Name: Chharng Chhit
ID: e20200008
Group: I3-GICA

TP5 Report

TP05-01

```java
package TP05;

import java.util.Scanner;
import TP_04.*;
public class PrimeList {
	private int start = 2;
	private int end;
	public PrimeList(int end){
		this.end = end;
	}

	public void ListAll(){
		PrimeNumber pn;
		int count = 0;
		for(int n = start; n<=end; n++){
			pn = new PrimeNumber(n);
			if(pn.isPrime()){
				System.out.print(n+" ");
				count++;
			}

		}
		if(count==1){
			System.out.print("is prime number.\n");
		}else if(count >1){
			System.out.print("are prime number.\n");
		}


	}
	public static void main(String[] args) {
		Scanner sc = new Scanner(System.in);
		System.out.print("input end number: ");
		PrimeList Pl;
		Pl = new PrimeList(sc.nextInt());
		Pl.ListAll();
	}
}

```

Output

```
input end number: 100
2 3 5 7 11 13 17 19 23 29 31 37 41 43 47 53 59 61 67 71 73 79 83 89 97 are prime number.
PS D:\General\ITC\I3-GIC\Semester_2\OOP\JAVA_TP>
```

TP05-02

```java
package TP05;

import java.util.Scanner;

public class OddNum {
	private int number;

	public OddNum(int number){
		this.number = number;
	}

	public boolean isOdd(){
		if(number%2 != 0){
			return true;
		}
		return false;
	}

	public static void main(String[] args) {
		Scanner sc = new Scanner(System.in);
		RangeUtil ce1;
		System.out.print("Input Start number: ");
		int start = sc.nextInt();
		System.out.print("Input End number: ");
		int end = sc.nextInt();
		System.out.print("Input Step: ");
		int step = sc.nextInt();

		ce1 = new RangeUtil(start, end, step);
		System.out.print("Odd number: ");
		System.out.print(ce1.ToString("Odd"));

	}
}

```

Output

```
ea028fb0\bin' 'TP05.OddNum'
Input Start number: 10
Input End number: 200
Input Step: 3
Odd number:  10 16 22 28 34 40 46 52 58 64 70 76 82 88 94 100 106 112 118 124 130 136 142 148 154 160 166 172 178 184 190 196
PS D:\General\ITC\I3-GIC\Semester_2\OOP\JAVA_TP>
```

TP05-03

```java
package TP05;

import java.util.Scanner;

public class EvenNum {
	private int number;

	public EvenNum(int number){
		this.number = number;
	}

	public boolean isOdd(){
		if(number%2 == 0){
			return true;
		}
		return false;
	}

	public static void main(String[] args) {
		Scanner sc = new Scanner(System.in);
		RangeUtil ce1;
		System.out.print("Input Start number: ");
		int start = sc.nextInt();
		System.out.print("Input End number: ");
		int end = sc.nextInt();
		System.out.print("Input Step: ");
		int step = sc.nextInt();

		ce1 = new RangeUtil(start, end, step);
		System.out.print("Odd number: ");
		System.out.print(ce1.ToString("Even"));
	}
}
```

Output

```
ea028fb0\bin' 'TP05.EvenNum'
Input Start number: 10
Input End number: 200
Input Step: 3
Odd number:  13 19 25 31 37 43 49 55 61 67 73 79 85 91 97 103 109 115 121 127 133 139 145 151 157 163 169 175 181 187 193 199
PS D:\General\ITC\I3-GIC\Semester_2\OOP\JAVA_TP>
```

TP05-04

```java
package TP05;
import java.util.Scanner;

public class CompanyProfit {
	public static void main(String[] args) {
		Scanner sc = new Scanner(System.in);
		double[] month = new double[12];
		double total = 0;

		for (int i=0; i<12; i++){
			System.out.printf("Profit for month %d : ", i+1);
			month[i] = sc.nextDouble();
			total += month[i];
		}

		System.out.printf("\nTotal profits for 12 months : %.2f\n", total);
	}
}
```

Output

```
ea028fb0\bin' 'TP05.CompanyProfit'
Profit for month 1 : 25
Profit for month 2 : 2.5
Profit for month 3 : -63
Profit for month 4 : 0
Profit for month 5 : 10
Profit for month 6 : 32
Profit for month 7 : 26.5
Profit for month 8 : 28.2
Profit for month 9 : 29
Profit for month 10 : 31.7
Profit for month 11 : 29.5
Profit for month 12 : 26

Total profits for 12 months : 177.40
PS D:\General\ITC\I3-GIC\Semester_2\OOP\JAVA_TP>
```

TP05-05

```java
package TP05;

import java.util.Objects;
import java.util.Scanner;

import javax.sql.rowset.WebRowSet;

public class Palindrome {
	private String word;

	public Palindrome(String word){
		this.word = word;
	}

	boolean checkPalindromeByREV(){
		StringBuilder wordREV = new StringBuilder(word);
		wordREV.reverse();
		return wordREV.toString().equalsIgnoreCase(word);

	}

	boolean checkPalindromeByLOOP(){
		for(int i=0; i <= word.length()/2; i++){
			if(word.charAt(i) != word.charAt(word.length()-1-i)) return false;
			return true;
		}

		return true;
	}

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

		System.out.print("Please gives a word to Check: ");
		pa = new Palindrome(sc.nextLine());
		System.out.print("Choose method (REV, LOOP): ");
		switch(sc.next()){
			case "REV":
				if(pa.checkPalindromeByREV()){
					System.out.printf("%s is Palindrome.\n",pa.word);
				}
				else{
					System.out.printf("%s is not Palindrme.\n",pa.word);
				}
			break;
			case "LOOP":
				if(pa.checkPalindromeByLOOP()){
					System.out.printf("%s is Palindrome.\n",pa.word);
				}
				else{
					System.out.printf("%s is not Palindrme.\n",pa.word);
				}
			break;
		}


	}
}
```

Output

```
Please gives a word to Check: CHHIT
Choose method (REV, LOOP): REV
CHHIT is not Palindrme.
```

```
Please gives a word to Check: CHHITTIHHC
Choose method (REV, LOOP): LOOP
CHHITTIHHC is Palindrome.
```

TP05-06

```java
package TP05;

import java.util.Scanner;

public class Mirroring {
	private String word;
	public Mirroring(String word){
		this.word = word;
	}

	public String makePalindrome(){
		String wordRev = "";
			for(int i = word.length()-1; i>=0; i--){
				wordRev = wordRev + word.charAt(i);
			}
			wordRev = word + wordRev;
		return wordRev;
	}
	public static void main(String[] args) {
		Mirroring mi;
		Scanner sc = new Scanner(System.in);
		System.out.print("Please enter a word: ");
		mi = new Mirroring(sc.nextLine());
		System.out.println(mi.makePalindrome());
	}
```

Output

```
ea028fb0\bin' 'TP05.Mirroring'
Please enter a word: I love you
I love you  uoy evol I
```

TP05-07

```java
package TP05;

import java.util.Scanner;

public class EscapeCharactersReplacement {
	private String word;
	public EscapeCharactersReplacement(String word){
		this.word = word;
	}

	public String SymbolToChar(){
		String replace;
		replace=word.replaceAll("\\\\n", "(new_line)")
				.replaceAll("\\\\t", "(tab)")
				.replaceAll("\\\\\\\\", "(slash)")
				.replaceAll("//", "(comment_line)")
				.replaceAll(":\\)", "(smile)");
		return replace;
	}

	public String CharToSymbol(){
		String replace;
		replace=word.replaceAll("(new_line)","\\\\n")
				.replaceAll("(tab)", "\\\\t")
				.replaceAll("(slash)", "\\\\\\\\")
				.replaceAll("(comment_line)", "//")
				.replaceAll( "(smile)", ":\\)");
		return replace;
	}

```

Output

```
ea028fb0\bin' 'TP05.EscapeCharactersReplacement'
Please enter a sentence: \n \t is used to represent new line \n\\ it is a // line comment :)
Encoded sentence: (slash)n (slash)t is used to represent new line (slash)n(slash)(slash) it is a (comment_line) line comment (smile)
Do you want to decode the message? (Y/N): Y
Decoded sentence: \n \t is used to represent new line \n\\ it is a // line comment :)
PS D:\General\ITC\I3-GIC\Semester_2\OOP\JAVA_TP>
```

```java
package TP05;

public class RangeUtil {
	private int start, end, step;

	public RangeUtil(int start, int end, int step){
		this.start = start;
		this.end = end;
		this.step = step;
	}
	public String ToString(String n){
		String string ="";
		EvenNum ev;
		if(n == "Odd"){

			if(start<end){
				for (int i=start; i<=end; i+=step){
					ev = new EvenNum(i);
					if(ev.isOdd()){
						string = string + " " + Integer.toString(i);
					}
				}
			}else{
				for(int i=end; i<=start; i+=step){
					ev = new EvenNum(i);
					if(ev.isOdd()){
						string = string+" "+ Integer.toString(i);
					}
				}
			}
		}
		if(n == "Even"){
			if(start<end){
				for (int i=start; i<=end; i+=step){
					ev = new EvenNum(i);
					if(!ev.isOdd()){
						string = string + " " + Integer.toString(i);
					}
				}
			}else{
				for(int i=end; i<=start; i+=step){
					ev = new EvenNum(i);
					if(!ev.isOdd()){
						string = string+" "+ Integer.toString(i);
					}
				}
			}
		}
		return string;
	}
}

```

TP05-CE2

```java
package TP05;

public class RangeUtil {
	private int start, end, step;

	public RangeUtil(int start, int end, int step){
		this.start = start;
		this.end = end;
		this.step = step;
	}
	public String ToString(String n){
		String string ="";
		EvenNum ev;
		if(n == "Odd"){

			if(start<end){
				for (int i=start; i<=end; i+=step){
					ev = new EvenNum(i);
					if(ev.isOdd()){
						string = string + " " + Integer.toString(i);
					}
				}
			}else{
				for(int i=end; i<=start; i+=step){
					ev = new EvenNum(i);
					if(ev.isOdd()){
						string = string+" "+ Integer.toString(i);
					}
				}
			}
		}
		if(n == "Even"){
			if(start<end){
				for (int i=start; i<=end; i+=step){
					ev = new EvenNum(i);
					if(!ev.isOdd()){
						string = string + " " + Integer.toString(i);
					}
				}
			}else{
				for(int i=end; i<=start; i+=step){
					ev = new EvenNum(i);
					if(!ev.isOdd()){
						string = string+" "+ Integer.toString(i);
					}
				}
			}
		}
		return string;
	}
}

```