Palindrome Number:

Input: A number.
Output: Whether the number is a palindrome or not.

Example:

- Input: 121

- Output: "121 is a palindrome."

- Input: 123

- Output: "123 is not a palindrome."

Solution 1: Palindrome Number using Loops

Code:

```java
import java.util.Scanner;

public class PalindromeNumber {

    public static void main(String[] args) {
        // Create a scanner for user input
        Scanner scanner = new Scanner(System.in);

        // Input number
        System.out.println("Enter a number: ");
        int number = scanner.nextInt();

        // Initialize variables to reverse the number
        int originalNumber = number;
        int reversedNumber = 0;

        // Reverse the number using a loop
        while (number != 0) {
            int digit = number % 10;
            reversedNumber = reversedNumber * 10 + digit;
            number /= 10;
        }

        // Check if the original number is the same as the reversed number
        if (originalNumber == reversedNumber) {
```

```java
                System.out.println(originalNumber + " is a palindrome.");
            } else {
                System.out.println(originalNumber + " is not a palindrome.");
            }

            scanner.close();
        }
    }
```

Output:

```
Enter a number:
 1221
1221 is a palindrome
```

```
Enter a number:
 1122
1122 is not a palindrome.
```

Explanation :

- The program reads a number from the user and stores it in a variable.

- It reverses the number by extracting digits one by one.

- It checks if the reversed number is the same as the original and prints whether it is a palindrome.

Solution 2: Palindrome Number using StringBuilder

Code:

```java
import java.util.Scanner;

public class PalindromeNumberStringBuilder {

    public static void main(String[] args) {
        // Create a scanner for user input
        Scanner scanner = new Scanner(System.in);

        // Input number
        System.out.println("Enter a number: ");
        String number = scanner.nextLine();
```

```java
        // Reverse the number using StringBuilder
        String reversedNumber = new StringBuilder(number).reverse().toStrin

        // Check if the original number is the same as the reversed number
        if (number.equals(reversedNumber)) {
            System.out.println(number + " is a palindrome.");
        } else {
            System.out.println(number + " is not a palindrome.");
        }

        scanner.close();
    }
}
```

Output:

```
Enter a number:
4444
4444 is a palindrome.
```

```
Enter a number:
899998
899998 is a palindrome.
```

Explanation:

- This solution reads the number as a string.

- It uses the StringBuilder class to reverse the string representation of the number.

- The program compares the original string with the reversed one and prints whether it is a palindrome.

Java Code Editor: