Extreme Values

An ==extreme value== **is the largest or smallest in a sequence of values. Here's the** algorithm for largest. The algorithm for smallest is similar:

```
largest <- first item
examine each item in the collection
    if the current item is larger than largest then
        largest <- current item
```

Here's an application of this algorithm which finds the highest temperature in the readings you saw before:

```cpp
auto largest = temperatures.front();
for (auto current : temperatures)
{
    if (current > largest)
    {
        largest = current;
    }
}
```

This will ==fail== if there are no items in `temperatures`; you should **guard the loop** with an `if`. Also, using the range-`for` loop is slightly less efficient than it could be, since it examines the first element twice. Using a traditional counter-controlled `for` loop is only slightly more efficient.

If you are finding the ==largest for a condition==, then the element found at the `front()` will not necessarily be the largest. Instead, set `largest` to ==a very small value== and check both your condition and for `largest` in the `if` statement.