Intro to Arrays

Mr. Neat
Java

How many variables in a program before it gets too hard to perform the operation?

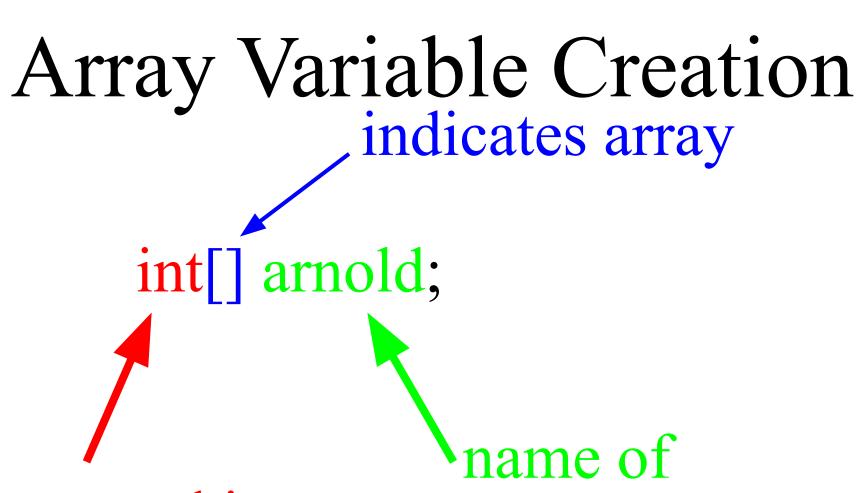
- averaging 3 scores (3 variables?)
- averaging 10 scores (10 variables?)
- averaging 100 scores (100 variables?)

New Topic: Ta Da

Array: one variable, refers to a whole group values of the same type

Array Definition

- list of values of the same type stored in one variable
- each value in the list is an element
- the array is just one variable (array variable)
- the array variable initially has no elements
- assign number of elements with "new"
- each element initially has no value



type stored in array

array

Array Variable: Set the Size

variablename = new type[#elements]

```
reserved word
(constructs)
arnold = new int[100];
```

Note: This command constructs the array.

Array Variable: Set the Size

arnold = new int[100];

In words:

The array arnold holds 100 integers

Array Variable: Get the Size

System.out.print(arnold.length);

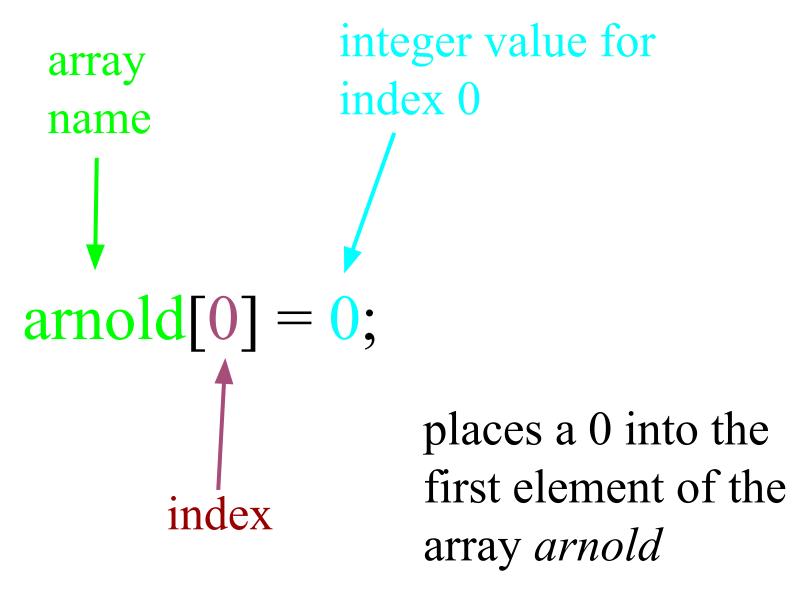
Note: have to set the size before you can get the size

Array Variable: Learn to Start from zero

- array elements start at zero
- access each element with []

-"Ok, on the count of three. Ready? Zero, one, two!"

Let's fill arnold with zero's



Array Variable: Setting Element Values

```
arnold[0] = 0;
arnold[1] = 0;
arnold[2] = 0;
arnold[3] = 0;
.../all the way to 99
```

but what have we gained?

...NOTHING,...yet!

but wait, there's more...

Array's Besty...a loop!

Array Variable: Setting Element Values

```
int[] arnold;
int count;
arnold = new int[100];
count = 0;
while(count < arnold.length)
  arnold[count] = 0;
  count = count + 1;
```

Array Variable: Accessing each element

How would we output the tenth element of arnold?

System.out.println(arnold[9]);

Lab

- Make 100 Rectangles
- dimension:
 - width = 50
 - height = 100
- place each at a random (x,y)

Lab Hints

- Instead of making an array of ints, make an array of Rectangles
- Use a while loop to fill the array
- For an array called *r*, the tenth Rectangle would be: r[9]