

Homework #5

Note: When creating macros, do not specify a shortcut key to run the macro. Just run the macro from the Developer → Macros (Alt-F8).

- Use the macro recorder to create a VBA macro named **AddSheet** that
 - inserts a new worksheet into the workbook
 - changes the name of this new worksheet to **NewSheet**

Examine your macro code and make the following modifications:

- change any references to Sheets(". . .") to **ActiveSheet**
- remove any lines of code that use the Select method

Test your macro to make sure it works.

- Enter the block of data below anywhere on a worksheet in your workbook.

Viscosity of Water at Atmospheric Pressure			
Temperature (degF)	Viscosity (cp)		
32	1.794		
40	1.546		
50	1.310		
60	1.129		
70	0.982		
80	0.862		
90	0.764		
100	0.682		
120	0.559		
140	0.470		
160	0.401		
180	0.347		
200	0.305		

Select the cell with the **32** in it. Record a macro called **Move1** doing the following:

- ↓
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Test your **Move1** macro.

Select the cell with 32 in it again. Record a macro called **Move2**, doing the same as for **Move1**, but, with the following change:

- once the little **Stop Recording** blue button appears on the left side of the status bar at the bottom of the Excel window, click the **Use Relative References** button in the Code frame of the Developer tab before you issue your commands

Test your **Move2** macro.

Add some comments to the VBA module that discuss the differences between the two macros.

3. Automating the creation of graphs with VBA is tricky because the recorded macro has to be modified significantly before it will work.

Using the same data table as for 2 above, starting with the cell with the 32 in it selected, record a macro called **MakeXYMarkerGraph** that creates a graph on a separate chart sheet with the following properties:

[make certain the **Use Relative Reference** button is off – it doesn't have a fine outline]

- Chart Type: Scatter
- Sub-type: Scatter with only markers
- no titles
- no legend
- major gridlines on both X and Y axes
- change markers to black squares

Examine the VBA code and make the following changes:

- the statements that select the block of data should be modified to be

```
Range(Selection, Selection.End(xlDown)).Select
Range(Selection, Selection.End(xlToRight)).Select
```

- just before the `ActiveSheet.Shapes.AddChart.Select` statement, enter the following statements

```
PlotRange = Selection.Address
```

- modify the `ActiveChart.SetSourceData` statement so it looks like the following

```
ActiveChart.SetSourceData Source:=Range(PlotRange), PlotBy _
:=xlColumns
```

- after the `ActiveChart.SeriesCollection(1).Select` statement, insert

```
With Selection
    .MarkerBackgroundColorIndex = 1
    .MarkerForegroundColorIndex = 1
    .MarkerStyle = xlDiamond
    .Smooth = False
    .MarkerSize = 5
    .Shadow = False
End With
```

- remove any statements with the method `Activate` at the end
- make certain the following statement is present just before the `End Sub`

```
ActiveChart.Deselect
```

Delete your chart sheet, re-select the cell with the **32** in it, and run your macro to check that it works.

This macro should be able to create a graph for another set of data. Enter the data on the following page on your worksheet and test your macro on it to see that it creates a graph of the data.

Heat Capacity of Graphite

Temperature degC	Heat Capacity J/(mol·K)
0	14.16
50	14.68
100	15.27
150	15.85
200	16.40
250	16.96
300	17.39
350	18.00
400	18.58
450	19.07
500	19.63
550	20.14
600	20.69
650	21.26
700	21.81
750	22.32
800	22.91
850	23.47
900	24.03
950	24.56
1000	25.11