Solution: Initializing and manipulating arrays in Java

To solve this challenge, first declare an array *daysInMonth* of type int to hold the number of days in each month for a non-leap year. Create an array with twelve elements, each representing a month, for instance: *int[] daysInMonth = new int[12]*.

Next, using dynamic initialization, initialize each element of the *daysInMonth* array with the corresponding number of days for each month. For example, *daysInMonth[0] = 31*, which sets the number of days in January to 31. Repeat this step for all months from January to December.

For month names, declare and initialize another array *monthNames* of type *String* to hold the names of the months, such as *String[] monthNames = {"January", "February", …}*.

The final step is to print the results. Use a for loop to iterate through the *daysInMonth* array. Inside the loop, print the month's name and the number of days it contains.

The following code demonstrates the solution:

```
import java.util.Arrays;

public Class Main {

public static void main(String[] arg) {
        // Step 1: Declare an array

        int[] daysInMonth = new int[12];

        // Step 2: Dynamically initialize the array

        daysInMonth[0] = 31; // January

        daysInMonth[1] = 28; // February

        daysInMonth[2] = 31; // March

        daysInMonth[3] = 30; // April

        daysInMonth[4] = 31; // May

        daysInMonth[5] = 30; // June

        daysInMonth[6] = 31; // July

        daysInMonth[7] = 31; // August

        daysInMonth[8] = 30; // September

        daysInMonth[9] = 31; // October

        daysInMonth[10] = 30; //November

        daysInMonth[11] = 31; //December

        // Step 3: Declare an array with the names of the months

        String[] monthNames = { "Jan", "Feb", "Mar", "Apr",

        "May", "Jun", "Jul", "Aug", "Sep", "Oct", "Nov", "Dec" };

        // Step 4: Print the number of days in each month

         for (int i = 0; i < daysInMonth.length; i++) {

         System.out.println(monthNames[i] + ": " + daysInMonth[i] + " days");

        }

    }

}
```