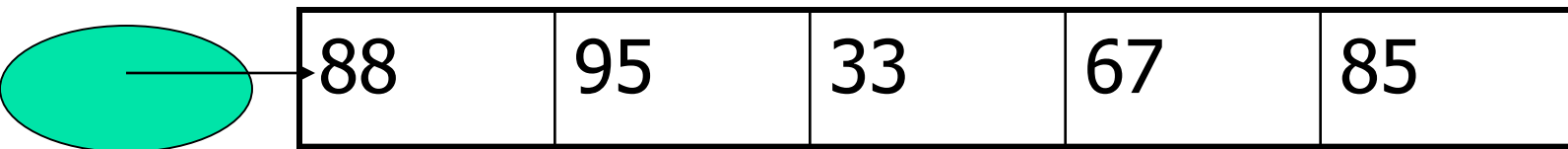




Arrays

- An array is a data structure in which we store a collection of data items of the same type.
- Arrays have a single variable name associated with the entire collection.
- Array of scores:

scores





Arrays

- Arrays are stored in consecutive memory locations in main memory.
- We can pass entire arrays to methods
- We can access the individual array elements.
- We can process the individual elements like other simple variables.



Array “slicing” in different languages

Slicing [\[edit \]](#)

The following list contains syntax examples of how a range of element of an array can be accessed.

In the following table:

- `first` - the index of the first element in the slice
- `last` - the index of the last element in the slice
- `end` - one more than the index of last element in the slice
- `len` - the length of the slice (= `end - first`)
- `step` - the number of array elements in each (default 1)



Array “slicing” in different languages continued

Format	Languages
<code>name[first:last]</code>	ALGOL 68, ^[5] Julia
<code>name[first:end:step]</code>	Python, ^{[6][7]} Go
<code>name[first..last]</code>	Pascal, Object Pascal, Delphi
<code>\$name[first..last]</code>	Windows PowerShell
<code>@name[first..last]</code>	Perl ^[8]
<code>name[first..last]</code> <code>name[first...end]</code> <code>name[first, len]</code>	Ruby ^[7]
<code>name(first..last)</code>	Ada ^[5]
<code>name(first:last)</code>	Fortran, ^{[5][6]} GNU Octave, MATLAB ^{[5][8]}
<code>name[[first;;last]]</code>	Mathematica, ^{[5][6][7]} Wolfram Language



Array tidbit – start at 0 or 1?

- Which language's array index starts at 0?

Most popular languages start with 0. For example, C, [Perl](#), [Python](#), [Ruby](#), [Java](#), [Emacs Lisp](#), [JavaScript](#).

- Which language's array index starts at 1?

Most math-oriented programming languages start at 1: [FORTRAN](#), [SASL](#), [MATLAB](#), [Julia](#), [Mathematica](#), [Smalltalk](#), [Lua](#), [Erlang](#), [APL](#) (default to 1, can be 0.).

Interesting discussion at http://xahlee.info/comp/comp_lang_array_index_start_0_or_1.html