
Arrays

IST 256

Application Programming for Information Systems

Arrays

- Give one name to a group of values.
 - In this example, the name of the array is “data” and the values are integers.

data	7
	4
	0
	23
	-5
	14

The elements are numbered starting from 0:

data [0] (element value is 7)
data [1] (is 4)
data [2] (is 0)
...

Array Declarations

type of elements array name (same rules as other variable names)

Declaration with allocation
String [] students = new String [25];

number of elements

Declaration (without allocation)

int [] age;

Another declaration

double [] price = new double [10];

Declaration with initialization

int [] codes = { 4011, 4080, 4549, 4788 }

(an array with 4 elements)

Using elements

- Given an array declaration

```
double [ ] amounts = new double [ 25];
```

the valid subscripts to use elements of this array are from 0 to 24 (i.e. from 0 to one less than the number of elements)

- Array elements can be used in expressions

```
tax = amounts[5] * .0825;
```

← Gets the value of amounts[5]

```
amounts[5] = oldprice;
```

← Assigns a new value to amounts[5]

Loop over all array elements

- It is quite common to write a for loop to access every element of an array.
- This can use the length property of the array

// assigns the numbers from 1 to the array length to the elements

```
for (int index = 0; index < amounts.length; index++)  
{  
    amounts[index] = index + 1;  
}
```