課題 0401 MaxMinArray

```
package j1.remedial04;
import java.io.*;

public class MaxMinArray {
    public static void main(String[] args)  throws IOException {
        BufferedReader reader =
            new BufferedReader(new InputStreamReader(System.in));
        System.out.print("データの個数はいくつですか: ");
        int n = Integer.parseInt(reader.readLine());
        int[] data = new int[n];
        int max = Integer.MIN_VALUE;
        int min = Integer.MAX_VALUE;

        for(int i=0; i<n; i++){
            System.out.print(i+"番目の整数を入力: ");
            data[i] = Integer.parseInt(reader.readLine());
        }

        for(int i=0; i<n; i++){
            if(data[i]>max)
                max = data[i];
            if(data[i]<min)
                min = data[i];
        }

        System.out.println("最大 = " + max);
        System.out.println("最小 = " + min);
    }
}
```

課題 0402　MaxMinArrayAt

```
package j1.remedial04;
import java.io.*;

public class MaxMinArrayAt {
    public static void main(String[] args) throws IOException{
        BufferedReader reader =
            new BufferedReader(new InputStreamReader(System.in));
        System.out.print("データの個数はいくつですか: ");
        int n = Integer.parseInt(reader.readLine());
        int[] data = new int[n];
        int max = Integer.MIN_VALUE;
        int maxAt = 0;
        int min = Integer.MAX_VALUE;
        int minAt = 0;
        for(int i=0; i<n; i++){
            System.out.print(i+"番目の整数を入力: ");
            data[i] = Integer.parseInt(reader.readLine());
        }

        for(int i=0; i<n; i++){
            if(data[i]>max){
                max = data[i];
                maxAt = i;
            }
            if(data[i]<min){
                min = data[i];
                minAt = i;
            }
        }
        System.out.println("最大 = data[" +maxAt+ "] = " + max);
        System.out.println("最小 = data[" +minAt+ "] = " + min);
    }
}
```

課題 0403 SelectionSort

```
package j1.remedial04;

public class SelectionSort {
    public static void main(String[] args) {
        int[] sample = { 2, 4, 8, 16, 31, 3, 5, 23, 57, 11, 13 };
        m1(sample);
        for (int i = 0; i < sample.length; i++) {
            System.out.print(sample[i] + " ");
        }
        System.out.println();
    }

    public static void m1(int[] a) {
        for (int i = 0; i < a.length; i++) {
            int j = m2(i, a);
            int tmp = a[i];
            a[i] = a[j];
            a[j] = tmp;
        }
    }

    public static int m2(int idx, int[] a1) {
        int tmp = idx;
        for (int i = idx + 1; i < a1.length; i++) {
            if (a1[tmp] < a1[i]) {
                tmp = i;
            }
        }
        return tmp;
    }
}
```

課題 0404 BubbleSort

```
package j1.remedial04;
import java.io.*;
public class BubbleSort {
    public static void main(String[] args)  throws IOException{
        BufferedReader reader =
            new BufferedReader(new InputStreamReader(System.in));
        System.out.print("データの個数はいくつですか: ");
        int n = Integer.parseInt(reader.readLine());
        int[] data = new int[n];
        for(int i=0; i<n; i++){
            System.out.print(i+"番目の整数を入力: ");
            data[i] = Integer.parseInt(reader.readLine());
        }

        boolean changed = true;
        while(changed){
            changed = false;
            for(int i=0; i<=n-2; i++){
                if(data[i]>data[i+1]){
                    int temp = data[i];
                    data[i] = data[i+1];
                    data[i+1] = temp;
                    changed = true;
                }
            }
        }

        for(int i=0; i<n; i++){
            System.out.print(data[i]+" ");
        }
        System.out.println("");
    }
}
```

課題 0405 BubbleSortWithMethods

```
package j1.remedial04;
import java.io.*;

public class BubbleSortWithMethods {
    public static void main(String[] args)  throws IOException{
        int[] data = inputData();
        bubbleSort(data);
        printData(data);
    }

    public static int[] inputData()
    throws IOException, NumberFormatException{
        BufferedReader reader =
            new BufferedReader(new InputStreamReader(System.in));
        System.out.print("データの個数はいくつですか: ");
        int n = Integer.parseInt(reader.readLine());

        int[] data = new int[n];
        for(int i=0; i<n; i++){
            System.out.print(i+"番目の整数を入力: ");
            data[i] = Integer.parseInt(reader.readLine());
        }
        return data;
    }

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```

```
    public static void bubbleSort(int[] data){
        boolean changed = true;
        while(changed){
            changed = false;
            for(int i=0; i<=data.length-2; i++){
                if(data[i]>data[i+1]){
                    int temp = data[i];
                    data[i] = data[i+1];
                    data[i+1] = temp;
                    changed = true;
                }
            }
        }
    }

    public static void printData(int[] data){
        for(int i=0; i<data.length; i++){
            System.out.print(data[i]+" ");
        }
        System.out.println("");
    }
}
```