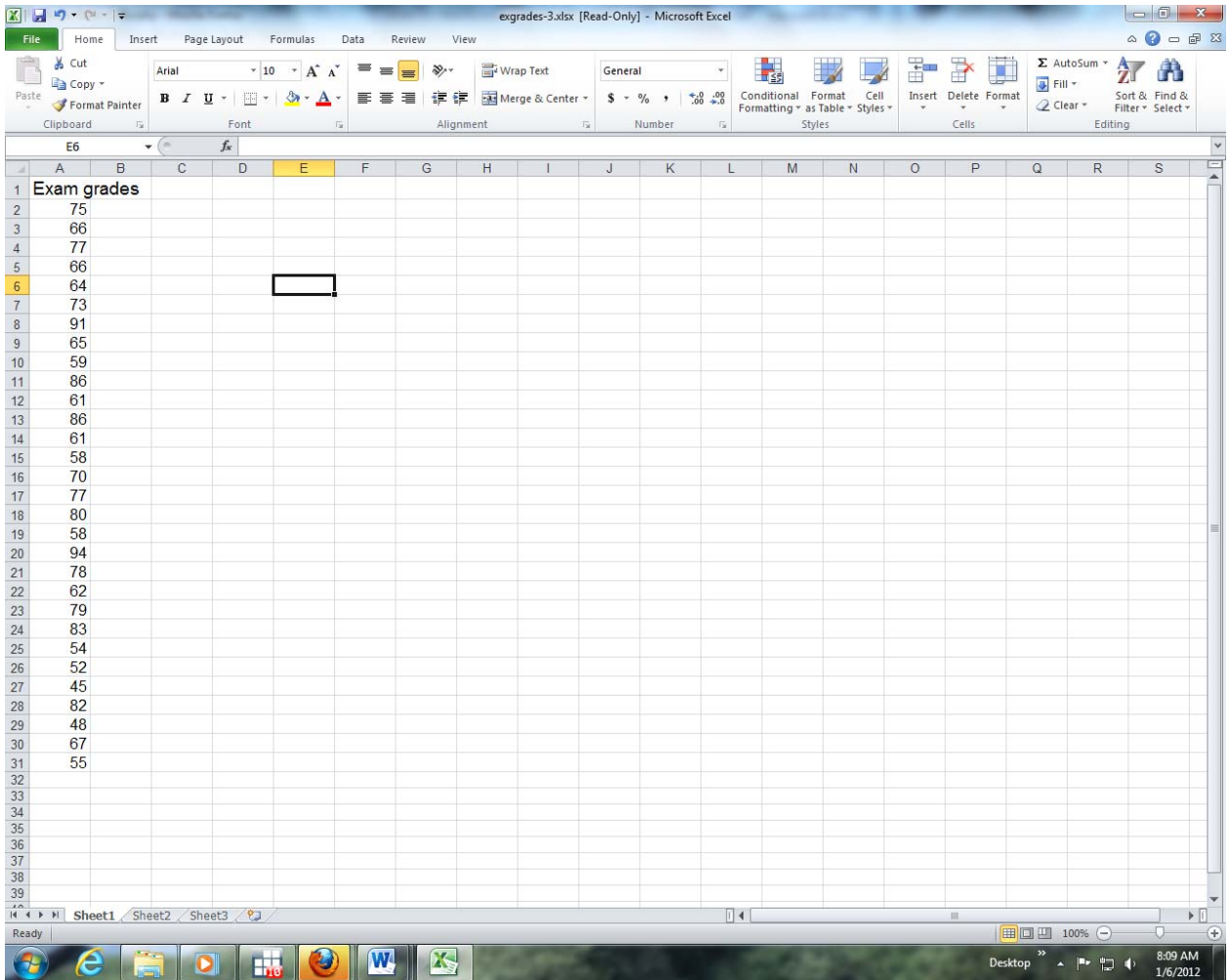


# HOW TO CREATE A HISTOGRAM WITH EXCEL

1. Open or input a data set. I'm using the grades data for the example.



- Determine your desired number of classes and corresponding class width. Input the end value for each class and enter it into the spreadsheet in a column headed "bins."

The screenshot shows a Microsoft Excel spreadsheet titled "exgrades-3.xlsx [Read-Only] - Microsoft Excel". The spreadsheet has a grid with columns A through R and rows 1 through 39. Column A is labeled "Exam grades" and column B is labeled "bins". The data in column B is as follows:

Row	Exam grades	bins
1	75	50
2	66	60
3	77	70
4	66	80
5	64	90
6	73	100
7	91	
8	65	
9	59	
10	86	
11	61	
12	86	
13	61	
14	58	
15	70	
16	77	
17	80	
18	58	
19	94	
20	78	
21	62	
22	79	
23	83	
24	54	
25	52	
26	45	
27	82	
28	48	
29	67	
30	55	
31		
32		
33		
34		
35		
36		
37		
38		
39		

The spreadsheet interface includes the Microsoft Office ribbon with tabs for File, Home, Insert, Page Layout, Formulas, Data, Review, and View. The Home tab is active, showing options for Clipboard, Font, Alignment, Number, Styles, Cells, and Editing. The status bar at the bottom indicates "Ready", "Sheet1", "Sheet2", "Sheet3", "100%", and "8:14 AM 1/6/2012".

3. The first time you go to create a histogram, you must make sure the “Analysis ToolPak” is loaded. In order to do this, follow these instructions:

## Load the Analysis ToolPak

1. Click the **File** tab in the upper left hand corner of the spreadsheet.
2. Click **Options** in the drop down menu on the left hand side.
3. Click **Add-Ins** in the new drop down menu on the left hand side.
4. Select **Analysis ToolPak** from the list of available add-ins and click **Go**.
5. Check **Analysis ToolPak** In the **Add-Ins available** box, and then click **Ok**. **Data Analysis** should now be available in the **Analysis** group under the **Data** tab.

After you've loaded the Analysis ToolPak on a given PC, you should not need to do this again.

- Under the Data tab, click Data Analysis>Histogram>OK. The Histogram dialog box appears. Indicate the input range and bin range (these can be done by marking the appropriate ranges with your mouse), check the labels box (assuming that both your data and your classes are labeled), then check the "Chart Output" box.

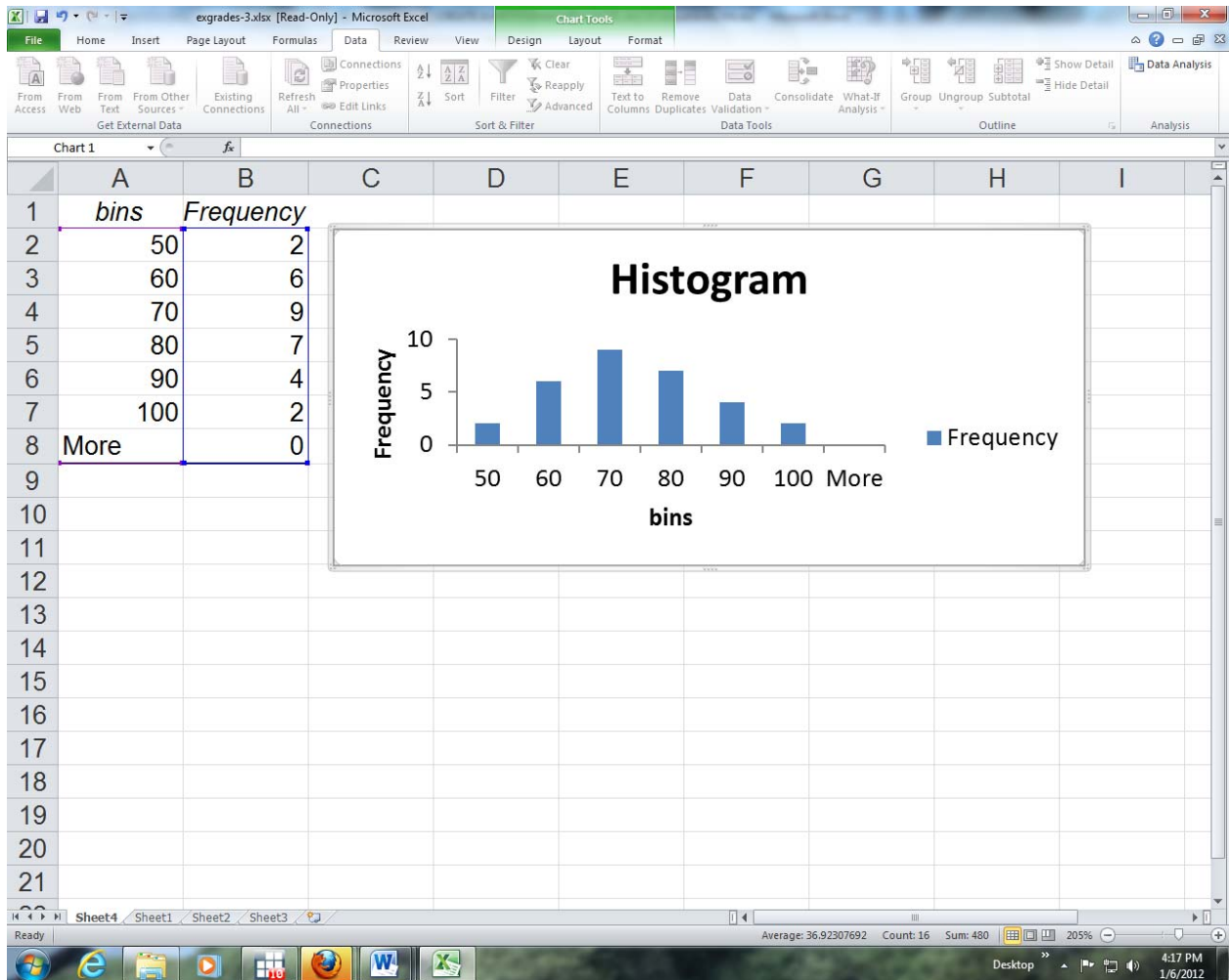
The screenshot shows the Microsoft Excel interface with the Data tab selected. The worksheet contains the following data:

Exam grades	bins
75	50
66	60
77	70
66	80
64	90
73	100
91	
65	
59	
86	
61	
86	
61	
58	
70	
77	
80	
58	
94	
78	
62	
79	
83	
54	
52	
45	
82	
48	
67	
55	

The Histogram dialog box is open, showing the following settings:

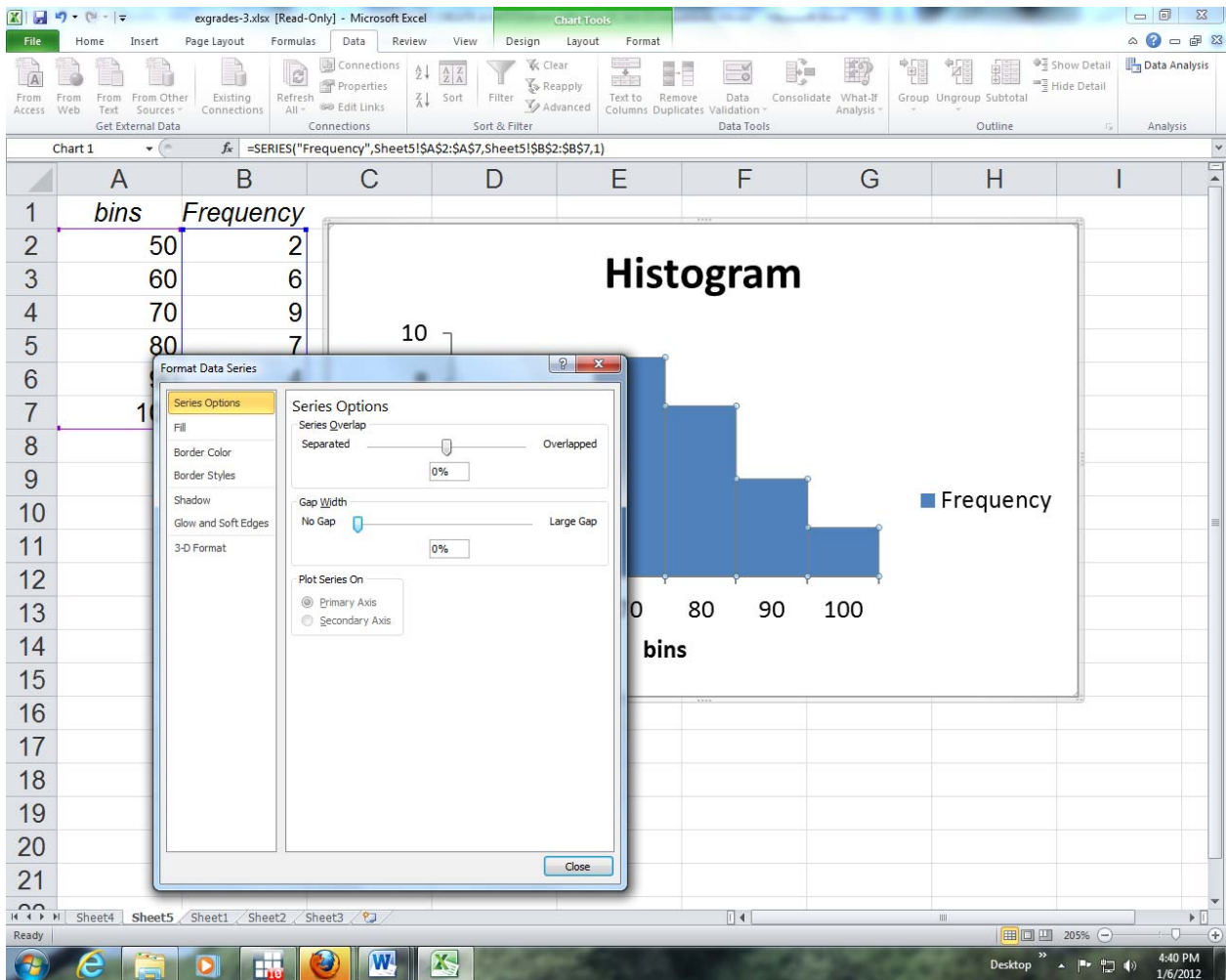
- Input Range: \$A\$1:\$A\$31
- Bin Range: \$B\$1:\$B\$7
- Labels
- Output options:
  - Output Range:
  - New Worksheet Ply:
  - New Workbook
  - Pareto (sorted histogram)
  - Cumulative Percentage
  - Chart Output

5. Click OK in the dialog box. Excel gives the following result:

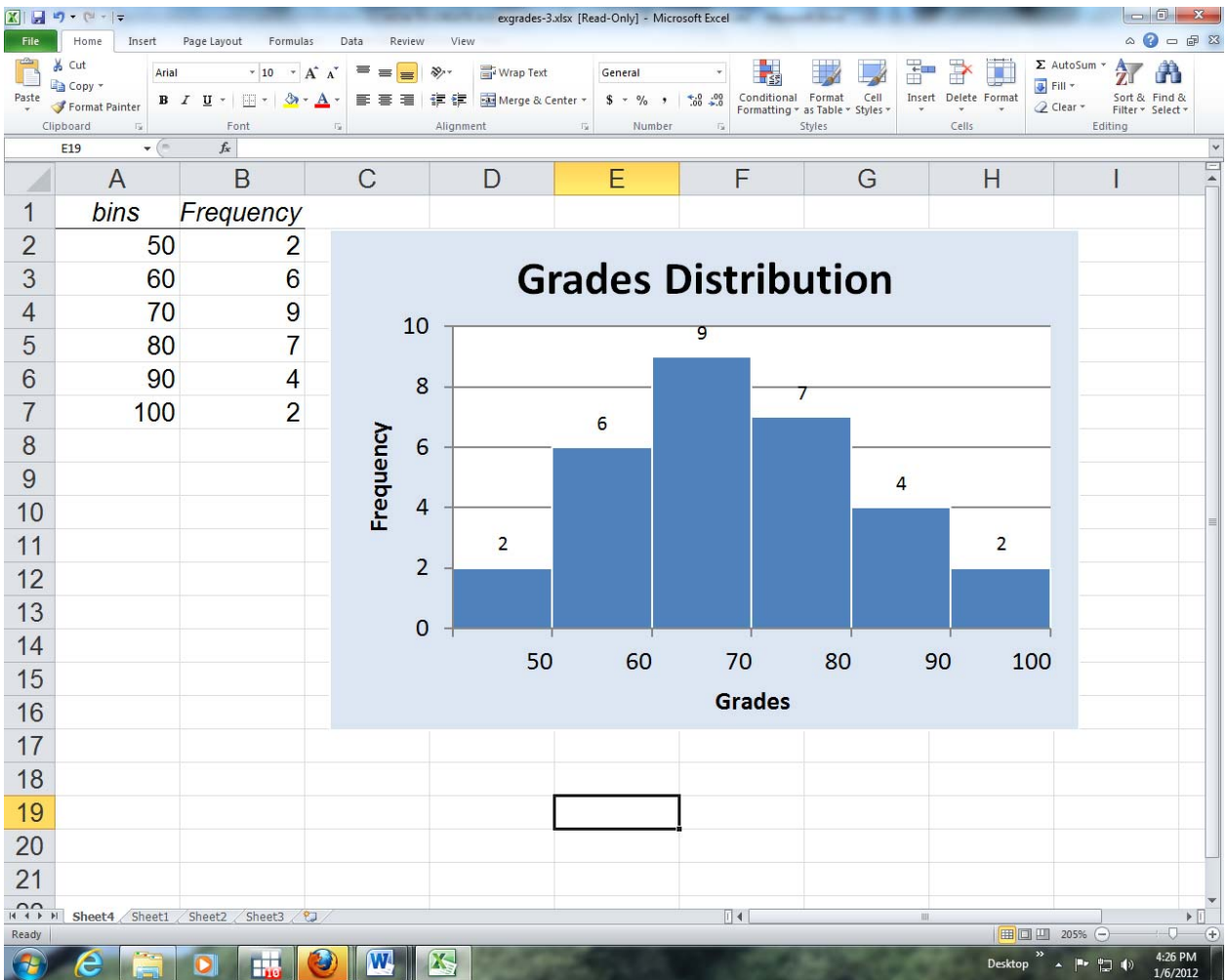


Eliminate the "More" category (it is empty) by left clicking on the More row in the spreadsheet (row 8 in the example). Then right click on the mouse to pull up the menu and left click on delete.

- Close the gaps on the histogram bars by right clicking on any one of the histogram bars and then left clicking on "Format Data Series" in the menu that appears. Push the Gap Width slider over to "No Gap."



7. Further editing (e.g., titles, axis fonts, etc.) can be accomplished by clicking anywhere in the chart and then editing appropriately as demonstrated in class.



See the discussion on pp. 67-69 in the text for more Excel tips.