COMP 1406: Array Problems

Finding the mode

Working with non-scalar arrays

Finding the Mode

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In statistics, the mode of a set of values is the value that appears most often. Write code that processes an array of survey data, where survey takers have responded to a question with a number in the range 1-10, to determine the mode of the data set. For our purpose, if multiple modes exist, any may be chosen.
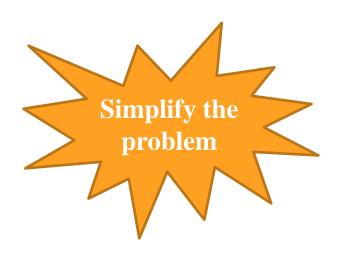
What is the mode in this array?

```
const int ARRAY_SIZE = 12;
int surveyData[ARRAY_SIZE] =
    {4, 7, 3, 8, 9, 7, 3, 9, 9, 3, 3, 10};
```

How can we automatically find the mode? Can we search the array sequentially?

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What if the array is sorted?

Simplify the problem

Non-Scalar Arrays

Characters and Health

Suppose we want to store information about characters in a simple game where health is involved. How should we store information about multiple characters? What functions do we need to work with the data?

We should be able to store all information about a character in a single variable.

```
struct character
{
    string name;
    int hitPoints;
    int maxHitPoints;
};
```

We need to store multiple characters easily.


```
character characterArray[ARRAY_SIZE];
```

Functions that change data in the struct need to pass by reference.

```
void healCharacter(character & characterToHeal,
                   int health)
{
  // …
}
```