Length Conversions in DLL file

1 Introduction:

The conversion DLL file of unit Length is written in C/C++ programming language style, and do not require any extra code in using this DLL file. This DLL file includes 2 functions to handle the Length conversions as follow:

```
double LP_UnitConversionsLength_GetLeftValue (char* LeftUnit, char* RightUnit, double RightValue)  ;
double LP_UnitConversionsLength_GetRightValue(char* LeftUnit, char* RightUnit, double LeftValue )  ;
```

In Visual Basis, you can identify these functions with the code:

```
Declare Function LP_UnitConversionsLength_GetLeftValue Lib "LP_UnitConversionsLength.dll" _
(ByVal LeftUnit As String, ByVal RightUnit As String, ByVal RightValue As Double) As Double


Declare Function LP_UnitConversionsLength_GetRightValue Lib "LP_UnitConversionsLength.dll" _
(ByVal LeftUnit As String, ByVal RightUnit As String, ByVal RightValue As Double) As Double
```
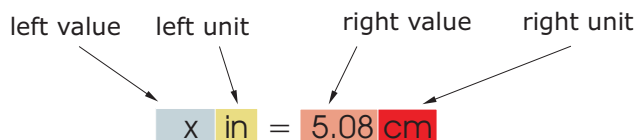
2 Problems in Length conversion

The two functions in DLL file are used to handle all Length conversions in two problems.

Problem 1   The unknown value is on the **left hand side** of equation

This problem in conversion is described in the figure:

The value x is obtained by either one of two methods:

- Method A : The code is :

```
Dim x As Double
x = LP_UnitConversionsLength_GetLeftValue("Inch", "Centimeter", 5.08)
```

- Method B : The code is :

```
Dim LeftUnit, RightUnit As String
LeftUnit = "Inch"
RightUnit = "Centimeter"

Dim RightValue As Double
RightValue = 5.08

Dim x As Double
x = LP_UnitConversionsLength_GetLeftValue(LeftUnit, RightUnit, RightValue)
```
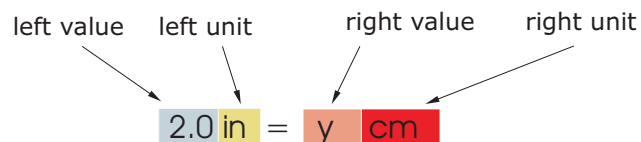
Problem 2   The unknown value is on the **right hand side** of equation

This problem in conversions is described in the figure:

The value y is obtained by either one of two methods:

- Method A : The code is :

```
Dim y As Double
y = LP_UnitConversionsLength_GetRightValue("Inch", "Centimeter", 2.0)
```

- Method B : The code is :

```
Dim LeftUnit, RightUnit As String
LeftUnit = "Inch"
RightUnit = "Centimeter"

Dim LeftValue As Double
LeftValue = 2.0

Dim y As Double
y = LP_UnitConversionsLength_GetRightValue(LeftUnit, RightUnit, LeftValue)
```
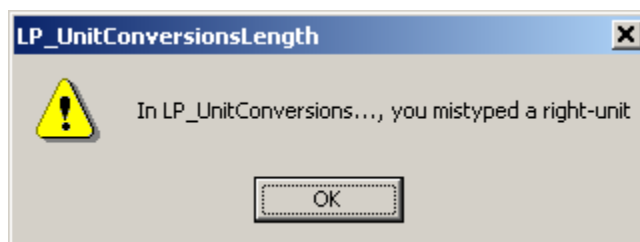
3 Unit names in Length conversions

You can choose the unit name (case sensitive) in the following table for parameters, LeftUnit and/or RightUnit

Millimeter	Angstrom
Centimeter	Nanometer
Meter	Micron
Kilometer	Micrometer
Inch	Mil
Foot	ComputerPoint
Yard	Chain
Mile	Rod

When your unit name is not in this table, the returns of functions are -1 and the error message will issue as shown in the following figures:

or

4   Tip

1. The parameters in two functions have the same order of unit name (LeftUnit is first and RightUnit is second) and the last parameter is the known value.

2. Use function LP_UnitConversionsLength_GetLeftValue(..)   if your **unknown** value is on the **left hand side** of the equation.

3. Use function LP_UnitConversionsLength_GetRightValue(..) if your **unknown** value is on the **right hand side** of the equation.