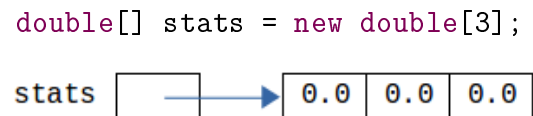
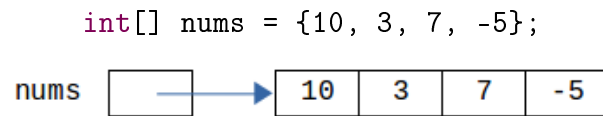


# Model 1 Array Diagrams

Array elements are stored together in one contiguous block of memory. To show arrays in memory diagrams, we simply draw adjacent boxes.



## Questions (15 min)

Start time:

1. What is the default value for array elements?

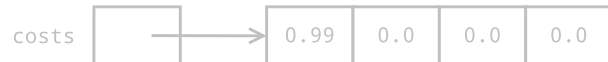
Zero or equivalent value, depending on the data type. For numeric types like `int` and `double`, the default is 0; for `boolean`, it's `false`; for `char`, it's `'\u0000'`; for reference types, it's `null`.

2. Draw a memory diagram for the following arrays. (*Hint: You should have no empty boxes.*)

a) `int[] sizes = new int[5];`  
`sizes[2] = 7;`



b) `double[] costs = new double[4];`  
`costs[0] = 0.99;`



c) `String[] names = {"Anita"};`



3. Like strings, arrays are reference types. What is the *value* of an array variable?

An integer representing the memory location of the array.

4. Does the statement `int[] copy = nums;` create a new array? Justify your answer.

No. If you assign one array variable to another, you're only copying the reference, not the array itself.

5. Draw a memory diagram of the following array. (*Hint: You should have four arrows.*)

```
String[] greek = {"alpha", "beta", "gamma"};
```

