Java Control Flow Exercise

Problem Statement

> [!IMPORTANT] Write a Java program that generates a random number between 1 and 7, representing the days of the week (1 for Monday, 2 for Tuesday, etc.). Based on the number, the program should print the name of the day using a `switch` statement. If the number is outside this range (though it shouldn't be), the program should print an error message.
>
> Additionally, use a `for` loop to print the numbers 1 through 10, then use a `while` loop to count down from 10 to 1. Finally, demonstrate the use of a `do-while` loop to print "This will print at least once!" regardless of conditions.

> [!TIP]
>
> ## Specific Requirements
>
> 1. Generate a random number between 1 and 7 to represent the days of the week.
> 2. Use a `switch` statement to map the random number (1-7) to the corresponding day of the week.
> 3. Implement a `for` loop to print the numbers 1 to 10.
> 4. Implement a `while` loop to print numbers 10 down to 1.
> 5. Use a `do-while` loop to print a message at least once.
> 6. Use the `forEach` loop to iterate over an array of strings representing the days of the week.

Example Output

```
The random number is: 3
The day is: Wednesday

Counting from 1 to 10:
1 2 3 4 5 6 7 8 9 10

Counting down from 10:
10 9 8 7 6 5 4 3 2 1

This will print at least once!

Days of the week:
Monday
Tuesday
Wednesday
Thursday
Friday
Saturday
Sunday
```

> [!CAUTION]
>
> # Instructions
>
> 1. Generate a random number between 1 and 7 using `Math.random()` or the `Random` class.
> 2. Use a `switch` statement to print the corresponding day of the week based on the random number.
> 3. Implement a `for` loop to count from 1 to 10 and print each number.
> 4. Use a `while` loop to count down from 10 to 1 and print each number.
> 5. Implement a `do-while` loop to print a message at least once.
> 6. Create an array with days of the week and use the `forEach` loop to print each day.

> [!WARNING] Starting Code Snippet (May not compile or work): Modify the code as needed.

```java
import java.util.Random;

public class ControlFlowExample {
    public static void main(String[] args) {
        // Generate a random number between 1 and 7
        Random random = new Random();
        int dayNumber = random.nextInt(7) + 1; // Generates a number between 1 and
7

        System.out.println("The random number is: " + dayNumber);

        // Use switch to map the number to a day of the week
        switch (dayNumber) {
            case 1:
                System.out.println("The day is: Monday");
                break;

            default:
                System.out.println("Error: Invalid day number!");
        }

        // Use a for loop to count from 1 to 10
        System.out.println("\nCounting from 1 to 10:");


        // Use a while loop to count down from 10 to 1
        System.out.println("\nCounting down from 10:");

        System.out.println();

        // Use a do-while loop to print a message at least once
        System.out.println("\nThis will print at least once!");


        // Use forEach loop to print the days of the week
        String[] daysOfWeek = {"Monday", "Tuesday", "Wednesday", "Thursday",
"Friday", "Saturday", "Sunday"};

    }
```

```
    }
```