

COMP 1010- Summer 2015 (A01)

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Example::

In this example, we will

- create an array in a function, and return it
- modify an array in a function
- send multiple arrays to a function

Make a random collection of dots that you can steer with the keyboard

Create a function `newRandomArray` that takes an `n`, the number of bins, and `max`, the largest value

- creates the array
- fills with random values
- returns the array

Use it in `setup` to set globals for `x` and `y` points

Next..

Make a function `drawPoints` that takes `x`, and `y` arrays, and draws the points

Takes arrays and uses them

next

Make a function, `addToArray`, that takes an array and an integer value, and adds that value to every bin

This modifies the array in the function

In draw:

- if mouse pressed, new random arrays

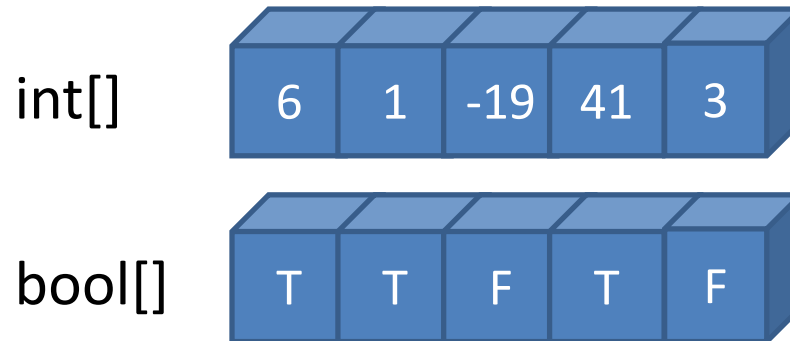
- if key pressed, check for u,d,l,r and move

Techniques with Arrays

partially filled arrays

partially filled arrays

note: when you first create an array, the default data is generally useless to you: you need to put data into the array

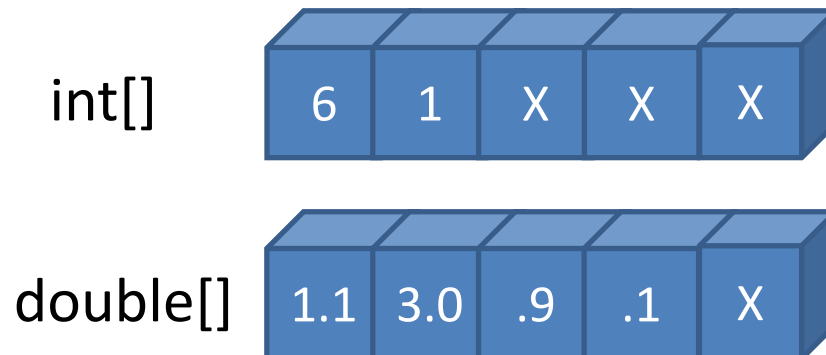


until now, all of our arrays were fully populated immediately

partially filled arrays:

note: a **partially filled array** is an array that has data in some bins but not in others.

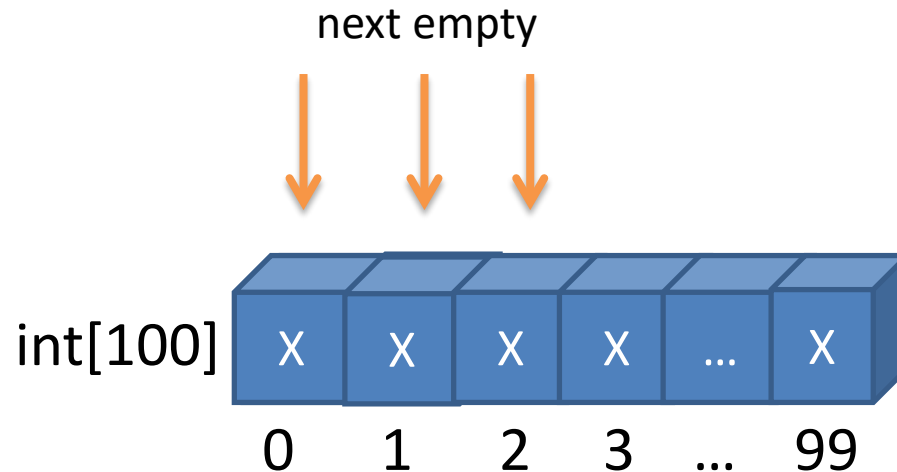
the challenge becomes identifying which bins have data, and which do not.



simple technique for filling up an array

go left to right,

keep a pointer to the next empty spot



use pointer each time to decide where to put the next element

Example: keep track of mouse path

Make arrays of x,y points that keep track of a mouse path. If the mouse is pressed, store the mouse location in the array

Draw the path with a random color

Setup partially filled arrays – actual arrays, and pointer to beginning

Adding to array

- Update pointer to next empty bin
- Make sure we don't run off the end

Make a function:

take the x and y arrays, the current NEXT spot,
and the data to add

return the NEW next spot

Using the array – draw the lines

- Don't use the array length! We need to know how many bins are valid

Erasing the array

- Just reset the pointer, no need to actually trash the data

Random color

On key press