

```
Public GETOPTION_RET_VAL As Object 'Passed back to the function from the UserForm
```

```
Private Function Item_Duplicate_Check(theFindItem As String, theHTSCounter As Long) As Integer
```

```
    Dim htsCounter As Long
```

```
    htsCounter = theHTSCounter + 1 '' so we dont go back through and search previously searched rows (+1 is so we dont re-register the start of recursion again)
```

```
    Dim duplicateCounter As Integer '' counter to register duplicates
```

```
    duplicateCounter = 0
```

```
    Dim findItem As String '' item we are actually looking for
```

```
    findItem = theFindItem
```

```
    ''searching through HTS Code List to find the current item number from Invoice (while rows not blank, and while recursive loop has not been started)
```

```
    ''once the recursion has started, we eliminate the need to look further for the nth occurrence of findItem
```

```
    While ((Sheets("HTS Code List").Cells(htsCounter, 3) = "" And Sheets("HTS Code List").Cells(htsCounter, 4) = "" And Sheets("HTS Code List").Cells(htsCounter, 12) = "") And (duplicateCounter = 0))
```

```
        ''recursively checking through to see if there are duplicates of item number
```

```
        If (Sheets("HTS Code List").Cells(htsCounter, 3) = findItem) Then
```

```
            ''at this point, there are duplicates present. we just need to find all of them and kick back notice to upper loops
```

```
            duplicateCounter = 1 + Item_Duplicate_Check(findItem, htsCounter)
```

```
        'Dim Ops(1 To 12) As String '' going to need to have all of the suppliers listed here
```

```
        '' Create an array of month names
```

```
        'For i = 1 To 12
```

```
            'Ops(i) = Format(DateSerial(1, i, 1), "mmm")
```

```
        'Next i
```

```
        'UserChoice = GetOption(Ops, 1, "Select a month")
```

```
        'If UserChoice <> False Then MsgBox UserChoice
```

```
        'GETOPTION_RET_VAL should be equal to the name of the supplier that should be used
```

```
    Else
```

```
        duplicateCounter = 0
```

```
    End If
```

```
    htsCounter = htsCounter + 1
```

```
End While
```

```
Item_Duplicate_Check = duplicateCounter
```

```
End Function
```

```
Private Sub TotalButton_Click()
```

```
    Call ClearTotals() ''clear worksheet
```

```
    Call Delete_Blank HTS_Rows() ''delete all blank rows from hts list
```

```
    ''arrays to hold final values to be displayed on worksheet
```

```
    Dim theHTSCode(20) As String
```

```
    Dim theItemNumbers(20) As String
```

```
    Dim theHTSTotals(20) As Double, theHTSQuantity(20) As Double
```

```
    Dim theAVHTS(8) As String
```

```
    Dim theAVItemNumber(8) As String
```

```
    Dim theAVTotal(8) As Double, theTotal As Double, theFinalTotal As Double
```

```
    Dim rowCount As Integer, k As Integer, l As Integer, m As Integer, n As Integer
```

```
    Dim theInvalidSetList As String, isInvalid As Boolean
```

```
    Dim searchRange As Range, theRange As Range, theHTSRange As String, theItemNumberRange As String, theTotalChargeRange As Double
```

```
    Dim theAVRange As String, theErrorList As String
```

```

Dim theRow As Integer, thePlaceRow As Integer, theSecondPlaceRow As Integer, theSetPlaceRow As Integer
Dim totalCharge As Double, rowTwoCharge As Double, rowThreeCharge As Double, _
    rowFourCharge As Double, applicableRate As Double, theTempRow As Double

rowCount = 3 ' initializes to thrid row of invoice sheet

' Main Loop -- Loops until the item number is blank
' Each pass increments rowCount
While Not (Sheets("Invoice").Cells(rowCount, 2) = "") 'And Sheets("Invoice").Cells(rowCount + 2, 2) = 
"" And Sheets("Invoice").Cells(rowCount + 3, 2) = "" And Sheets("Invoice").Cells(rowCount + 4, 2) = ""

    'calls function to clean current item number
    Dim findItem As String
    findItem = Clean_Element(Sheets("Invoice").Cells(rowCount, 2))

    Dim htsCounter As Long 'counter through hts code list
    Dim duplicateCounter As Integer ' counter for multiple occurances of same item number
    duplicateCounter = 0

    'searching through HTS Code List to find the current item number from Invoice (while rows not 
blank, and while recursive loop has not been started)
    'once the recursion has started, we eliminate the need to look for the first occurrence of finditem
    While ((Sheets("HTS Code List").Cells(htsCounter, 3) = "" And Sheets("HTS Code List").Cells
(htsCounter, 4) = "" And Sheets("HTS Code List").Cells(htsCounter, 12) = "") And (duplicateCounter = 
0))
        'if one is found, recursively checking through to see if there are duplicates of item number

        'once we determine the exact methodology for rectifying the duplicates, it needs to be coded 
into this loop to prevent a recurse from happening when it is not needed (on supplier)
        If (Sheets("HTS Code List").Cells(htsCounter, 3) = findItem) Then
            'if a cell matches the find item, initialize counter variable, and call recursion function
            If (duplicateCounter = 1 + Item_Duplicate_Check(findItem, htsCounter) < 2) Then
                'if there is only one occurrence of the item number

            Else
                'if there is more than one occurrence of the item number
                ' recall that the recurssive function knows that any item numbers it finds are 
duplicates, and can immediately be thrown into the error spot
                ' here we only need to take care of the first occurrence of the duplicated value, 
nothing else

            End If

        End If

        htsCounter = htsCounter + 1 'moving to the next row on hts code list
    End While
    .....
    rowCount = rowCount + 1 'move to the next row on invoice
End While

.....
'''-----OLD CODE-----'''
.....

If (Not theRange Is Nothing Or findItem = "") Then
    theRow = theRange.Row ' the row on the hts code list sheet
    theRange = Nothing
    ' checks to make sure sets have either same rate or percentages''

```

```

    If (Not Sheets("HTS Code List").Cells(theRow + 2, 4).Value = "" And _
        (Sheets("HTS Code List").Cells(theRow + 1, 3).Value = "" And Not Sheets("HTS Code List").Cells
            (theRow + 1, 7).Value = "")) Then
        If ((Not Sheets("HTS Code List").Cells(theRow, 12).Value = Sheets("Invoice").Cells(rowCount, 5)
            -
                And Sheets("HTS Code List").Cells(theRow + 1, 14).Value = "")) Then
            isInvalid = True
            GoTo Break7 ' easy way to skip all the code (not the best way however)
        End If
    End If
    isInvalid = False
    If (Not Sheets("HTS Code List").Cells(theRow, 12).Value = Sheets("Invoice").Cells(rowCount, 5))
Then ' do the total rates match?
    If (Not i < 1) Then
        If Not IsNumeric(Sheets("HTS Code List").Cells(theRow, 12)) Then
            applicableRate = Sheets("Invoice").Cells(rowCount, 5)
        Else
            applicableRate = Sheets("Invoice").Cells(rowCount, 5) ' for all quotes that the rates
differ, use the invoice rate when not doing manual
        End If
    Else
        applicableRate = Sheets("Invoice").Cells(rowCount, 5)
    End If
    Else
        applicableRate = Sheets("HTS Code List").Cells(theRow, 12).Value
    End If
    totalCharge = applicableRate * Sheets("Invoice").Cells(rowCount, 4) 'row 1 charge
    ' Checking for a set, and then how large the set is
    If (Sheets("HTS Code List").Cells(theRow + 1, 3) = "" And Sheets("HTS Code List").Cells(theRow + 2,
3) = "") Then
        ' second row hts or description ?
        If ((Not Sheets("HTS Code List").Cells(theRow + 1, 4) = "" Or Not Sheets("HTS Code List").Cells
(theRow + 1, 7) = "")) Then
            If (Sheets("Invoice").Cells(rowCount, 4) > 0) Then ' if the quantity is a number greater
than 0
                If (Not applicableRate = Sheets("HTS Code List").Cells(theRow, 12).Value) Then ' if
the rate is not the same as hts code list
                    If (Not Sheets("HTS Code List").Cells(theRow + 1, 14).Value = "") Then ' if
percent exists
                        rowTwoCharge = applicableRate * Sheets("Invoice").Cells(rowCount, 4) * Sheets(
"HTS Code List").Cells(theRow + 1, 14) 'row 2 charge
                    Else
                        rowTwoCharge = 0
                        rowThreeCharge = 0
                        rowFourCharge = 0
                        GoTo theEnd2
                    End If
                Else
                    rowTwoCharge = Sheets("HTS Code List").Cells(theRow + 1, 12) * Sheets("Invoice").
Cells(rowCount, 4) 'row 2 charge
                End If
            End If

            ' third row description or HTS ?
            If ((Not Sheets("HTS Code List").Cells(theRow + 2, 4) = "" Or Not Sheets("HTS Code List").
Cells(theRow + 2, 7) = "")) Then
                If (Sheets("Invoice").Cells(rowCount, 4) > 0) Then ' if the quantity is a number
greater than 0
                    If (Not applicableRate = Sheets("HTS Code List").Cells(theRow, 12).Value) Then '
if the rate is not the same as hts code list
                        If (Not Sheets("HTS Code List").Cells(theRow + 2, 14).Value = "") Then ' if
percent exists
                            rowThreeCharge = applicableRate * Sheets("Invoice").Cells(rowCount, 4) *
Sheets("HTS Code List").Cells(theRow + 2, 14) 'row 3 charge
                        Else

```

```

        GoTo theEnd2
    End If
Else
    rowThreeCharge = Sheets("HTS Code List").Cells(theRow + 2, 12) * Sheets(
"Invoice").Cells(rowCount, 4) 'row 3 charge
    End If

    ' row 4 hts or description
    If ((Not Sheets("HTS Code List").Cells(theRow + 3, 12) = "" Or Not Sheets("HTS Code
List").Cells(theRow + 3, 7) = "")) Then
        If (applicableRate = Sheets("HTS Code List").Cells(theRow, 12).Value) Then '
if rates match
            rowFourCharge = ((applicableRate * Sheets("Invoice").Cells(rowCount, 4)) -
(rowTwoCharge + rowThreeCharge)) '/' Sheets("Invoice").Cells(rowCount, 4) 'row 4 charge
        Else
            rowFourCharge = 0 ' default 45/55 % used
        End If
        'Range("L3") = rowTwoCharge
        'Range("L4") = rowThreeCharge
        'Range("L5") = rowFourCharge

        If (Not (rowTwoCharge + rowThreeCharge = 0 Or rowFourCharge = 0)) Then
            theTempRow = rowTwoCharge
            rowTwoCharge = rowTwoCharge + (rowTwoCharge / (rowTwoCharge +
rowThreeCharge)) * rowFourCharge ' final charges with box's on both items
            rowThreeCharge = rowThreeCharge + (rowThreeCharge / (theTempRow +
rowThreeCharge)) * rowFourCharge '
        End If
        'Range("M3") = rowTwoCharge
        'Range("M4") = rowThreeCharge
        'Range("M5") = rowFourCharge
        'Range("N5") = findItem
    End If
End If
End If
Else
End If
End If
theEnd2:
    'Range("M3") = rowTwoCharge
    '-----Placement-----
    'Range("M4") = rowThreeCharge
    'Range("M5") = rowFourCharge
    'Range("N5") = findItem
    ' find where the hts should be placed
    theHTSRange = Sheets("HTS Code List").Cells(theRow, 4) ' the hts spots on the calculation tab
    For k = 0 To 20
        If (theHTSRange = theHTSCode(k)) Then ' look for element in the array,
            thePlaceRow = k
            GoTo Break3
        Else
            For l = 0 To 20
                If ((theHTSCode(k)) = "") Then ' if the element isnt in array, find first blank
                    thePlaceRow = k
                    GoTo Break3
                End If
            Next l
        End If
    Next k
Break3:
    If (Sheets("HTS Code List").Cells(theRow, 8) = "Y") Then ' if added value is needed
        theTotal = Sheets("HTS Code List").Cells(theRow, 10) * Sheets("Invoice").Cells(rowCount, 4)
        'raw mats cost
        theTotal = theTotal + Sheets("HTS Code List").Cells(theRow, 11) * Sheets("Invoice").Cells
(rowCount, 4) ' export freight value
        theAVRange = findItem
    
```

```

        For m = 0 To 8
            If ((theAVItemNumber(m)) = theAVRange) Then ' look for element in the array,
                theSecondPlaceRow = m
                GoTo Break4
            Else
                For n = 0 To 8
                    If ((theAVItemNumber(m)) = "") Then ' if the element isnt in array, find first
blank
                        theSecondPlaceRow = m
                        GoTo Break4
                    End If
                Next n
            End If
        Next m
Break4:
    theAVItemNumber(theSecondPlaceRow) = theAVRange
    theAVTotal(theSecondPlaceRow) = theAVTotal(theSecondPlaceRow) + theTotal
    theAVHTS(theSecondPlaceRow) = Sheets("HTS Code List").Cells(theRow, 4)

    End If

    theItemNumberRange = findItem
    theTotalChargeRange = Sheets("Invoice").Cells(rowCount, 5) * Sheets("Invoice").Cells(rowCount, 4)
    ' invoice unit price * invoice qty

    ' getting the correct hts set codes in the rows
    If (Sheets("HTS Code List").Cells(theRow + 1, 3) = "" And Sheets("HTS Code List").Cells(theRow + 2,
3) = "") Then

        If ((Not Sheets("HTS Code List").Cells(theRow + 1, 4) = "" Or Not Sheets("HTS Code List").Cells
(theRow + 1, 8) = "")) Then ' the second row is applicable, hence, a set
            'theHTSRange = Sheets("HTS Code List").Cells(theRow, 4) & " / " & Sheets("HTS Code List").
Cells(theRow + 1, 4)
            For m = 0 To 20
                theHTSRange = Sheets("HTS Code List").Cells(theRow, 4) & " / " & Sheets("HTS Code List"
).Cells(theRow + 1, 4)
                If (theHTSCode(m) = theHTSRange) Then ' look for element in the array,
                    theSetPlaceRow = m
                    GoTo Break5
                Else
                    For n = 0 To 20
                        If (theHTSCode(m) = "") Then ' if the element isnt in array, find first
blank
                            theSetPlaceRow = m
                            GoTo Break5
                        End If
                    Next n
                End If
            Next m
Break5:
            theHTSCode(theSetPlaceRow) = theHTSRange ' puts the hts in correct matrix element
            If (Not theItemNumberRange = "") Then
                theItemNumbers(theSetPlaceRow) = theItemNumbers(theSetPlaceRow) & theItemNumberRange &
", "
            End If
            If (rowTwoCharge = 0 And rowThreeCharge = 0 And rowFourCharge = 0) Then
                theHTSTotals(theSetPlaceRow) = theHTSTotals(theSetPlaceRow) + totalCharge
            Else
                theHTSTotals(theSetPlaceRow) = theHTSTotals(theSetPlaceRow) + rowTwoCharge
            End If
            theHTSQuantity(theSetPlaceRow) = theHTSQuantity(theSetPlaceRow) + Sheets("Invoice").Cells
(rowCount, 4)

            If ((Not Sheets("HTS Code List").Cells(theRow + 2, 4) = "" Or Not Sheets("HTS Code List").
Cells(theRow + 2, 8) = "")) Then ' the second row is applicable, hence, a set

```

```

        For m = 0 To 20
            theHTSRange = Sheets("HTS Code List").Cells(theRow, 4) & " / " & Sheets("HTS Code
List").Cells(theRow + 2, 4)
            If (theHTSCode(m) = theHTSRange) Then '' look for element in the array,
                theSetPlaceRow = m
                GoTo Break6
            Else
                For n = 0 To 20
                    If (theHTSCode(m) = "") Then '' if the element isnt in array, find first
blank
                        theSetPlaceRow = m
                        GoTo Break6
                    End If
                Next n
            End If
        Next m
Break6:
        theHTSCode(theSetPlaceRow) = theHTSRange '' puts the hts in correct matrix element
        If (Not theItemNumberRange = "") Then
            theItemNumbers(theSetPlaceRow) = theItemNumbers(theSetPlaceRow) &
theItemNumberRange & ", "
        End If
        If (rowTwoCharge = 0 And rowThreeCharge = 0 And rowFourCharge = 0) Then
            theHTSTotals(theSetPlaceRow) = theHTSTotals(theSetPlaceRow)
        Else
            theHTSTotals(theSetPlaceRow) = theHTSTotals(theSetPlaceRow) + rowThreeCharge
        End If
        theHTSQuantity(theSetPlaceRow) = theHTSQuantity(theSetPlaceRow) + Sheets("Invoice").
Cells(rowCount, 4)
        End If
        '' Else '' when there is not a set, these are used
        '' theHTSCode(thePlaceRow) = theHTSRange
        '' If (Not theItemNumberRange = "") Then
        ''     theItemNumbers(thePlaceRow) = theItemNumbers(thePlaceRow) & theItemNumberRange
& ", "
        '' End If
        '' theHTSTotals(thePlaceRow) = theHTSTotals(thePlaceRow) + theTotalChargeRange
        '' theHTSQuantity(thePlaceRow) = theHTSQuantity(thePlaceRow) + Sheets("Invoice").Cells
(rowCount, 4)
        End If
        Else '' when there is not a set, these are used
            theHTSCode(thePlaceRow) = theHTSRange
            If (Not theItemNumberRange = "") Then
                theItemNumbers(thePlaceRow) = theItemNumbers(thePlaceRow) & theItemNumberRange & ", "
            End If
            theHTSTotals(thePlaceRow) = theHTSTotals(thePlaceRow) + theTotalChargeRange
            theHTSQuantity(thePlaceRow) = theHTSQuantity(thePlaceRow) + Sheets("Invoice").Cells
4)
        End If
    Else
        theErrorList = theErrorList & findItem & ", "
    End If
Break7:
    If (isInvalid) Then
        theInvalidSetList = theInvalidSetList & findItem & ", "
    End If

    ''-----END OLD CODE-----
    .....

    Call Place_Values(theHTSCode, theItemNumbers, theHTSQuantity, theHTSTotals, theAVHTS, theAVItemNumber,
theAVTotal, theErrorList, theInvalidSetList, WorksheetFunction.Sum(theHTSTotals), WorksheetFunction.Sum
(theAVTotal))

```

End Sub

Private Function Clean_Element(tempString As String) As String

Dim p As Integer

p = 1 'initializes counter to first character in string

' moves through element, removing spaces until reaching end of element

While p <= Len(tempString)

If Mid(tempString, p, 1) <> " " Then 'if character is not a space, keep it

Clean_Element = Clean_Element & Mid(tempString, p, 1)

End If

End While

Return Clean_Element ' returns the space-free element

End Function

Private Sub ClearTotals() ' clears all data on worksheet

Application.ScreenUpdating = False ' delays screen updates to speed up utility

Range("\$B\$2:\$H\$22").Select() ' selects and clears contents of data elements on worksheet

Selection.ClearContents()

Range("\$I\$12:\$K\$22").Select()

Selection.ClearContents()

Range("\$K\$6").Select()

Selection.ClearContents()

Range("\$C\$23").Select()

Selection.ClearContents()

Range("\$H\$23").Select()

Selection.ClearContents()

Range("\$B\$2").Select()

End Sub

Private Sub Delete_Blank_HTS_Rows()

' code to get rid of blank lines on hts code list

Dim r As Long ' in case integer isnt larg enough

For r = Sheets("HTS Code List").Cells(Rows.Count, 1).End(xlUp).Row To 1 Step -1

If Sheets("HTS Code List").Cells(r, 3) = "" And Sheets("HTS Code List").Cells(r, 4) = "" And Sheets("HTS Code List").Cells(r, 12) = "" Then Sheets("HTS Code List").Rows(r).Delete()

Next r

End Sub

Private Sub Place_Values(htsCodes, itemNums, htsQty, htsTotals, avHTS, avItems, avTotals, errors, invalids, htsFinal, avFinal)

' This sub takes all of the variables resulting from calculation, and puts them in the appropriate place on the worksheet for display

Dim j As Integer

For j = 2 To 22 ' putting all of the values into appropriate cells from matrices

Cells(j, 2) = htsCodes(j - 2)

Cells(j, 3) = itemNums(j - 2)

If (htsQty(j - 2) > 0) Then ' only place values if its a value greater than 0

Cells(j, 7) = htsQty(j - 2) ' lists quantity

End If

If (htsTotals(j - 2) > 0) Then ' only place values if its a value greater than 0

Cells(j, 8) = htsTotals(j - 2)

End If

Next j

Dim o As Integer

For o = 12 To 20

Cells(o, 10) = avHTS(o - 12)

Cells(o, 9) = avItems(o - 12)

If (avTotals(o - 12) > 0) Then ' only place values if its a value greater than 0

Cells(o, 11) = avTotals(o - 12)

End If

Next o

```

Range("C23").Value = theErrorList
Range("H23").Value = theInvalidSetList
Range("K6").Value = htsFinal '' place final total
Range("K21").Value = avFinal '' place AV total

```

```
End Sub
```

```

Private Function GetOption(OpArray, theDefault, Title)
    Dim TempForm 'As VBComponent
    Dim NewOptionButton As Msforms.OptionButton
    Dim NewCommandButton1 As Msforms.CommandButton
    Dim NewCommandButton2 As Msforms.CommandButton
    Dim TextLocation As Integer
    Dim X As Integer, i As Integer, TopPos As Integer
    Dim MaxWidth As Long
    Dim WasVisible As Boolean

    ' Hide VBE window to prevent screen flashing
    Application.VBE.MainWindow.Visible = False

    ' Create the UserForm
    TempForm = ThisWorkbook.VBProject.VBComponents.Add(3)
    TempForm.Properties("Width") = 800

    ' Add the OptionButtons
    TopPos = 4
    MaxWidth = 0 'Stores width of widest OptionButton
    For i = LBound(OpArray) To UBound(OpArray)
        NewOptionButton = TempForm.Designer.Controls.Add("forms.OptionButton.1")
        With NewOptionButton
            .Width = 800
            .Caption = OpArray(i)
            .Height = 15
            .Left = 8
            .Top = TopPos
            .Tag = i
            .AutoSize = True
            If theDefault = i Then .Value = True
            If .Width > MaxWidth Then MaxWidth = .Width
        End With
        TopPos = TopPos + 15
    Next i

    ' Add the Cancel button
    NewCommandButton1 = TempForm.Designer.Controls.Add("forms.CommandButton.1")
    With NewCommandButton1
        .Caption = "Cancel"
        .Height = 18
        .Width = 44
        .Left = MaxWidth + 12
        .Top = 6
    End With

    ' Add the OK button
    NewCommandButton2 = TempForm.Designer.Controls.Add("forms.CommandButton.1")
    With NewCommandButton2
        .Caption = "OK"
        .Height = 18
        .Width = 44
        .Left = MaxWidth + 12
        .Top = 28
    End With

    ' Add event-handler subs for the CommandButtons
    With TempForm.CodeModule

```



```
X = .CountOfLines
.InsertLines(X + 1, "Sub CommandButton1_Click()")
.InsertLines(X + 2, "  GETOPTION_RET_VAL=False")
.InsertLines(X + 3, "  Unload Me")
.InsertLines(X + 4, "End Sub")

.InsertLines(X + 5, "Sub CommandButton2_Click()")
.InsertLines(X + 6, "  Dim ctl")
.InsertLines(X + 7, "  GETOPTION_RET_VAL = False")
.InsertLines(X + 8, "  For Each ctl In Me.Controls")
.InsertLines(X + 9, "    If ctl.Tag <> "" Then If ctl Then GETOPTION_RET_VAL = ctl.Tag")
.InsertLines(X + 10, "  Next ctl")
.InsertLines(X + 11, "  Unload Me")
.InsertLines(X + 12, "End Sub")
End With

' Adjust the form
With TempForm
.Properties("Caption") = Title
.Properties("Width") = NewCommandButton1.Left + NewCommandButton1.Width + 10
If .Properties("Width") < 160 Then
.Properties("Width") = 160
NewCommandButton1.Left = 106
NewCommandButton2.Left = 106
End If
.Properties("Height") = TopPos + 24
End With

' Show the form
VBA.UserForms.Add(TempForm.Name).Show()

' Delete the form
ThisWorkbook.VBProject.VBComponents.Remove VBComponent:=TempForm

' Pass the selected option back to the calling procedure
GetOption = GETOPTION_RET_VAL
End Function
```