

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

Array Variable Creation

indicates array

```
int[] arnold;
```

type stored in
array

name of
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
name

integer value for
index 0

arnold[0] = 0;

index

places a 0 into the
first element of the
array *arnold*

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]