Reverse Digits of an Integer:

This program uses a while loop to extract each digit and builds the reversed number.

java

Copy code

```
import java.util.Scanner;

public class ReverseInteger {
    public static void main(String[] args) {
        Scanner scanner = new Scanner(System.in);

        // Input: Integer
        System.out.print("Enter an integer: ");
        int number = scanner.nextInt();

        // Reverse the digits
        int reversed = 0;
        while (number != 0) {
            int digit = number % 10;  // Extract the last digit
            reversed = reversed * 10 + digit;  // Build the reversed number
            number /= 10;  // Remove the last digit
        }

        // Output the reversed number
        System.out.println("Reversed number: " + reversed);

        scanner.close();
    }
}
```

2. Check if a String is a Palindrome:

This method checks if the input string reads the same forward and backward.

java

Copy code

```
public class PalindromeCheck {
    public static void main(String[] args) {
        String str = "racecar";  // Example string
        boolean isPalindrome = isPalindrome(str);
        System.out.println("Is the string a palindrome? " + isPalindrome);
    }

    // Method to check if a string is a palindrome
    public static boolean isPalindrome(String str) {
        int left = 0;
        int right = str.length() - 1;

        while (left < right) {
            if (str.charAt(left) != str.charAt(right)) {
                return false;  // If characters don't match
            }
            left++;
            right--;
        }

        return true;
    }
}
```

3. Count Vowels and Consonants:

This program counts the number of vowels and consonants in a given string.

java

Copy code

```
import java.util.Scanner;

public class VowelConsonantCount {
```

```
public static void main(String[] args) {
    Scanner scanner = new Scanner(System.in);

    // Input: String
    System.out.print("Enter a string: ");
    String input = scanner.nextLine();

    // Variables to count vowels and consonants
    int vowels = 0, consonants = 0;

    // Loop through each character in the string
    for (int i = 0; i < input.length(); i++) {
        char ch = input.charAt(i);

        // Check if the character is a letter
        if (Character.isLetter(ch)) {
            // Convert to lowercase for easier comparison
            ch = Character.toLowerCase(ch);

            // Check if the character is a vowel
            if (ch == 'a' || ch == 'e' || ch == 'i' || ch == 'o' || ch == 'u') {
                vowels++;
            } else {
                consonants++;
            }
        }
    }

    // Output the counts
    System.out.println("Vowels: " + vowels);
    System.out.println("Consonants: " + consonants);
```

```
        scanner.close();
    }
}
```

4. Capitalize the First Letter of Each Word:

This method capitalizes the first letter of each word in a given string.

java

Copy code

```
public class CapitalizeWords {
    public static void main(String[] args) {
        String sentence = "hello world this is java";  // Example sentence
        String capitalized = capitalizeWords(sentence);
        System.out.println("Capitalized: " + capitalized);
    }

    // Method to capitalize the first letter of each word
    public static String capitalizeWords(String sentence) {
        String[] words = sentence.split(" ");
        StringBuilder result = new StringBuilder();

        for (String word : words) {
            // Capitalize first letter and append rest of the word
            if (word.length() > 0) {
                result.append(Character.toUpperCase(word.charAt(0)))
                      .append(word.substring(1))
                      .append(" ");
            }
        }

        // Remove the last space and return
        return result.toString().trim();
```

```
    }
}
```

5. Check if a Number is Even or Odd:

This simple program checks whether a given number is even or odd.

java

Copy code

```
import java.util.Scanner;

public class EvenOddCheck {
    public static void main(String[] args) {
        Scanner scanner = new Scanner(System.in);

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

        // Check if the number is even or odd
        if (number % 2 == 0) {
            System.out.println(number + " is even.");
        } else {
            System.out.println(number + " is odd.");
        }

        scanner.close();
    }
}
```