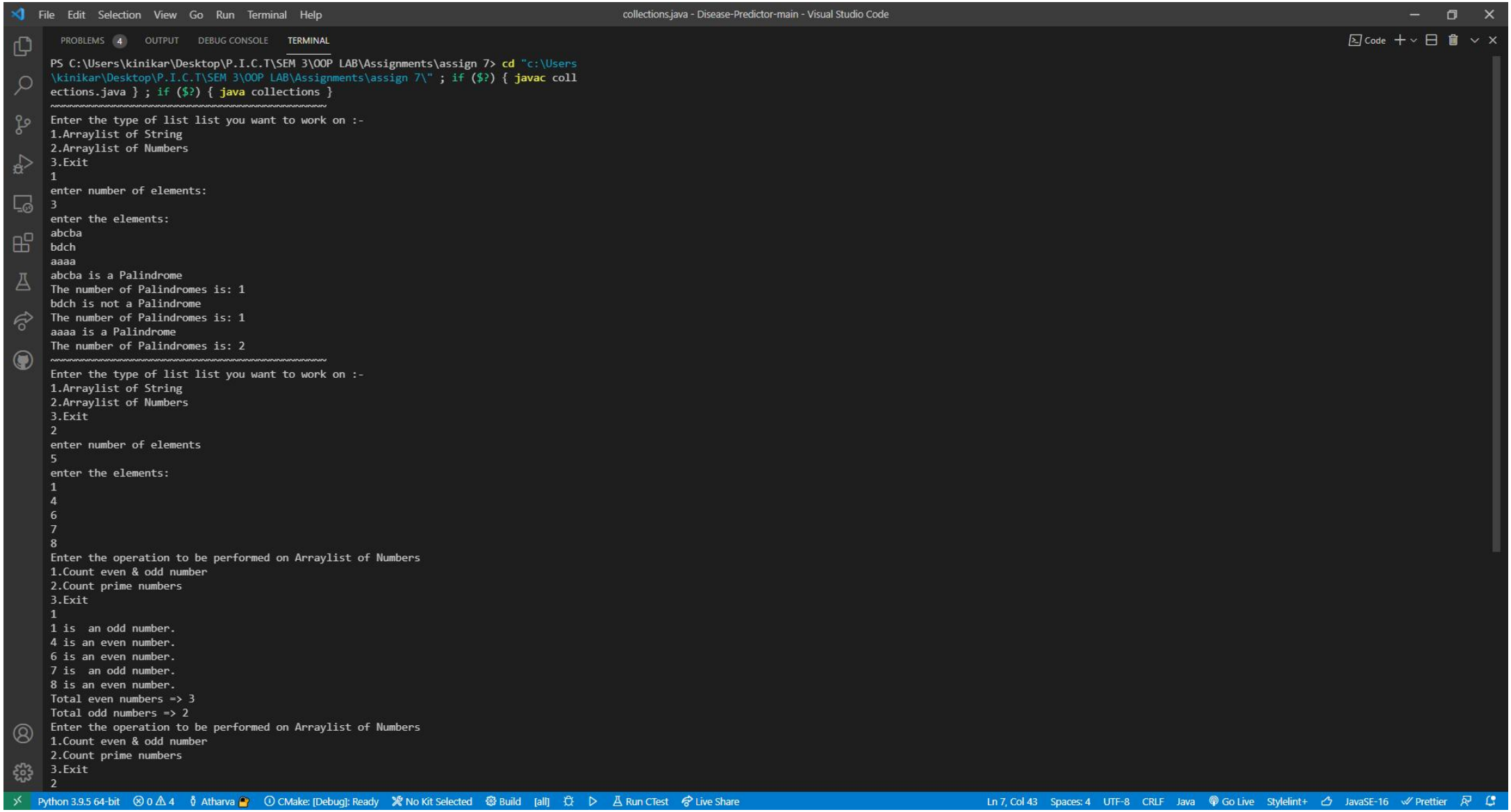
```
    void getdata() { // method to get data from
user
        ArrayList<Integer> nums = new
ArrayList<Integer>();
        Scanner sc = new Scanner(System.in);
        System.out.println("enter number of
elements");
        n = sc.nextInt();
        System.out.println("enter the elements:
");
        for (int i = 0; i < n; i++) {
            element = sc.nextInt();
            nums.add(element);
        }

        do {
            System.out.println(
                    "Enter the operation to be
performed on Arraylist of Numbers\n1.Count even &
odd number\n2.Count prime numbers\n3.Exit");
            choice = sc.nextInt();
            for (int i : nums) {
                check(choice, i);
            }

            if (choice == 1) {
                System.out.println("Total even
numbers => " + count);
                System.out.println("Total odd
numbers => " + (n - count));
```

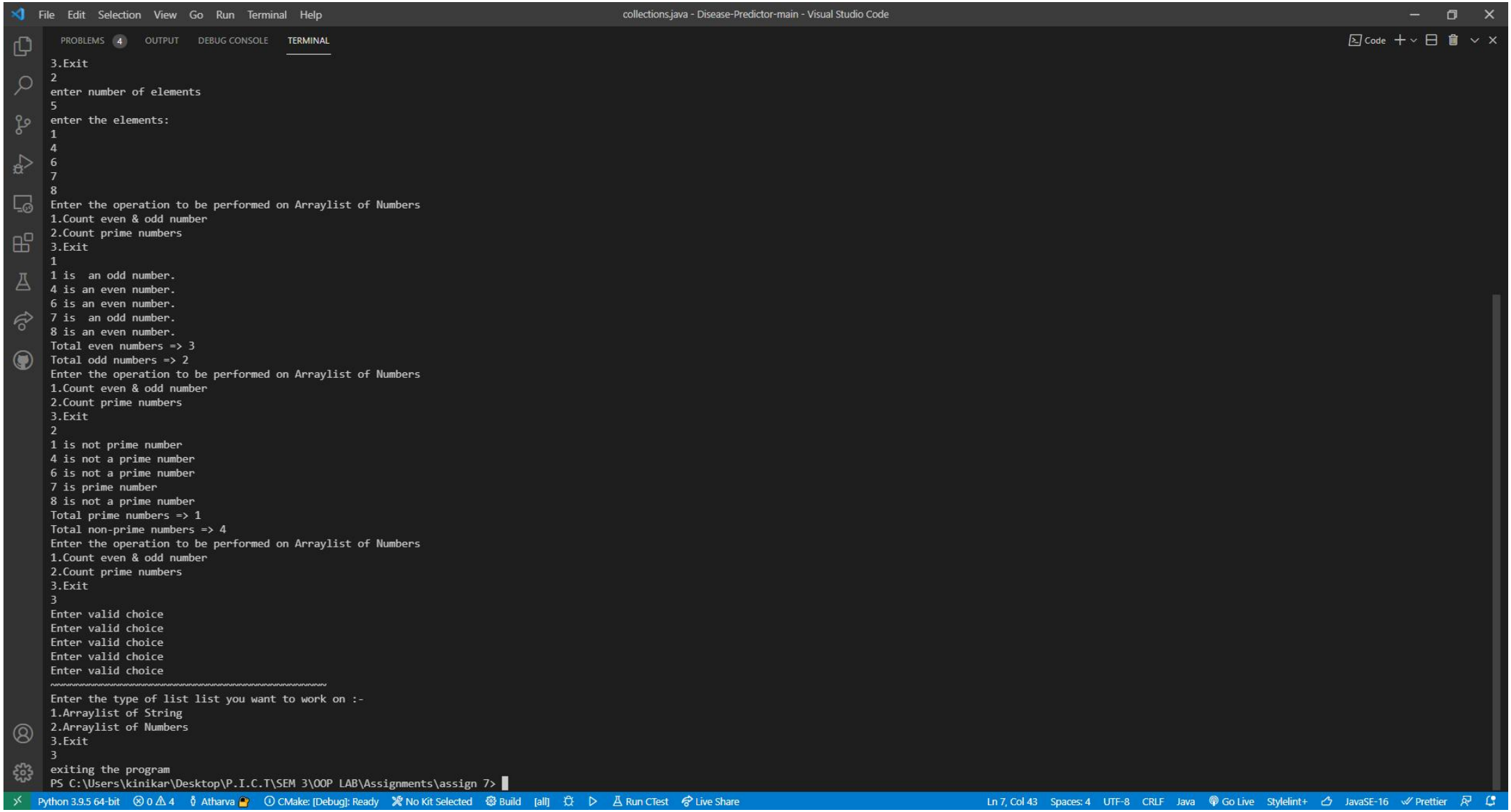
```
                count = 0;
            } else if (choice == 2) {
                System.out.println("Total prime
numbers => " + count);
                System.out.println("Total non-
prime numbers => " + (n - count));
                count = 0;
            }
        } while (choice != 3);

    }
}

// class string_op containing string operations
class string_op {
    // member variables
    private int n, count;
    private String str;

    string_op() { // class constructor
        n = 0;
        str = "";
        count = 0;
    }

    void check_palindrome(String x) { // function
to check if string is palindrome
        StringBuilder s1 = new StringBuilder(x);
        if (x.equals(s1.reverse().toString())) {
            System.out.println(x + " is a
Palindrome");
```

```
            count++;
        }

        else {
            System.out.println(x + " is not a
Palindrome");
        }

        System.out.println("The number of
Palindromes is: " + count);
    }

    void get_data() { // functio get string input
from user
        ArrayList<String> words = new
ArrayList<String>();
        Scanner sc = new Scanner(System.in);
        System.out.println("enter number of
elements: ");
        n = sc.nextInt();
        System.out.println("enter the elements:
");
        for (int i = 0; i < n; i++) {
            str = sc.next();
            words.add(str);
        }

        for (String w : words) {
            check_palindrome(w);
        }
    }
```

```
}

public class collections { // public class
collections
    public static void main(String[] args) { //
main function
        int choice1;
        Scanner sc = new Scanner(System.in);
        do {

System.out.println("~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~
~~~~~~~~~~~~~~~");
            System.out.println(
                    "Enter the type of list list
you want to work on :-\n1.Arraylist of
String\n2.Arraylist of Numbers\n3.Exit");
            choice1 = sc.nextInt();
            switch (choice1) {
            case 1:
                string_op obj1 = new string_op();
                obj1.get_data();
                break;

            case 2:
                number_op obj2 = new number_op();
                obj2.getdata();
                break;

            case 3:
                System.out.println("exiting the
program");
```

```
                break;

            default:
                System.out.println("Enter valid
choice");
                break;

            }

        } while (choice1 != 3);

    }
}
```


File Edit Selection View Go Run Terminal Help
collections.java - Disease-Predictor-main - Visual Studio Code
PROBLEMS 4 OUTPUT DEBUG CONSOLE TERMINAL
Code
PS C:\Users\kinikar\Desktop\P.I.C.T\SEM 3\OOP LAB\Assignments\assign 7> cd "c:\Users\kinikar\Desktop\P.I.C.T\SEM 3\OOP LAB\Assignments\assign 7\" ; if ($?) { javac collections.java } ; if ($?) { java collections }
Enter the type of list list you want to work on :-
1.Arraylist of String
2.Arraylist of Numbers
3.Exit
1
enter number of elements:
3
enter the elements:
abcba
bdch
aaaa
abcba is a Palindrome
The number of Palindromes is: 1
bdch is not a Palindrome
The number of Palindromes is: 1
aaaa is a Palindrome
The number of Palindromes is: 2
Enter the type of list list you want to work on :-
1.Arraylist of String
2.Arraylist of Numbers
3.Exit
2
enter number of elements
5
enter the elements:
1
4
6
7
8
Enter the operation to be performed on Arraylist of Numbers
1.Count even & odd number
2.Count prime numbers
3.Exit
1
1 is an odd number.
4 is an even number.
6 is an even number.
7 is an odd number.
8 is an even number.
Total even numbers => 3
Total odd numbers => 2
Enter the operation to be performed on Arraylist of Numbers
1.Count even & odd number
2.Count prime numbers
3.Exit
2
Python 3.9.5 64-bit
0 4
Atharva
CMake: [Debug]: Ready
No Kit Selected
Build
[all]
Run CTest
Live Share
Ln 7, Col 43
Spaces: 4
UTF-8
CRLF
Java
Go Live
Stylelint+
JavaSE-16
Prettier


File Edit Selection View Go Run Terminal Help
collections.java - Disease-Predictor-main - Visual Studio Code
PROBLEMS 4 OUTPUT DEBUG CONSOLE TERMINAL
Code
3.Exit
2
enter number of elements
5
enter the elements:
1
4
6
7
8
Enter the operation to be performed on Arraylist of Numbers
1.Count even & odd number
2.Count prime numbers
3.Exit
1
1 is an odd number.
4 is an even number.
6 is an even number.
7 is an odd number.
8 is an even number.
Total even numbers => 3
Total odd numbers => 2
Enter the operation to be performed on Arraylist of Numbers
1.Count even & odd number
2.Count prime numbers
3.Exit
2
1 is not prime number
4 is not a prime number
6 is not a prime number
7 is prime number
8 is not a prime number
Total prime numbers => 1
Total non-prime numbers => 4
Enter the operation to be performed on Arraylist of Numbers
1.Count even & odd number
2.Count prime numbers
3.Exit
3
Enter valid choice
Enter valid choice
Enter valid choice
Enter valid choice
Enter valid choice
Enter the type of list list you want to work on :-
1.Arraylist of String
2.Arraylist of Numbers
3.Exit
3
exiting the program
PS C:\Users\kinikar\Desktop\P.I.C.T\SEM 3\OOP LAB\Assignments\assign 7>
Python 3.9.5 64-bit
Atharva
CMake: [Debug]: Ready
No Kit Selected
Build
[all]
Run CTest
Live Share
Ln 7, Col 43
Spaces: 4
UTF-8
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