Assignment-1

1. Write a program which accepts an integer number as input from the user and perform the following conditional checks:

 a. Print Tom if number is odd and exists between 20 to 30

 b. Print Jerry, if number is even and exists between 20 and 30

CODE:

```java
package Assignment1;

import java.util.Scanner;

public class Program1OddEven {
    public static void main(String[] args) {
        Scanner sc = new Scanner(System.in);
        System.out.println("Enter a number ");
        int n = sc.nextInt();
        if (n >= 20 && n <= 30) {
            if (n % 2 == 0) {
                System.out.println("Jerry");
            } else {
                System.out.println("Tom");
            }
        }
        else{
            System.out.println("Invalid! number dose not exists between 20 and 30");
        }
    }
}
```

Outputs:

```
"C:\Program Files\Java\jdk-20\bin\java.exe" "-javaagent:C:\Program Files\JetBrains\IntelliJ IDEA 2024.1\lib\idea_rt.jar=60939:C:\Program Files\JetBrains\IntelliJ IDEA 2024.1\bi
Enter a number
20
Jerry

Process finished with exit code 0
```

```
"C:\Program Files\Java\jdk-20\bin\java.exe" "-javaagent:C:\Program Files\JetBrains\IntelliJ IDEA 2024.1\lib\idea_rt.jar=61084:C:\Program Files\JetBrains\IntelliJ IDEA 2024.1\bi
Enter a number
27
Tom

Process finished with exit code 0
```

2. Write a program which accepts a number as input and check whether the given number is palindrome or not If it is a palindrome then

 a. Add all the even numbers and check whether the sum is more than 25.

 b. Print success and failure messages for all 3 conditions

Input: `2468642` Output: `2468642 is palindrome and the sum of even numbers is greater than 25`

Input: `12345` Output: `12345 is not palindrome`

Input: `12345654321` Output: `12345654321 is palindrome and sum of even numbers is less than25`

CODE:

```java
package Assignment1;
import java.util.Scanner;
public class Program2Palindrome {
        public static  void main(String args[]) {
            Scanner sc = new Scanner(System.in);
            System.out.println("Enter a number");
            long n = sc.nextLong();
            if (isPalindrome(n)) {
                long even = 0;
                long temp = n;
                while (temp > 0) {
                    long digit = temp % 10;
                    if (digit % 2 == 0) {
                        even += digit;
                    }
                    temp /= 10;
                }
                if (even > 25) {
                    System.out.println(n+ " is palindrome and the sum of even numbers is greater than 25.");
                } else {
                    System.out.println(n+ " is palindrome and the sum of even numbers is less than 25.");
                }
            } else {
                System.out.println("The number is not a palindrome.");
            }
        }
```

```java
        public static boolean isPalindrome(long number) {  1usage
            long temp1 = number;
            long sum = 0;

            while (number > 0) {
                long r = number % 10;
                sum = sum * 10 + r;
                number /= 10;
            }
            return temp1 == sum;
        }
    }
```

Outputs:

```
"C:\Program Files\Java\jdk-20\bin\java.exe" "-javaagent:C:\Program Files\JetBrains\IntelliJ IDEA 2024.1\lib\idea_rt.jar=61133:C:\Program Files\JetBrains\IntelliJ IDEA 2024.1\bi
Enter a number
2468642
2468642 is palindrome and the sum of even numbers is greater than 25.

Process finished with exit code 0
```

```
"C:\Program Files\Java\jdk-20\bin\java.exe" "-javaagent:C:\Program Files\JetBrains\IntelliJ IDEA 2024.1\lib\idea_rt.jar=61146:C:\Program Files\JetBrains\IntelliJ IDEA 2024.1\b
Enter a number
12345
The number is not a palindrome.

Process finished with exit code 0
```

```
"C:\Program Files\Java\jdk-20\bin\java.exe" "-javaagent:C:\Program Files\JetBrains\IntelliJ IDEA 2024.1\lib\idea_rt.jar=61155:C:\Program Files\JetBrains\IntelliJ IDEA 2024.1\bi
Enter a number
12345654321
12345654321 is palindrome and the sum of even numbers is less than 25.

Process finished with exit code 0
```

3. Write a program that reads an unspecified number of integer arguments using Scanner Class and adds them together. The program should display the total of the given input number and should only consider integer value. The program should display an error message if there are any non-integer values

Input : 12 23 2 4

Output : 41

CODE:

```
package Assignment1;
import java.util.Scanner;
public class Program3SumIntegers {
    public static void main(String[] args) {
        Scanner scanner = new Scanner(System.in);
        int sum = 0;
        System.out.println("Enter integer values(press Enter after each value, type 'done' when finished):");
        while (scanner.hasNext()) {
            if (scanner.hasNextInt()) {
                sum += scanner.nextInt();
            } else {
                System.out.println("Error:Non-integer value detected.please Enter only integer values.");
                scanner.next();
                System.out.println("Total sum of the given input numbers:" + sum);
            }
        }
        scanner.close();
    }
}
```

Output:

```
"C:\Program Files\Java\jdk-20\bin\java.exe" "-javaagent:C:\Program Files\JetBrains\IntelliJ IDEA 2024.1\lib\idea_rt.jar=61192:C:\Program Files\JetBrains\IntelliJ IDEA 2024.1\b
Enter integer values(press Enter after each value, type 'done' when finished):
12 23 2 4
Done
Error:Non-integer value detected.please Enter only integer values.
Total sum of the given input numbers:41
```

4. Write a program to find whether input integer is Unique or not. A Unique number is a positive integer (without leading zeros) with no duplicate digits. For example, 7, 135, 214 are all unique numbers whereas 33, 3121, 300 are not.

CODE:

```java
package Assignment1;

import java.util.Scanner;
import java.util.HashSet;
import java.util.Set;
public class Program4unique {
    public static void main(String[] args) {
        Scanner scanner = new Scanner(System.in);
        System.out.print("Enter an integer: ");
        int number = scanner.nextInt();

        if (isUnique(number)){
            System.out.println(number + " is a unique number.");
        } else {
            System.out.println(number + " is not a unique number.");
        }
    }

    public static boolean isUnique(int number) {  1 usage
        String numStr = String.valueOf(number);
        Set<Character> digitSet = new HashSet<>();

        for (char digit : numStr.toCharArray()) {
            if (!digitSet.add(digit)) {
                return false;
            }
        }
        return true;
    }
}
```

Outputs:

```
"C:\Program Files\Java\jdk-20\bin\java.exe" "-javaagent:C:\Program Files\JetBrains\IntelliJ IDEA 2024.1\lib\idea_rt.jar=61205:C:\Program Files\JetBrains\IntelliJ IDEA 2024.1\b:
Enter an integer: 135
135 is a unique number.

Process finished with exit code 0
```

```
"C:\Program Files\Java\jdk-20\bin\java.exe" "-javaagent:C:\Program Files\JetBrains\IntelliJ IDEA 2024.1\lib\idea_rt.jar=61220:C:\Program Files\JetBrains\IntelliJ IDEA 2024.1\b:
Enter an integer:
3121
3121 is not a unique number.

Process finished with exit code 0
```