

Macro for Calculating Connectivities

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This Macro is able to calculate city interlocks for 2335 cities and 499 firms. To make it run faster, you should minimize the ranges of the macro to the minimum according to your data. The expressions to change are marked below:

According to the number of cities its repetition represents 2335. Set this figure also to the minimum.

```
Sub city_inter_matrix()
  Sheets.Add After:=Sheets(Sheets.Count)
  Sheets(Sheets.Count).Name = "Matrix"
  Sheets("Data").Select
  Range("A2").Select
  Range(Selection, Selection.End(xlDown)).Select
  Selection.Copy
  Sheets("Matrix").Select
  Range("A2").Select
  ActiveSheet.Paste
  Range("B1").Select
  Selection.PasteSpecial Paste:=xlPasteAll, Operation:=xlNone, SkipBlanks:= _
    False, Transpose:=True
  Sheets.Add After:=Sheets(Sheets.Count)
  Sheets(Sheets.Count).Name = "Formula1"
  Sheets("Data").Select
  Cells.Select
  Selection.Copy
  Sheets("Formula1").Select
  Range("A1").Select
  ActiveSheet.Paste
  Range("B2").Select
  Application.CutCopyMode = False
  ActiveCell.FormulaR1C1 = "=Data!R2C*Data!RC"
  Range("B2").Select
  Selection.AutoFill Destination:=Range("B2:SF2"), Type:=xlFillDefault
  Range("B2:SF2").Select
  Selection.AutoFill Destination:=Range("B2:SF2336"), Type:=xlFillDefault
  Range("B2:SF2336").Select
  Range("SG1").Select
  With Selection.Interior
    .Pattern = xlSolid
    .PatternColorIndex = xlAutomatic
    .ColorIndex = 15
    .TintAndShade = 0
    .PatternTintAndShade = 0
  End With
  Selection.Borders(xlDiagonalDown).LineStyle = xlNone
```

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Selection.Borders(xlDiagonalUp).LineStyle = xlNone
With Selection.Borders(xlEdgeLeft)
    .LineStyle = xlContinuous
    .ColorIndex = 16
    .TintAndShade = 0
    .Weight = xlThin
End With
Selection.Borders(xlEdgeTop).LineStyle = xlNone
Selection.Borders(xlEdgeBottom).LineStyle = xlNone
With Selection.Borders(xlEdgeRight)
    .LineStyle = xlContinuous
    .ColorIndex = 16
    .TintAndShade = 0
    .Weight = xlThin
End With
Selection.Borders(xlInsideVertical).LineStyle = xlNone
Selection.Borders(xlInsideHorizontal).LineStyle = xlNone
ActiveCell.FormulaR1C1 = "Sum"
With ActiveCell.Characters(Start:=1, Length:=3).Font
    .Name = "Arial"
    .FontStyle = "Fett"
    .Size = 10
    .Strikethrough = False
    .Superscript = False
    .Subscript = False
    .OutlineFont = False
    .Shadow = False
    .Underline = xlUnderlineStyleNone
    .ColorIndex = xlAutomatic
    .TintAndShade = 0
    .ThemeFont = xlThemeFontNone
End With
Range("SG2").Select
ActiveCell.FormulaR1C1 = "=SUM(RC[-499]:RC[-1])"
Range("SG2").Select
Selection.AutoFill Destination:=Range("SG2:SG2336"), Type:=xlFillDefault
Range("SG2:SG2336").Select
Selection.Copy
Sheets("Matrix").Select
Range("B2").Select
Selection.PasteSpecial Paste:=xlPasteValues, Operation:=xlNone, SkipBlanks _
:=False, Transpose:=False
Range("B2").Select
Application.CutCopyMode = False
Selection.ClearContents
For x = 1 To 2335
    Sheets.Add After:=Sheets(Sheets.Count)
    Sheets(Sheets.Count).Name = "Calc"
    Sheets("Formula1").Select
    Cells.Select
    Application.CutCopyMode = False

```

```

Selection.Copy
Sheets("Calc").Select
Range("A1").Select
ActiveSheet.Paste
Range("B2").Select
Application.CutCopyMode = False
ActiveCell.FormulaLocal = "=Data!" & Cells(x + 2, 2).Address(x + 2, 0) &
"*Data!B2"
Range("B2").Select
Selection.AutoFill Destination:=Range("B2:SF2"), Type:=xlFillDefault
Range("B2:SF2").Select
Selection.AutoFill Destination:=Range("B2:SF2336"), Type:=xlFillDefault
Range("B2:SF2336").Select
Range("SG2").Select
Range(Selection, Selection.End(xlDown)).Select
Selection.Copy
Sheets("Matrix").Cells(2, x + 2).PasteSpecial Paste:=xlPasteValues,
Operation:=xlNone, SkipBlanks _
:=False, Transpose:=False
Sheets("Matrix").Select
Cells(x + 2, x + 2).Select
Selection.ClearContents
Sheets("Calc").Select
Application.DisplayAlerts = False
ActiveWindow.SelectedSheets.Delete
Application.DisplayAlerts = True
Next x
End Sub

```

Before starting the city interlock macro, prepare your Excel-Spreadsheet as follows:

- Fill in your service value matrix into "Data" with cities in rows and firms in columns.
- Use only one header line.
- Delete all other sheets