Week 07 : Programming Assignment 4

Implement a Simple Array Processor

You need to complete the implementation of the `getMax()` method inside the `NumberArray` class. This method should return the **largest number** from the array.

Tasks:

1. **Complete the `getMax()` method** in the template section.
2. **The method should iterate through the array and find the largest value.**

Example Input:

```
3 8 1 5 7
```

Example Output:
Max: 8, Min: 1

Private Test cases used for evaluation	Input	Expected Output	Actual Output	Status
Test Case 1	10 12 14 16 18	Max: 18, Min: 10	Max: 18, Min: 10\n	Passed

The due date for submitting this assignment has passed.
1 out of 1 tests passed.
You scored 100.0/100.

Assignment submitted on 2025-03-06, 13:29 IST
Your last recorded submission was :

```java
import java.util.Scanner;



// Class to store and process an array of numbers
class NumberArray {
    private int[] numbers; // This array will store the numbers given by the user

    // Constructor to initialize the array
    public NumberArray(int[] numbers) {
        this.numbers = numbers;
    }
public int getMin() {
        // Assume the first element is the smallest
        // Return the smallest number found
    int min = numbers[0];
    for(int i: numbers){
      if(i < min){
        min = i;
      }
    }
    return min;
    }
public int getMax(){
 int max = numbers[0];
    for(int i: numbers){
      if(i > max){
        max = i;
      }
    }
    return max;
    }


}
// =========================================================
// Main class to test the NumberArray class
public class W07_4 {
    public static void main(String[] args) {
        Scanner scanner = new Scanner(System.in);

        // Read 5 integers from the user and store them in an array
        int[] arr = new int[5]; // Create an array of size 5
        for (int i = 0; i < arr.length; i++) {
            arr[i] = scanner.nextInt(); // Read numbers from user
        }

        // Create an instance of NumberArray and print max & min values
        NumberArray numArray = new NumberArray(arr);
        System.out.println("Max: " + numArray.getMax() + ", Min: " + numArray.getMin());

        scanner.close(); // Close scanner to free resources
    }
}
```

Sample solutions (Provided by instructor)

```java
import java.util.Scanner;



// Class to store and process an array of numbers
class NumberArray {
    private int[] numbers; // This array will store the numbers given by the user

    // Constructor to initialize the array
    public NumberArray(int[] numbers) {
        this.numbers = numbers;
    }
public int getMax() {
        int max = numbers[0]; // Assume the first element is the largest initially
        for (int num : numbers) { // Loop through all elements in the array
            if (num > max) { // If a number is greater than the current max
                max = num; // Update max to this new larger value
            }
        }
        return max; // Return the largest number found
    }
public int getMin() {
        int min = numbers[0]; // Assume the first element is the smallest
        for (int num : numbers) {
            if (num < min) {
                min = num; // Update min if a smaller number is found
            }
        }
        return min; // Return the smallest number found
    }
}
// =========================================================
// Main class to test the NumberArray class
public class W07_4 {
    public static void main(String[] args) {
        Scanner scanner = new Scanner(System.in);

        // Read 5 integers from the user and store them in an array
        int[] arr = new int[5]; // Create an array of size 5
        for (int i = 0; i < arr.length; i++) {
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        }

        // Create an instance of NumberArray and print max & min values
        NumberArray numArray = new NumberArray(arr);
        System.out.println("Max: " + numArray.getMax() + ", Min: " + numArray.getMin());

        scanner.close(); // Close scanner to free resources
    }
}
```