

# COMPUTER PROGRAMMING

## ARRAYS

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- ❑ **Defining Arrays**
- ❑ **Systematic arrangement of objects, usually in rows and columns.**

An array is a collection of values stored in a single variable. Unless you DIM them, they are limited to 10 elements on each dimension.

```
DIM myArray(15) AS INTEGER
```

An array isn't restricted to one dimension

```
DIM MyMultiArray(25,25) AS STRING
```

# DEFINING ARRAYS

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**DIM** statement is used for specifying ARRAYS.  
Following is the syntax

```
DIM variable [ (subscripts) ] [AS type]  
[ , variable [ (subscripts) ] [AS type] . . .
```

**variable** is a BASIC variable name.

**subscripts** The dimensions of the array. Multiple dimensions can be declared.

**subscripts** The dimensions of the array. Multiple dimensions can be declared.

**AS type** Declares variable to be an elementary or user-defined type. The elementary types are INTEGER, LONG, SINGLE, DOUBLE and STRING (variable or fixed).

# DEFINING ARRAYS

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Subscripts in DIM statement have the following form:

**[lower TO] upper [, [lower TO] upper] ...**

The TO keyword provides a way to indicate both the lower and the upper bounds of a array's subscripts. The following statements are equivalent (if there is no OPTION BASE statement)

**DIM A (8, 3)**

**DIM A (0 TO 8, 0 TO 3)**

**DIM A (8, 0 TO 3)**

With the TO keyword, you are no longer restricted to positive subscripts. You can specify any range of subscripts from -32,768 to 32,767.

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# DEFINING ARRAYS

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If you use an array in your program without including the array in a DIM statement, the maximum value of each subscript of the array is 10. If you use a subscript that is greater than the specified maximum, an error message appears that says **“Subscript out of range.”**

```
CLS
```

```
For I = 1 to 100
```

```
Print a(I)
```

```
Next I
```

**No DIM, array size cant be more than 10**

**NOTE: Option Base 1 (total 10 in size)**

**Option Base 0 (total 11 in size)**

# DEFINING ARRAYS

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The DIM statement initializes all elements of numeric arrays to zero and all elements of string arrays to null strings. The fields of record variables are initialized to zero, including fixed-string fields. The maximum number of dimensions allowed in a DIM statement is 60.

If you try to dimension any array variable with DIM statement after you have referred to the array, an error message results that reads “Array already dimensioned.”

It is good programming practice to put required DIM statement at the beginning of a program, outside of any loops.

END OF LECTURE