

Creating an Array of Objects

- Can create an entire array of object variables
 - Declare an array whose type is a class
 - Instantiate an object for each element

```
' Declare the array
Dim mathStudents(9) As Student
Dim i As Integer
For i = 0 To 9
    ' Assign each element to an object
    mathStudents(i) = New Student()
Next i
```



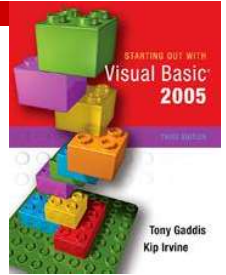
Objects As Procedure Arguments

- Can use object variables as arguments to a sub or function
 - Example: student object `s` as an argument

```
Sub DisplayStudentGrade (ByVal s As Student)
    ' Displays a student's grade.
    MessageBox.Show("The grade for " & _
        s.FirstName & " " & s.LastName & _
        " is " & s.TestGrade.ToString)
End Sub
```

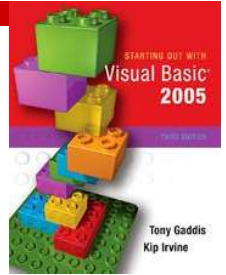
- Pass object variable with the procedure call

```
DisplayStudentGrade (freshman)
```



Objects Passed ByVal and ByRef

- If argument is declared using *ByRef*
 - Values of object properties may be changed
 - The original object variable may be assigned to a different object
- If argument is declared using *ByVal*
 - Values of object properties may be changed
 - The original object variable may **not** be assigned to a different object



Functions Can Return Objects

- Example below instantiates a student object
- Prompts for and sets its property values
- Then returns the instantiated object

```
Dim freshman As Student = GetStudent()
```

```
...
```

```
Function GetStudent() As Student
```

```
    Dim s As New Student()
```

```
    s.FirstName = InputBox("Enter the first name.")
```

```
    s.LastName = InputBox("Enter the last name.")
```

```
    s.IdNumber = InputBox("Enter the ID number.")
```

```
    s.TestAverage = InputBox("Enter the test average.")
```

```
    Return s
```

```
End Function
```