**Multiple Choices Algorithm**

**Another in the *Fun with Algorithms* series**

Stuff Pty Ltd sells stuff. The unit cost of the stuff varies according to the quantity ordered. Customers can order any number of items. Stuff Pty Ltd use this scale:

1-9 items = $100 each

10-19 items = $97 each

20-29 items = $92 each

30-39 items = $88 each

40-49 items = $85 each

50 or more = $82 each

Task: using pseudocode, create an algorithm to calculate the unit cost of the items at different quantities. Then calculate a total cost with 10% GST added.

Convert the pseudocode into code.

Create test data to fully test all aspects of the solution’s functionality.

Note: Input data need not be validated, and the interface can be very basic.

**Sample VB2010 solution**

Public Class Form1

 ' Multiple options algorithm

 ' by M.Kelly 10 May 2011

 ' Version 1.0

 ' To Do Next: nil

 Private Sub btnCalc\_Click(ByVal sender As System.Object, ByVal e As System.EventArgs) Handles btnCalc.Click

 Dim Qty As Integer = CInt(txtQty.Text)

 Dim inctax As Single = 0 'declare and initialise in one hit

 ' deliberately lacks validation of qty

 Select Case Qty

 Case 1 To 9

 lblCostper.Text = 100

 Case 10 To 19

 lblCostper.Text = 97

 Case 20 To 29

 lblCostper.Text = 92

 Case 30 To 39

 lblCostper.Text = 88

 Case 40 To 49

 lblCostper.Text = 85

 Case Else

 lblCostper.Text = 82

 End Select

 lblSubtotal.Text = Qty \* CInt(lblCostper.Text) 'using labels for output

 'inctax is here as a sample use of variables for calculations and

 'using labels just for display purposes.

 'Using variables mean less converting back & forth between text and number.

 inctax = CInt(lblSubtotal.Text) \* 1.1 'add GST

 'The final total is nicely formatted currency just to show how it's done.

 'Nice formatting is not needed in U3O2.

 lblIncTax.Text = Format(inctax, "$#,####.#0")

 End Sub

 Private Sub Button1\_Click(ByVal sender As System.Object, ByVal e As System.EventArgs) Handles Button1.Click

 End

 End Sub

End Class

**Sample output**

Perhaps more decorative that it needs to be for U3O2, but I can’t abide messy interfaces.

