Data Structure and Advanced Programming

Homework #3
Due: 2021/3/23 08:00am (CST)

NOTE: Please upload your C++ source codes (by copy-paste) to PDOGS before the due date and time.

The goal of this homework is to practice recursion. There are two programs in this homework. Please implement each program in C++ to fulfill the required input and output.

Program 1. (40%) Even and Odd Numbers

Please write a program to print even or odd numbers in a given range using recursion. The first line of output is the even numbers and the second line is the odd numbers.

Sample Input / Output

```
//input
5

//output
2 4
1 3 5
```

```
//input
10
5
//output
2 4 6 8 10
1 3 5 7 9
2 4
1 3 5
```

Program 2. Palindrome (60%)

A palindrome is a string that reads the same from left to right as it does from right to left. For example, "tenet" and "level" are both palindromes. Please write a program to check whether a given String is Palindrome or not.

Sample Input / Output

```
//input
mom

//output
The entered word is a
palindrome.
```

```
//input
book
wow
//output
The entered word is not a
palindrome.
The entered word is a
palindrome.
```