Visual Basic Objects, Events, and Numbers

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Visual Basic Objects

- *Forms*: Windows style screens with boxes and buttons
- *Controls*:
  - *Boxes*, into which users type information
  - *Buttons* that users click

Visual Basic Events

Events are actions by user, such as

- Clicking a control
- Pressing a key

Visual Basic Numbers

- Integer
  - Decimal: 20
  - Octal: &O24
  - Hexadecimal: &H14
- Floating-point decimal
  - 150.7003
  - 1507003*10^-4
  - 1.507003E+2

Variables

- Variables can be declared using the Dim statement of the format

  Dim *variablename* [As *type*]

  Example:

  Dim SFont

Fundamental Data Types

Type name	Description	Range
Integer	2-byte integer	-32,768 to 32,767
Long	4-byte integer	-2,147,483,648 to 2,147,483,647
Single	4-byte floating-point number	-3.402823E38 to -1.401298E-45, 1.401298E-45 to 3.402823E38
Double	8-byte floating-point number	-1.7976931348623 2D308 to -4.940656458412 47D-324, 4.940656458412 47D-324 to 1.7976931348623 2D308
Currency	8-byte number with fixed decimal point	-922337203685477.5808 to 922337203685477.5807
String	String of characters	0 to 65535 characters
Variant	Date/time, floating-point number, or string	Date values: January 1, 0000 to December 31, 9999

Declaration Of Variables With Types

Examples:

```
Dim I As Integer
Dim amt As Single
Dim precision As Double
Dim phrase As String
Dim statementBalance As Currency
```

Arithmetic Operations

Operation	Mathematical Notation	Visual Basic Notation
addition	$a+b$	a+b
subtraction	$a-b$	a-b
multiplication	$a \cdot b$ or $a \times b$	a*b
division	a/b or $a:b$	a/b
exponentiation	a^r	a^r

Level Of Precedence For Arithmetic Operations

The operations in the upper rows have priority over those in the lower rows:

()	Inner to outer, left to right
^	Left to right in expression
* /	Left to right in expression
+ -	Left to right in expression

Errors

- Syntax errors
- Run-time errors
- Logical (conceptual) errors

Steps To Creating a Visual Basic Program

1. Create the interface; that is, generate, position, and size the objects
2. Set properties; that is, configure the appearance of the objects
3. Write the code that executes when events occur

Assignment Statements

txtPhrase.Font.Size = 8

timeElapsed = 14 - 2

Printing in a Picture Box

```
picResults.Cls
picResults.Print timeElapsed
```