Data Types in QBasic:

The computer can hold data in memory. The programmer must tell the computer what type of data to hold. This is called a data type.

STRING: A variable length string variable.

Example of a String Data Type: This line is an example of a string

INTEGER: 16-bit signed integer variable. 2^{16} = 65,536 ***bits***

Non-floating-point numbers from -32,768 to 32,767

Examples of an Integer Data Type: 67, -34, -100, 203, 1022, -1, 0

LONG: 32-bit signed integer variable. 2^{32} = 4,294,967,296 ***bits***

Non-floating-point numbers from -2,147,483,648 to 2,147,483,647

Examples of a Long Data Type: 560005, 3, -2, 0, -867000, 14, 8, -10

SINGLE: A single-precision 32-bit floating point variable. 2^{32} = 4,294,967,296 ***bits***

Floating-point numbers from -3.37x10^38 to 3.37x10^38

Examples of a Single Data Type: 4.3, 25.4567, -35.87, 0.35, -3.14

DOUBLE: A double-precision 64-bit floating point variable. 2^{64} = 18,446,744,073,709,551,616 ***bits***

Floating-point numbers from -1.67x10^308 to 1.67x10^308

Examples of a Double Data Type: 745663.90596, -98.12, 4859903.094491

Variables:

- Hold Data In Memory
- Are Assigned A Data Type
- The Data Can Change Throughout The Program's Operation
- The Data Entered Must Be The Same Data Type As Assigned To The Variable

Variables are a name that is given to the data. The name must not start with a number or character that is not a letter. Also, the name of the variable must not be a reserved name like `PRINT`, `INPUT`, `LET`, `ABS`, `BEEP`, etc.

There are two ways to declare a variable in QBasic.

The first is to put a data type symbol after the name

$ - String

% - Integer

& - Long

! - Single

 # - Double

Examples:

myName$

num1%

num2!

answer!

The second way is the preferred way since Visual Basic uses this method. Becoming accustomed to this way will help the transition from QBasic to Visual Basic. **DIM** is used to make variables of a data type.

DIM [Variable Name] As Data Type:

DIM [Variable Name] **AS STRING**

DIM [Variable Name] **AS INTEGER**

DIM [Variable Name] **AS LONG**

DIM [Variable Name] **AS SINGLE**

DIM [Variable Name] **AS DOUBLE**

DIM [Variable Name] **AS _INTEGER64**

DIM [Variable Name] **AS _FLOAT**

Examples:

```
DIM myName AS STRING

DIM num1 AS INTEGER

DIM num2 AS SINGLE

DIM answer AS SINGLE
```

Remember that selecting the right data type for the variable is very important to make the program run properly.