

# Total, Average, Min and Max of a series of numeric values

University of Mount Union

CSC 120

Lecture 23

Write Java code to find the sum of these values:

- 14
- 6
- 12
- 7

Java code to find the sum of four values:

```
Integer total = 0;
```

```
total = 14 + 6 + 12 + 7;
```

Related problem: write Java code to find the sum of a series of values to be entered by the user:

- ... and you can't store them all in separate variables in memory
- (because you don't know how many values there will be)

Add up these values:

1111

Add up these values:

1234

Add up these values:

2222

Add up these values:

111

Add up these values:

11

What was the total?

If we don't know how many values there will be, how can we do this?

- The only thing we can do is to keep track of the total for the numbers we have seen **SO FAR** !!!
- Then, after we've seen the last value, that running total will be the final total

# Keeping a running total of the values entered by the user

- What is the starting value of total, before we've seen any actual values?

# Keeping a running total of the values entered by the user

- What is the starting value of total, before we've seen any actual values?
- total should start as zero!

# Keeping a running total of the values entered by the user

- First value in series: 1111
- total was zero, so now it should be  $0 + 1111 == 1111$

# Keeping a running total of the values entered by the user

- Next value in series: 1234
- total was 1111, so now it should be  $1111 + 1234 == 2345$

# Keeping a running total of the values entered by the user

- Next value in series: 2222
- total was 2345, so now it should be  $2345 + 2222 = 4567$

# Keeping a running total of the values entered by the user

- Next value in series: 111
- total was 4567, so now it should be  $4567 + 111 == 4678$

# Keeping a running total of the values entered by the user

- Next value in series: 11
- total was 4678, so now it should be  $4678 + 11 == 4689$

What about finding the largest or the smallest value in a series of values entered by the user?

- Don't know what values will be added in the future
- Must keep track of the max or min that has been seen SO FAR !!!
- Interesting issue: what should the starting value of the max or min be?

What about finding the largest or the smallest value in a series of values entered by the user?

- Don't know what values will be added in the future
- Must keep track of the max or min that has been seen SO FAR !!!
- Interesting issue: what should the starting value of the max or min be?
  - `max = Integer.MIN_VALUE;`
  - `min = Integer.MAX_VALUE;`

# largest or smallest value in a series

- ```
if ( latestValueInSeries > max ) {  
    max = latestValueInSeries;  
}  
  
if ( latestValueInSeries < min ) {  
    min = latestValueInSeries;  
}
```

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