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COMPUTER PROGRAMMING

ARRAY-2

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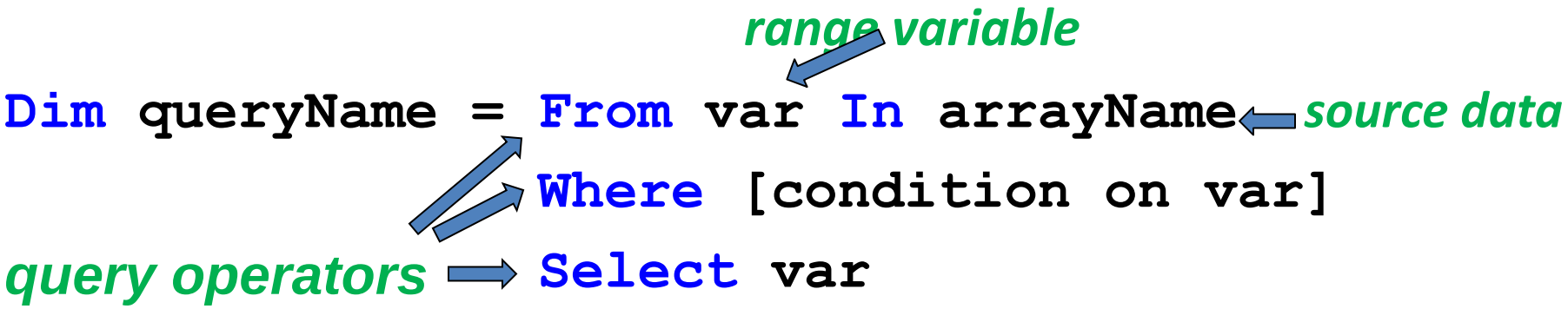
Using LINQ with Arrays

What is LINQ?

- LINQ stands for **L**anguage **IN**tegrated **Q**uery
- A **query** is a request for information.
- The values in the sequence can be converted to an array, displayed in a list box, or written to a text file.

LINQ Query

Code of the form



declares the variable *queryName* and assigns to it a sequence of the values from *arrayName* that satisfy the stated condition.

Using other Built-in Properties of Query

Let's modify Exercise 31

Replace the For Each loop in BeamForce example with:

lstForce.Items.Add(BeamForceQuery.Count)
lstForce.Items.Add(BeamForceQuery.Min)
lstForce.Items.Add(BeamForceQuery(1))

Replace the For Each loop in States example with:

lstForce.Items.Add(BeamForceQuery.Count)
lstForce.Items.Add(BeamForceQuery.Min)
lstForce.Items.Add(BeamForceQuery(1))

Arrays Query Other Properties (Sorting)

- Sorts string values into alphabetical order (either ascending or descending)
- Sorts numbers into numeric order (either ascending or descending)

```
Example:
Dim nums() As Integer = {3, 6, 4, 1}
Dim numQuery = From num In nums
               Order By num Ascending
               Select num
For Each n As Integer In numQuery
  lstOutput.Items.Add(n)
Next
```

Output:

```
1
3
4
6
```

Arrays Query Other Properties (Sorting)

```
Dim nums() As Integer = {5, 8, 2, 9}
Dim numQuery = From num In nums
               Order By num Ascending
               Select num
For Each n As Integer In numQuery
  lstOutput.Items.Add(n)
Next
```

Output:

```
2
5
8
9
```

Arrays of Structures

A structure is a grouping of heterogeneous data.

Also called a UDT (User Defined Type)

Sample structure definition:

```
Structure Nation
   Dim name As String
   Dim continent As String
   Dim population As Double
   Dim area As Double
End Structure
```

Structure Definition

Each subvariable in a structure is called a **member.**

To declare a variable of a structure type:

```
Dim country As Nation
```

Each member is accessed via

variableName.memberName

```
country.continent = "Asia"
```

This is very useful when you need to create your own data structure