```
package com.itbulls.learnit.javacore.methods.hw;

import java.util.Arrays;
import java.util.Random;
import java.util.Scanner;

public class ArrayExtension {

	public static final int MULTIPLIER = 2;

	public static void main(String[] args) {
		Scanner sc = new Scanner(System.in);
		System.out.print("Please, enter length of initial array: ");
		int baseArrayLength = sc.nextInt();
		int[] arr = generateRandomArray(baseArrayLength);
		int[] extendedArray = extendArray(arr);
		System.out.println("*** Initial array ***");
		System.out.println(Arrays.toString(arr));
		System.out.println("*** Extended array ***");
		System.out.println(Arrays.toString(extendedArray));
	}

	/**
	 * The method extends array.
	 * If array {1, 2, 3} has been passed to this method then array {1, 2, 3, 2, 4, 6}
	 * is returned from this method.
	 *
	 * @param arr - base of extension. Extended array contains elements from this array
	 * and additionally contains the same elements multiplied by two.
	 * @return extended array.
	 */
```

```
	public static int[] extendArray(int[] arr) {
		int newArrayLenght = arr.length * 2;
		int[] resultArray = Arrays.copyOf(arr, newArrayLenght);

		for (int i = arr.length; i < newArrayLenght; i++) {
			resultArray[i] = arr[i - arr.length] * MULTIPLIER;
		}

		return resultArray;
	}

	public static int[] generateRandomArray(int amountOfElements) {
		Random r = new Random();
		int[] resultArray = new int[amountOfElements];
		for (int i = 0; i < amountOfElements; i++) {
			resultArray[i] = r.nextInt(100) + 1;
		}
		return resultArray;
	}

}
```