DATA CONSOLIDATION

This option is used to define ranges of cells from multiple worksheets and have Excel summarize the data into a single worksheet. With the Consolidate command, it is possible to use several functions to consolidate data such as SUM, AVERAGE, MAX, or MIN. Prior to consolidating data, it is a good idea to open and arrange on-screen the worksheets or workbooks that contain the data that are to be used. When Consolidate is used to link worksheets and/or workbooks, the 3-D references are inserted into the dialog box. To consolidate worksheets, complete the steps below.

Link Worksheets

✦ Open the document EMP Monthly Earnings (Link Worksheets) from the area where the files that were downloaded from the Excel Training Web page are stored.
✦ Select cells C3 through D6 from the Monthly Total worksheet.
✦ Click the Data Tab.
✦ In the Data Tools Group, click the Consolidate button.
✦ The Consolidate dialog box will open (see illustration).
✦ If Sum is not displayed in the Function box, click the drop-down arrow and choose Sum.
✦ In the References box, click the Collapse button (see illustration above).
✦ The dialog box will display just the Reference row (see illustration below).

✦ Click the Week 1 tab and then select cells C3 through D6.
✦ Click the Expand button on the Consolidate - Reference dialog box (see illustration below).

✦ The reference ‘Week 1’!$C$3:$D$6 appears in the Consolidate - Reference box.
Click the **Add** button to add this information to the **All References** box. 
With the **Consolidate** dialog box still active, click the **Week 2** tab. 
The reference in the **Consolidate - Reference** box should change to **Week 2**. 
The rest of the reference should remain the same as the reference for **Week 1**. 
Click the **Add** button to insert this reference into the **All references** list. 
Continue the above process to add the references for **Week 3** and **Week 4**. 
The **Consolidate** dialog box should look like the illustration below. 

After the four references have been added to the **Consolidate** dialog box, click the **OK** button. 
The cumulative totals for these four worksheets should be displayed in the **Monthly Total** worksheet. 

**Link Workbooks**

Open the following documents from the folder where the documents that were downloaded from the Excel Training Web page were stored. 

- **EMP Monthly Earnings (Link Workbooks)**
- **EMP Week 1**
- **EMP Week 2**
- **EMP Week 3**
- **EMP Week 4**

Click **EMP Monthly Earnings (Link Workbooks)** from the Excel workbooks list. 
Select cells **C3** through **D6** in this workbook. 
Click the **Data Tab**. 
In the **Data Tools Group**, click the **Consolidate** button. 
The **Consolidate** dialog box will open (see illustration on next page). 
If **Sum** is not displayed in the **Function** box, click the drop-down arrow and choose **Sum**. 
Click the **Create Links to Source Data** check box. 
With this option, links are created to each of the worksheets. 
When the data is updated in the original documents, it will be updated in the workbook where the consolidation was created.
Click the Collapse button in the Reference box.
Click the EMP Week 1 tab on the Task Bar.
Select cells C3 through D6 in this workbook.
Click the Expand button on the Consolidate - Reference dialog box (see illustration below).
The reference [EMP Week 1]Sheet 1!$C$3:$D$6 appears in the Reference box.

Click the Add button to add this information to the All References box.
Delete the information in the **Consolidate-Reference** dialog box.

Continue the above process to add the references for **Week 2**, **Week 3** and **Week 4**.

* This option works differently than when you were linking Worksheets.
* When Workbooks are linked, you have to select the range in each workbook.
* The range doesn’t stay selected for each one.

The **Consolidate** dialog box should look like the illustration on the previous page.

Click the **OK** button.

**Viewing Data from Links**

Once the data has been consolidated, it is possible to view it in different ways. These ways are described in this section.

Look at the **Row Numbers**. You will notice that some rows are not displayed.

<table>
<thead>
<tr>
<th></th>
<th>A</th>
<th></th>
<th>B</th>
<th></th>
<th>C</th>
<th></th>
<th>D</th>
</tr>
</thead>
<tbody>
<tr>
<td>1</td>
<td></td>
<td></td>
<td><strong>Monthly Payroll Totals</strong></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>2</td>
<td>Employee</td>
<td>Rate of Pay</td>
<td>Hours Worked</td>
<td>Gross Pay</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>+</td>
<td>7</td>
<td>A3121</td>
<td>14.15</td>
<td>182.76</td>
<td>2,595.91</td>
<td></td>
<td></td>
</tr>
<tr>
<td>+</td>
<td>12</td>
<td>B4325</td>
<td>12.75</td>
<td>188.60</td>
<td>2,404.66</td>
<td></td>
<td></td>
</tr>
<tr>
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<td>17</td>
<td>H9891</td>
<td>21.95</td>
<td>142.60</td>
<td>3,127.88</td>
<td></td>
<td></td>
</tr>
<tr>
<td>+</td>
<td>22</td>
<td>K7198</td>
<td>13.60</td>
<td>182.35</td>
<td>2,479.96</td>
<td></td>
<td></td>
</tr>
<tr>
<td>23</td>
<td>Total</td>
<td></td>
<td></td>
<td>1,209.65</td>
<td>18,610.88</td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

Click the **Number 2** in the **Level** area on the left side of the worksheet.

The numbers that were consolidated will be displayed, as well as the totals.

Click the **Number 1** button to show just the **Totals**.

To display the consolidated data for each individual section, click the **Show Detail** button. This is the plus (+) sign beside the total for the category.

To remove the display for the consolidated data for each of the data categories, click the **Hide Details** button. This is the minus (-) sign that will appear beside the total for the category after the plus (+) sign is clicked.

Close the document and save the changes.