

Sorting and Histogram

This is an exercise in sorting and producing a histogram. If you are using Office XP, you can get additional information about using Excel 2002 for doing Histograms at the Microsoft web site:


<http://office.microsoft.com/assistance/2002/articles/xlExpHistograms.aspx>

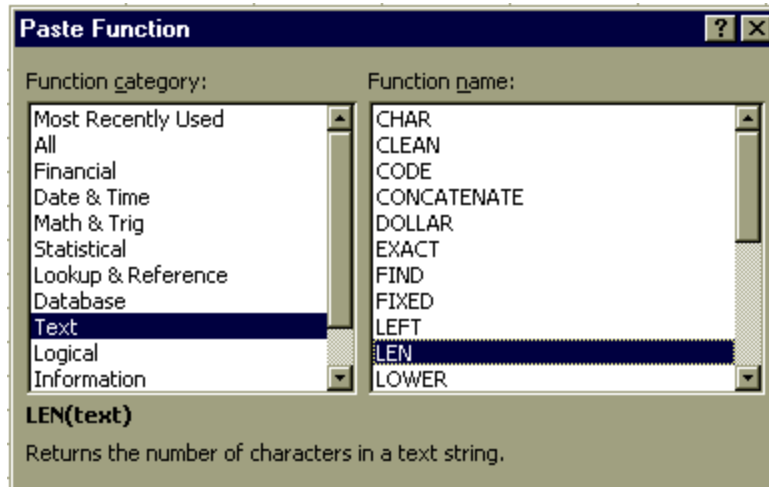
Download the file "Dictionary_Words.xls" from the course web site. Store it in your directory H:\CSC100\Excel. Alternatively, prepare an Excel file named "Dictionary_Words.xls" identical to the printed copy below.

Contents of Dictionary_Words.xls

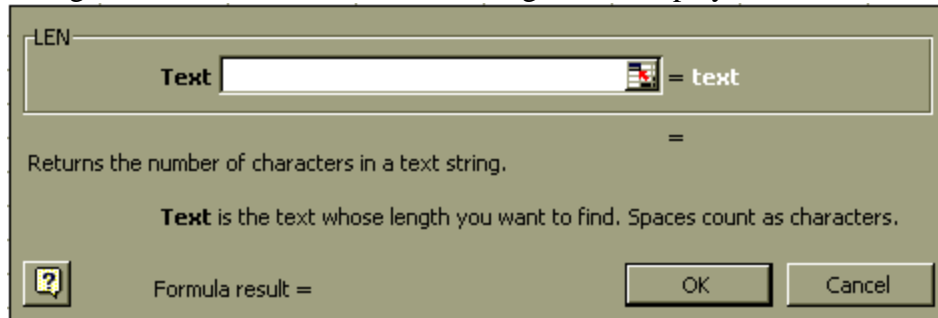
Word	# Words in Definition
anachronism	67
anachronismatical	1
anachronist	7
anachronistic	7
anachronize	5
anachronous	7
anacid	2
anacidity	8
anaclasis	25
anaclastic	17
anaclastic curves	16
anaclastics	12
Anaclete	10
anacleticum	6
anaclinal	21
anaclisis	1
anaclitic	20
anacoenosis	22
anacoluthic	5
anacoluthon	59
anaconda	96
anaconda gourd	4
Anacreon	28
Anacreontic	26
anacrisis	16
Anacrogynae	21
anacrogynous	15
anacromyodian	23
anacrotism	22
anacrusis	34
anacusia	2

Start Excel and open the file “Dictionary_Words.xls”.¹

- Label column C “# Letters in Word”
- Use the function TEXT | LEN to measure the number of letters in each word.
 - Select cell C2.
 - Click on the “Paste Function” icon in the Excel Standard Toolbar. 
 - This will cause the “Paste Function” dialog box to display.



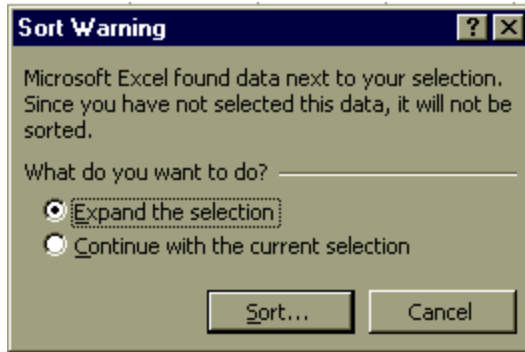
- Select “Text” in the “Function Category” section of the “Paste Function” dialog box.
- Select “LEN” in the “Function Name” section of the “Paste Function” dialog box. This causes the “LEN” dialog box to display.



- Drag the “LEN” dialog box to the right so that columns A, B, and C are visible.
- Click on cell A2. “A2” will appear in the “Text” edit box in the “LEN” dialog box. Cell C2 will contain “=LEN(A2)”.
- Click the OK button in the “LEN” dialog box. Cell C2 now contains “11”, the number of letters in the word “anachronism”, the word in cell A2.
- Select cell C2.

¹ Webster’s New International Dictionary, Second Edition, Unabridged (1953). pg. 93., center column.

- Drag the lower right corner copy handle to cell C32. This copies the formula of cell C2 to other cells, adjusting the formula for each row.
- Sort the data on the number of Letters in Word.
 - Data | Sort
 - Click on “Sort” on the “Data” menu in the Excel Menu Bar.
 - In the “Sort Warning” dialog box, select “Expand the Selection”.



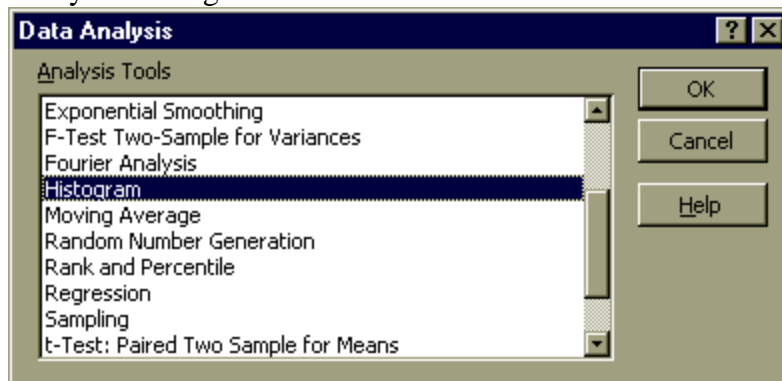
- Click on the “Sort...” button in the “Sort Warning” dialog box. The “Sort” dialog box is displayed.



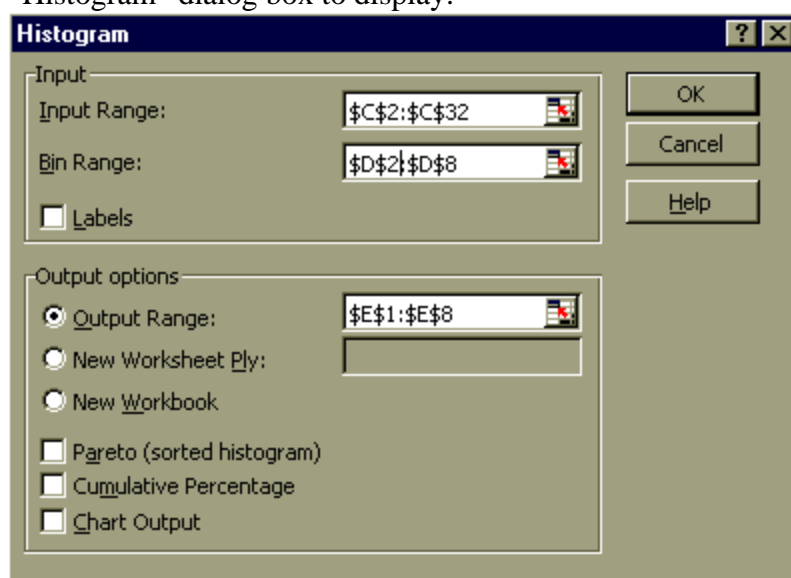
- In the “Sort by” section of the “Sort” dialog box, select “# Letters in Word” as the sort key.
- Select “Ascending” as the type of sort.
- Select “Header row” in the “My list has” section of the “Sort” dialog box.
- Click the “OK” button in the “Sort” dialog box.
- Label column D “Upper Bin Limits”.
- Enter the following upper bin limits in column D, one in each **row**, beginning in row #2.

3
6
9
12
15
18
21

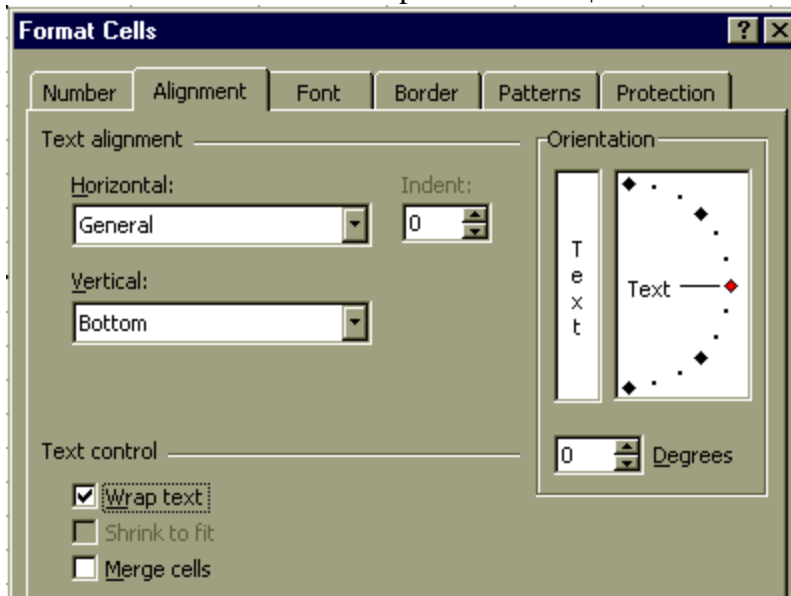
- Use “Tools | Data Analysis | Histogram” to count the number of words with the same number of letters.
 - On the Excel “Tools” menu, click on “Data Analysis” to display the “Data Analysis” dialog box.



- In the “Data Analysis” dialog box, select “Histogram”.
- Click the OK button in the “Data Analysis” dialog box. This causes the “Histogram” dialog box to display.



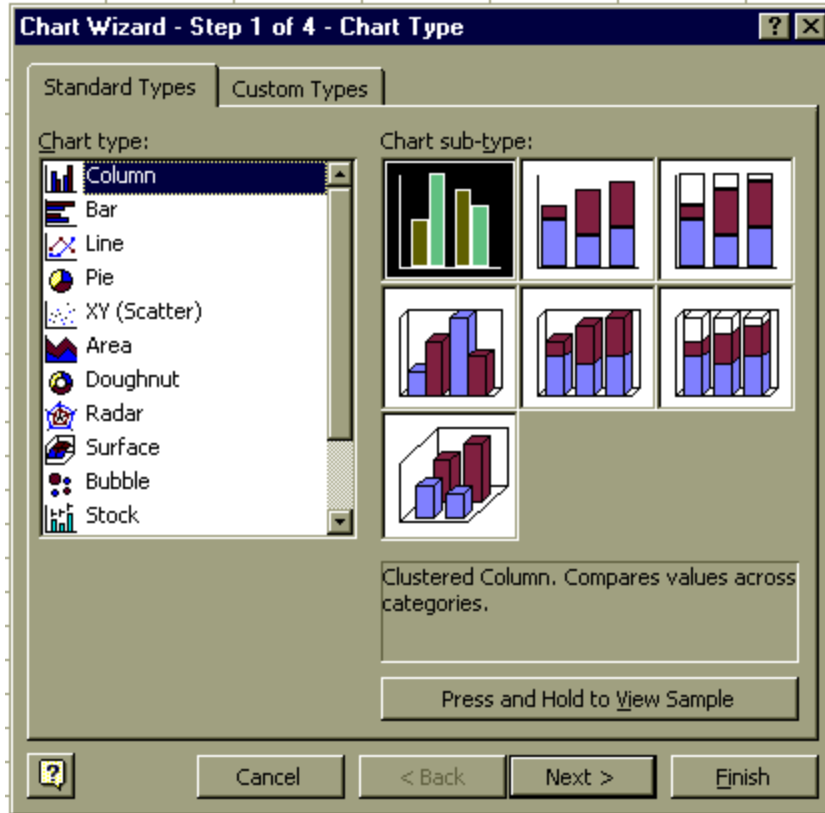
- In the “Input” section of the “Histogram” dialog box, click in the “Input Range” edit box.
 - Highlight cells C2 through C32.
 - In the “Input” section of the “Histogram” dialog box, click in the “Bin Range” edit box.
 - Highlight cells D2 through D8.
 - In the “Output options” section of the “Histogram” dialog box, click on the “Output Range” selection radio button.
 - In the “Output options” section of the “Histogram” dialog box, click in the “Output Range” edit box.
 - Highlight cells E1 through E8.
 - Click the OK button in the “Histogram” dialog box.
- Format cells C1 and D1 to wrap text: Format | Cells



- Select cells C1 and D1.
 - Select “Cells” on the Excel “Format” menu.
 - Select the “Alignment” tab.
 - In the “Text Control” section of the “Alignment” sheet, checkmark the “Wrap Text” box.
 - Click the “OK” button in the “Format Cells” dialog box.
- AutoSize Column C: Place the mouse cursor in the grey area of column labels, at the right edge of Column C, and double-click.
 - Plot a histogram chart of the histogram data using the Chart icon.

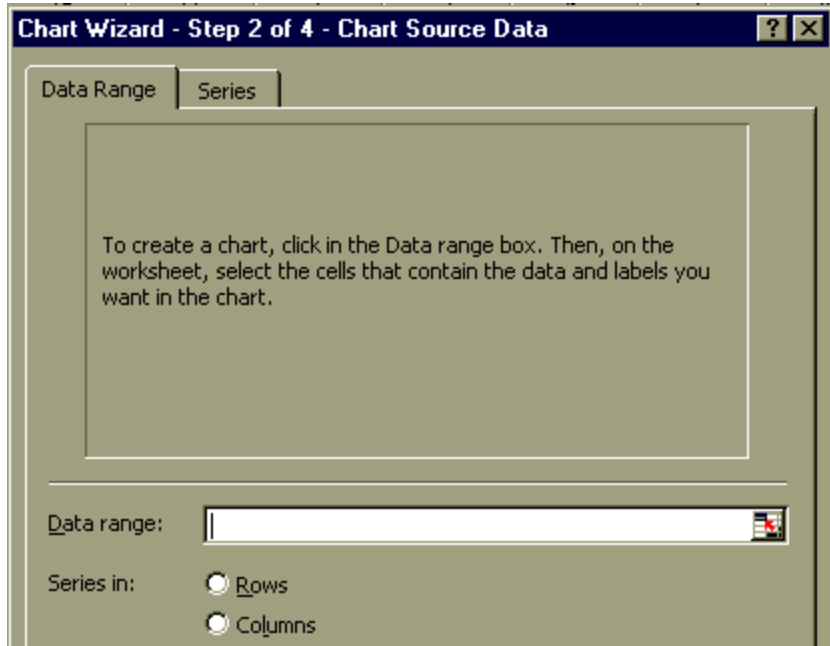


- Click the Chart icon on the Standard Toolbar. This causes the Chart Wizard dialog box to display.

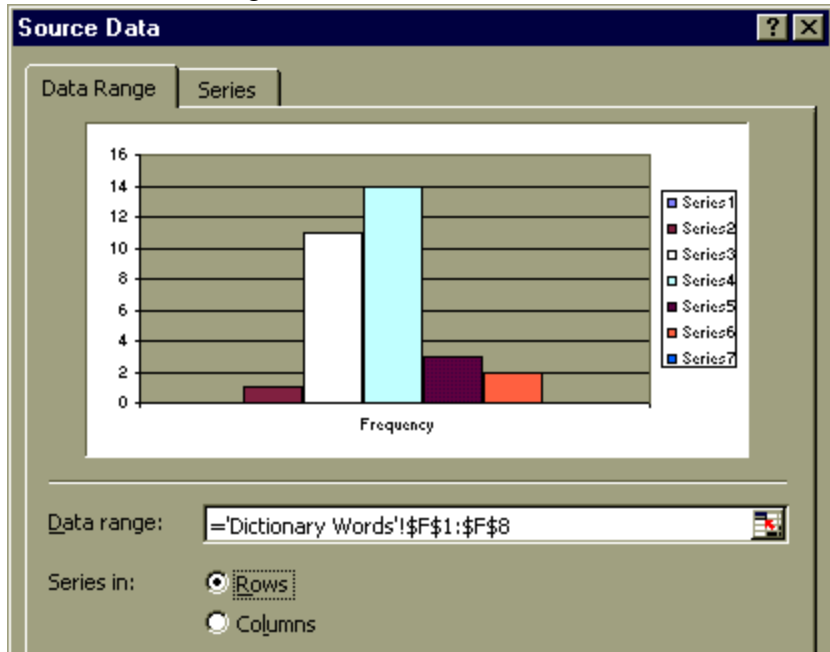


- Select the “Standard Types” tab in the “Chart Wizard” dialog box.
- Select “Column” in the “Chart Type” selection list.
- Select the 2-dimensional vertical bar graph (top left) in the “Chart sub-type” selection region of the “Standard Types” sheet of the “Chart Wizard” dialog box.

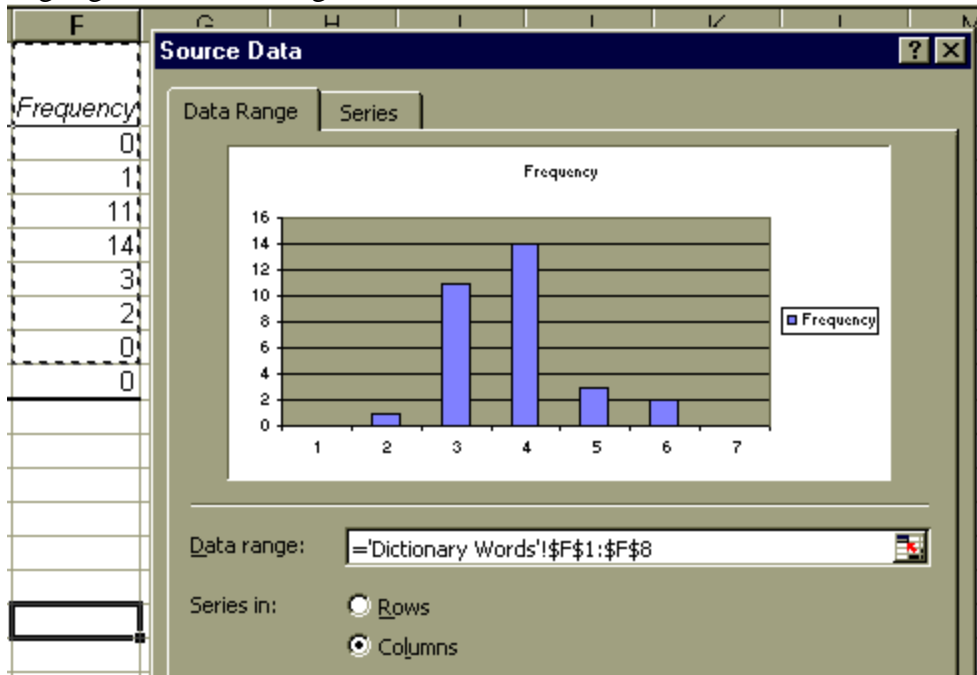
- Click the “Next” button in the “Chart Wizard” dialog box to advance to Step #2.



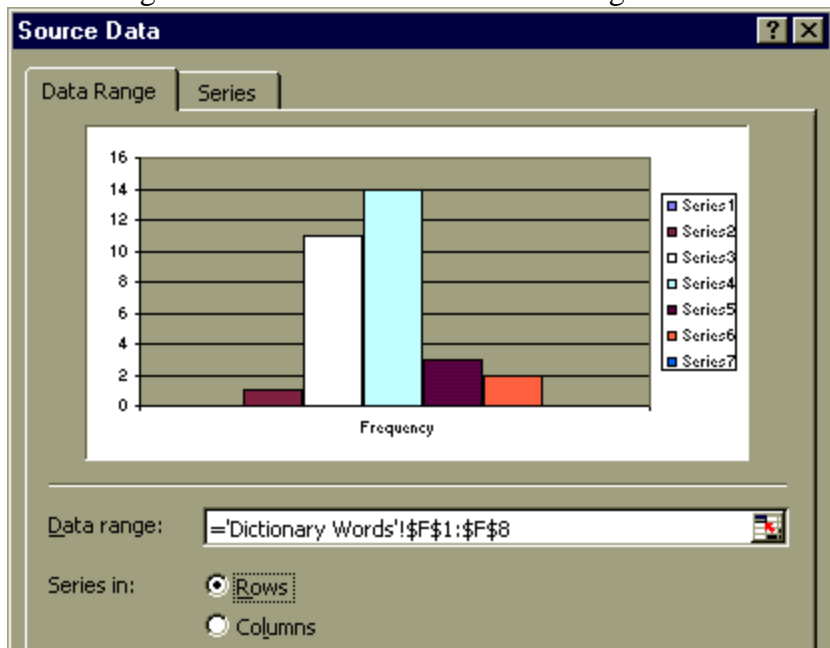
- Click on the “Data Range” tab of the “Chart Wizard - Step 2 of 4 – Chart Source Data” dialog box.



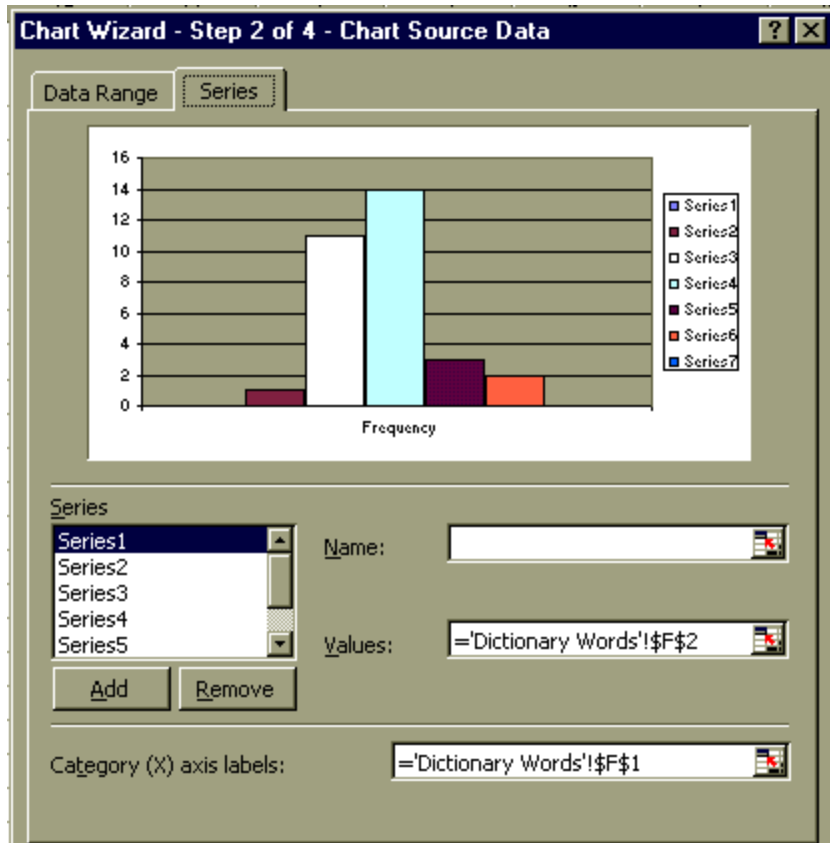
- Highlight cells F1 through F8.



- Click the radio button next to “Rows” in the “Series in:” section of the “Data Range” sheet on the “Source Data” dialog box.



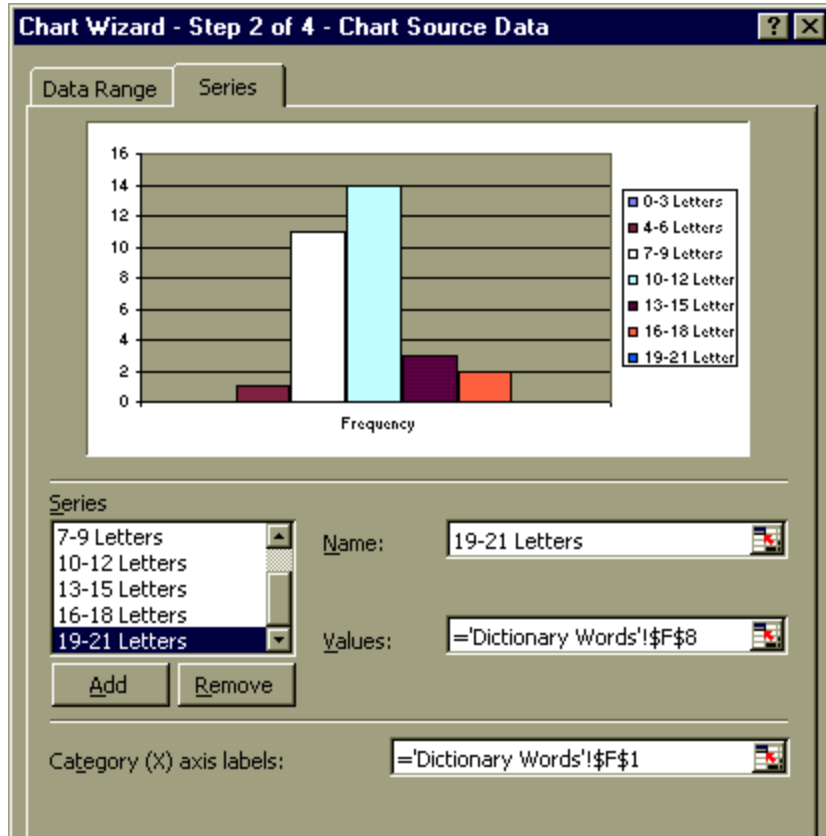
- Click on the “Series” tab of the “Source Data” dialog box. This causes the “Chart Wizard – Step 2 of 4 – Chart Source Data” dialog box with the “Series” sheet to be displayed.



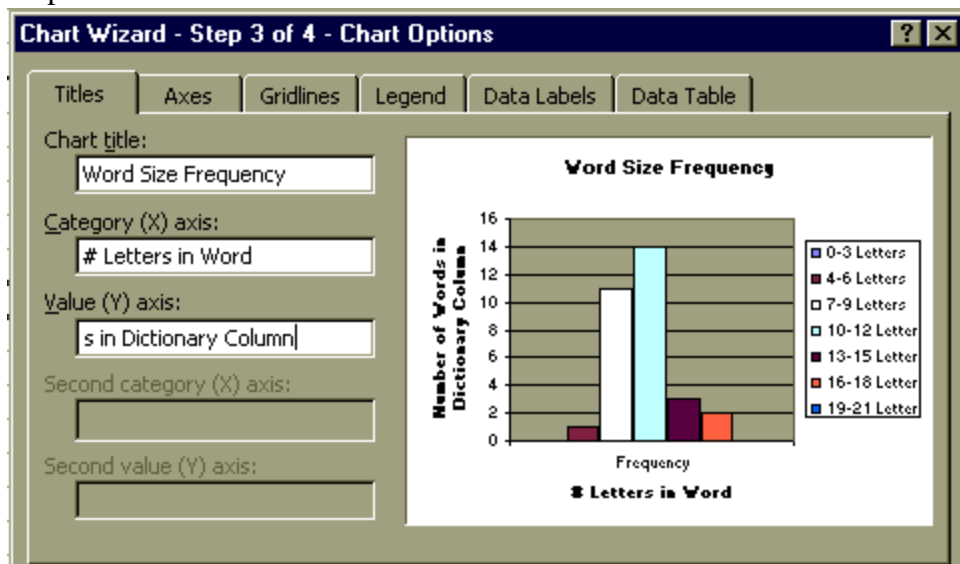
This is the dialog box to use to add or remove additional data.

- Rename Series to identify the number of letters per word in each bin.
 - Rename “Series1” to “0-3 Letters”
 - Select “Series1” in the “Series” selection box of the “Series” sheet of the “Chart Wizard – Step 2 of 4 – Chart Data Source” dialog box.
 - Click in the “Name:” edit box in the “Series” sheet of the “Chart Wizard – Step 2 of 4 – Chart Data Source” dialog box.
 - Enter “0-3 Letters”
 - Rename “Series2” to “4-6 Letters”
 - Rename “Series3” to “7-9 Letters”
 - Rename “Series4” to “10-12 Letters”
 - Rename “Series5” to “13-15 Letters”
 - Rename “Series6” to “16-18 Letters”

- Rename “Series7” to “19-21 Letters”

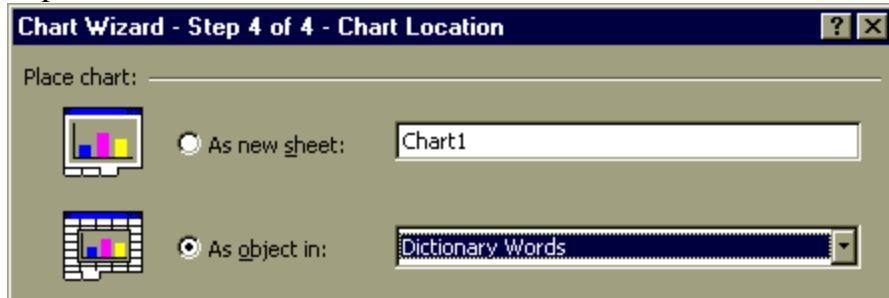


- Click in the “Category (x) axis labels:” edit box.
- Click the “Next” button in the “Chart Wizard” dialog box to advance to Step #3.

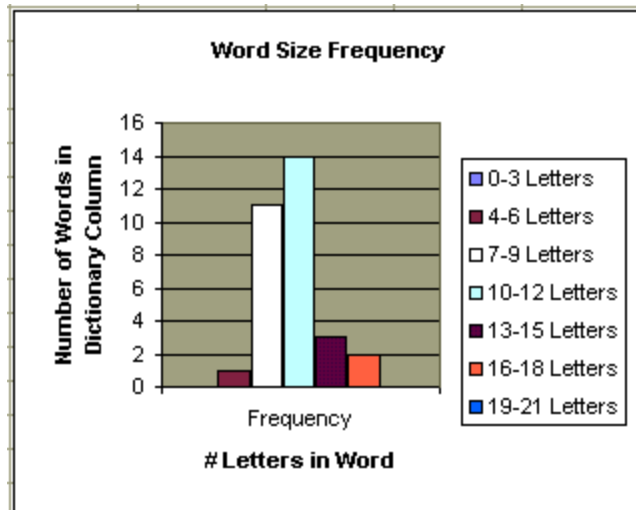


- Click on the “Titles” tab of the “Chart Wizard” dialog box.
- In the “Chart Title” edit box, enter the title “Word Size Frequency”.

- In the “Category (X) axis” edit box, enter the title “# Letters in Word”.
- In the “Value (Y) axis” edit box, enter the title “Number of Words in Dictionary Column”.
- Click the “Next” button in the “Chart Wizard” dialog box to advance to step #4.



- In the “Place Chart” section of the “Chart Wizard” dialog box, select “As object in”.
- Click the “Finish” button of the “Chart Wizard” dialog box.



- Position and size the histogram so that the histogram and the data table are both visible.

11	anaclitic	20	9	Word Size Frequency
12	anacrisis	16	9	

- Position the upper left corner of the histogram in the upper left corner of cell D11.
 - Size the histogram so the lower right corner is in the lower right corner of cell H25.
- Document the results in the header and footer.
 - Select File | Page Setup.
 - Select the “Header/Footer” tab of the “Page Setup” dialog box.

- Select “Custom Header”.
- Enter your name into the “Left Section” of the header.
- Enter “Histogram of Letters per Word” in the “Center Section” of the header.
- Enter the Date and Time into the “Right Section” of the header.
- Click the “OK” button on the “Header” dialog box.
- Click the “OK” button in the “Page Setup” dialog box.
- Print Preview. If satisfactory, **Print**.