Fundamentals of Programming in VB (Continue II)

- Built-In Functions:
  - Math.Sqrt
  - Int
  - Math.Round

Built-in Functions

- Functions *return* a value

  Math.Sqrt(9) returns 3

  Int(9.7) returns 9

  Math.Round(2.7) is 3

Integer Data Type

- Variables of type Double can be assigned both whole numbers and numbers with decimals.

- The statement

  ```
  Dim varName As Integer
  ```

  declares a numeric variable that can only

  be assigned whole number values

  between about -2 billion and 2 billion.

Multiple Declarations

```
Dim a, b As Double
```

Two other types of multiple-declaration statements are

```
Dim a As Double, b As Integer
Dim c As Double = 2, b As
                    Integer = 5
```

Parentheses

- Parentheses should be used liberally in numeric expressions.

- In the absence of parentheses, the operations are carried out in the following order: ^, * and /, + and -.

Three Types of Errors

- Syntax error
- Run-time error
- Logic error

Some Types of Syntax Errors

- Misspellings

  `lstBox.Itms.Add(3)`

- Omissions

  `lstBox.Items.Add(2 + )`

- Incorrect punctuation

  `Dim m; n As Integer`

A Type of Run-time Error

- Overflow error

```
Dim numVar As Integer = 1000000
numVar = numVar * numVar
```

A Logical Error

```
Dim average As Double

Dim m As Double = 5

Dim n As Double = 10

average = m + n / 2
```

Value of *average* will be 10. Should be 7.5.