Microsoft Excel Charts
Hands-On Workshop
Spring 2006

Workshop Objectives
Using a pre-made worksheet, create a:
- pie chart
- line chart
- column chart
- bar chart
Use the VLOOKUP function

Purposes of Charts
- A picture is worth a thousand words
- Charts convey information quickly
- Different charts convey different things:
  - Pie: proportional relationships
  - Line: trends over time
  - Bar and Column: quantities

What Charts Will We Make?
Using different data items, we'll make the following charts…
We’ll Make This PIE CHART

Using this data we’ll make this chart.

We’ll Make This LINE CHART

Using the highlighted data, we’ll make the LINE CHART shown on the next slide.

Using the highlighted data, we’ll make the COLUMN and BAR Charts shown on the next slides.
Let’s Make a Chart!

A Simple Pie Chart

Why a PIE CHART?

• To show proportional relationships
• Other examples:
  – Breakdown of ethnic groups
  – age groups
  – donors
Let's Make A Chart!

Here are the steps we'll use:
1. Select data that must go into the chart by clicking and dragging our mouse over the data
2. Click on the Chart Wizard icon
3. Follow the Wizard! We'll show you how…

Select Your Data

Select Your Data

Click and drag over cells A3 to B8

Click on the Chart Wizard Icon

Click on the Chart Wizard Icon

Click here

Pie Chart

Pie Chart

1. Click here
2. Select this chart subtype
3. Click when ready
Data Range

• These dialog boxes are used to select the data that goes into the chart.
• If we selected the right data before starting the Wizard, this should not need to be changed.

Tips:
- Tip: If the actual values are important for readers to know, be sure to use this setting.

Titles

1. Edit Title If Needed
2. Click here to go to Legend

Tips:
- Tip: Putting the legend at the TOP or BOTTOM gives you a larger pie chart.
- Tip: Always use a legend so your readers know what each pie segment represents.

Legend

1. Click here
2. Click here to go to Data Labels

Tips:
- Tip: If the actual values are important for readers to know, be sure to use this setting.

Data Labels

1. Click here
2. Click when ready
Chart Placement

1. Give the sheet a name, i.e., “PieChart”

2. Click when ready

Tip: Saving the chart as a NEW SHEET makes your work easy. The chart will not have to be moved and resized.

Parts of A PIE CHART

- Title
- Value labels
- Legend

Chart Area is the area around the chart itself

Data Series are the pieces of the pie
You Can Make These Changes:

• font, color, size, alignment, and style of the labels, legend, and title
• color of the pie pieces
• placement of the chart so it is located somewhere else like the Grade Book worksheet
• chart type – you could turn the pie chart into a bar chart, for example.

• We’ll change some of the colors of the pie pieces and text.

Patterns Dialog Box

You can change:
• background color (around the text)
• border around the text

Click to Move to Font Dialog Box

Patterns Dialog Box

You can change:
• font type
• style
• size
• color of text
• color of background
• effects

Note: We’ll change Alignment on another chart.
Now It’s Your Turn!
Right-Click on other text items.
Change font style, size, color, etc.

Let’s Make A Line Chart!
Use For Time-Related Data
To Show Trends Over Time

Same Process Used for our First Chart:
Here are the steps we’ll use:
1. Select data that must go into the chart by clicking and dragging our mouse over the data
2. Click on the Chart Wizard icon
3. Follow the Wizard! We’ll show you how…

Select Your Data
Click and drag over cells A3 to D8

<table>
<thead>
<tr>
<th>Student Name</th>
<th>Quiz 1</th>
<th>Quiz 2</th>
<th>Quiz 3</th>
</tr>
</thead>
<tbody>
<tr>
<td>Jones, Mel</td>
<td>25</td>
<td>25</td>
<td>50</td>
</tr>
<tr>
<td>King, Alexandra</td>
<td>20</td>
<td>25</td>
<td>20</td>
</tr>
<tr>
<td>Rios, Kristi</td>
<td>15</td>
<td>25</td>
<td>40</td>
</tr>
<tr>
<td>Sua, John</td>
<td>15</td>
<td>10</td>
<td>50</td>
</tr>
<tr>
<td>Tran, Val</td>
<td>25</td>
<td>20</td>
<td>35</td>
</tr>
</tbody>
</table>
Click on the Chart Wizard Icon

Select Line Chart With Markers, Then Click Next Button

Be Sure Your Screen Matches This, Then Click Next Button

Type A Title and Axis Labels Then Click Legend Tab
Put the Legend on the Bottom Then Click Data Labels Tab

Click the box to display VALUE, Then Click Next Button

If the actual value is not important, you don’t need to do this.

Be Sure Your Screen Matches This, Then Click Next Button

Put the chart in a New Sheet Named “LineChart” and then Click the Finish Button.
Your Line Chart!

Remember That You Can Make Changes To The Chart:

- font, color, size, alignment, and style of the labels, legend, and title
- color of the lines or style of the markers on the lines
- placement of the chart so it is located somewhere else like the Grade Book worksheet
- chart type – you could turn the line chart into a bar chart, for example.

Right-Click on a line or on text, then make changes.

Changing Text Alignment

Right-Click on ‘Score’ and Click on Format Axis Title

Tip: If an Axis Label is long, it takes up a lot of space, reducing the size of your chart. Making it Vertically Aligned (90 degrees) reduces the space the label needs and enlarges your chart size.

Changing Text Alignment

Click on a point to change the orientation of the label.

Click here when ready
Changing Text Alignment

Label is vertically aligned, taking up less space.

Two More Charts....

- Column and Bar Charts are used to show quantities or values.
- Comparisons are often made using these charts.
- Here’s what they look like.....

Column Chart

Think of the COLUMNS of a building.

Bar Chart: Horizontal instead of Vertical

- Note: Differences between bars looks greater when using a bar chart instead of a column chart. There is more visual impact, so be careful!
Making Bar & Column Charts

- We don’t have time to make them here, step by step, from the beginning.
- **Practice** making those on your own later.
- Since our time is limited, we’ll make them by CHANGING the line chart into a Column Chart or Bar Chart.

Right-Click in the white area around the chart (this is the chart area).

Select either Column or Bar Chart type. Click on one of the 3D sub-types as shown below.

- **Column Type**
  - Clustered Column with 3D Effect
  - Subtype
- **Bar Type**
  - Clustered Bar with 3D Effect
  - Subtype

Click OK when ready.

The VLOOKUP Function

Automatically determines and displays the letter grade equivalent for a numeric value.
Let’s Type the Function, then Examine It.
1. Click on cell F4
2. Type =vlookup(e4,$g$3:$h$7,2)
3. Press ENTER key

The Function’s Result: The letter grade ‘A’
- The function appears in the formula bar
- Its result is displayed in cell F4

Let’s Examine the Function
What does VLOOKUP do?
1. Take a numeric value like a number grade
2. Look it up in a table like our Grading Scale
3. Return/display its corresponding letter grade

Let’s Examine the Function
1. Take the value in cell E4 which is the NUMERIC grade. This is the basis for the LETTER grade.
=VLOOKUP(E4,$G$3:$H$7,2)
Let’s Examine the Function

2. Tell the computer where the Grading Scale begins, which is cell G3.

\[=\text{VLOOKUP}(E4,\$G\$3:\$H\$7,2)\]

3. Tell the computer where the Grading Scale ends which is cell H7.

\[=\text{VLOOKUP}(E4,\$G\$3:\$H\$7,2)\]

4. After comparing the numeric value from E4 to the Grading Scale’s cells (G3 to H7), display the matching value in Column 2 of the Grading Scale.

\[=\text{VLOOKUP}(E4,\$G\$3:\$H\$7,2)\]

Why the Dollar Signs?

Let’s learn about relative and absolute references first. References are the names of cells.
Relative vs. Absolute References

- **Relative** references change when they are moved or pasted from one cell to another.
- **Absolute** references never change.
- Since the location of the grading scale is static, we should use absolute references so that if the vlookup functions are pasted or moved, the references to the grading scale do not change.

### RELATIVE, MIXED & ABSOLUTE REFERENCES

<table>
<thead>
<tr>
<th>Contents of cell</th>
<th>When Copied to H9:</th>
</tr>
</thead>
<tbody>
<tr>
<td>$E$8</td>
<td>$E$8</td>
</tr>
<tr>
<td>E8</td>
<td>F$8</td>
</tr>
<tr>
<td>$E$8</td>
<td>$E$9</td>
</tr>
<tr>
<td>E8</td>
<td>F9</td>
</tr>
</tbody>
</table>

Copy the function to the rest of the cells (F5 to F8). **Remember the FILL feature?**

The Result

- Try changing the quiz grades and the numeric/letter grades will change automatically.
- If the grading scale is moved, the references are automatically updated by Excel.
Upcoming Workshops:

- Inspiration Hands On Workshops
- PowerUser Workshop: Gradebooks and 3D references
- Check the bulletin: http://news.kcc.hawaii.edu/
- Check the CELTT website for handouts & additional material: www.hawaii.edu/kccceltt

Thanks for Joining Us!