

Array Processing and Examples – Part I

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Objectives

- To program common array operations (§7.2.6) – several building blocks for problem solving using arrays
 - displaying arrays,
 - summing all elements, computer average
 - counting elements

Processing Arrays

- Initializing arrays with input values
- Initializing arrays with random values
- Printing arrays
- Summing all elements
- Computing average
- Counting the elements

Initializing arrays with input values

```
java.util.Scanner input = new java.util.Scanner(System.in);  
System.out.print("Enter " + myList.length + " values: ");  
for (int i = 0; i < myList.length; i++) {  
    myList[i] = input.nextDouble();  
}
```

Initializing arrays with random values

```
for (int i = 0; i < myList.length; i++) {  
    myList[i] = Math.random() * 100;  
}
```

Printing arrays

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

Summing all elements

```
double total = 0;  
for (int i = 0; i < myList.length; i++) {  
    total += myList[i];  
}
```

Counting Elements

```
double number = 10.0;
```

```
int count = 0;
```

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

```
    if (myList[i] > number) count++;
```

```
}
```


Computing Average - 1 of 2

```
double total = 0;
```

```
int count = 0
```

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

```
    total += myList[i];
```

```
}
```

```
double average = total / myList.length;
```

```
// any logical error in this example?
```

Computing Average - 2 of 2

```
double threshold = 10.0;
double total = 0;
int count = 0;
for (int i = 0; i < myList.length; i++) {
    if (myList[i] > threshold {
        total += myList[i];
        count ++;
    }
}
if (count > 0) double average = total / count;
else // what do we do?
```

Questions?

- Initializing arrays with input values
- Initializing arrays with random values
- Printing arrays
- Summing all elements
- Computing average
- Counting the elements