

# Assignment 1 – MIS Spreadsheet (Excel)

## Summary

Create a Microsoft Excel file with six worksheets that provides extensive use of Excel capabilities including: importing data, formatting data in tables, summarizing data using pivot tables, and creating visual representation of the data using charts. Use the summary information created as an MIS-DSS (Management Information System - Decision Support System) with written analysis and recommendations in support of the business enterprise.

A large rental car company has two metropolitan locations, one at the airport and another centrally located in city. It has been operating since 2015 and each location summarizes its car rental revenue quarterly. Both locations rent two classes of cars: **Economy** and **Premium**. Rental revenue is maintained separately for the two classes of rental vehicles.

The data for this case resides in the file **Car-Rental-Data.txt** and can be downloaded by clicking on the Assignments tab, then on the data file name. It is an ASCII text file (with file type **.txt**). **Do not create your own data.** You must use the data provided and only the data provided.

	Requirement	Comments
1	Open Excel and save a blank worksheet with the following name: a) “ <b>Asgn1-MIS-YourName.xlsx</b> ” Example: <b>Asgn1-MIS-JohnSmith.xlsx</b> b) Set Page Layout >> Orientation to <b>Landscape</b>	Use Print Preview to review how spreadsheet would print.
2	a) Double-click on <b>Sheet1</b> tab at bottom and change worksheet name to <b>Analysis by</b>	
3	a) In the <b>Analysis by</b> worksheet, place a blank row between each label and enter the four labels vertically in column A in the following order: <b>Name:</b> , <b>Class:</b> , <b>Project:</b> , and <b>Date Due:</b> b) Please note the colon, (:) after each label. c) Align the labels to the right in the cell d) You may need to adjust the column width so labels are clearly visible.	Use text format: Arial 12 point <b>Bold</b> Align Right in cell
4	a) In the <b>Analysis by</b> worksheet, with all entries in <u>column B</u> , enter the appropriate values for Name, Class and Section, Project, Date Due. b) You may need to adjust the column width so labels are clearly visible. c) Use the formatting listed in the <b>Comments</b>	Use text format: Arial 12 point Regular Align Left in cells
5	a) Create a new worksheet by clicking on + tab at bottom next to <b>Analysis by</b> tab and name this second worksheet: <b>Data</b>	

	Requirement	Comments
6	<ul style="list-style-type: none"> <li>a) Download the text file <b>Car-Rental-Data.txt</b> from LEO.</li> <li>b) Select the <b>Data</b> worksheet tab at bottom.</li> <li>c) Select <b>Data</b> ribbon tab at top and <b>From Text</b> ribbon item to import the text file <b>Car-Rental-Data.txt</b> Select <b>Delimited</b> and file origin <b>Windows (ANSI)</b> then <b>Next&gt;</b></li> <li>d) Select <b>Delimiters Tab</b> and then <b>Next&gt;</b> and <b>Finish</b></li> </ul>	
7	<p>In the <b>Data</b> worksheet,</p> <ul style="list-style-type: none"> <li>a) Select <b>Home</b> ribbon tab at top and <b>Data</b> worksheet</li> <li>b) Select columns A, B, C, and D set datatype to Text.</li> <li>c) Select column E Revenue, set datatype to Currency \$ and remove cents place holders so only whole dollars are displayed.</li> <li>d) Select column F NumCars, set datatype to Numbers and show ,</li> </ul> <p>Though the intent is to import the text file into the Data worksheet, sometimes text data is imported into a new worksheet. If this happens, delete the blank Data worksheet, and then rename the new worksheet which HAS the recently imported data as "Data."</p>	Format all data (field names and numbers) to Arial Regular 10 point.
8	<p>In the <b>Data</b> worksheet,</p> <ul style="list-style-type: none"> <li>a) Select <b>Data</b> worksheet and <b>Home</b> ribbon tab at top</li> <li>b) Select any cell in the imported data and select ribbon item <b>Format as Table</b> selecting blue <b>Medium 2</b> style</li> <li>c) This style should highlight the field names in the first row. Undo and retry if it does not.</li> <li>d) Ensure NO blank spaces are part of the specified data range. Ensure the table has headers.</li> <li>e) Ensure that Header Row and Banded Rows are selected in the Table Style Options Group Box.</li> </ul>	Some adjustment may be necessary to column widths to insure all field names and all data are readable (not truncated or obscured).
9	<p>Copy the <b>Data</b> worksheet to a New Sheet and name it <b>Sorted</b></p> <ul style="list-style-type: none"> <li>a) Right click on Data worksheet tab and select <b>Move or Copy...</b></li> <li>b) Select (move to end) and check <b>Create a copy</b></li> <li>c) Rename this worksheet <b>Sorted</b> by double clicking bottom tab.</li> </ul>	
10	<p>In the <b>Sorted</b> worksheet, sort the data by location column sort A to Z</p> <ul style="list-style-type: none"> <li>a) Select <b>Data</b> worksheet and <b>Home</b> ribbon tab</li> <li>b) Select <b>Location</b> field <b>C1</b> and <b>Sort A to Z</b> ribbon item</li> </ul>	Insure all the table is selected for sorting, NOT just the location column.
11	<p>Copy the <b>Sorted</b> worksheet to a New Sheet and name it <b>Airport</b></p> <ul style="list-style-type: none"> <li>a) Right click on <b>Sorted</b> worksheet tab and select <b>Move or Copy...</b></li> <li>b) Select (move to end) and check <b>Create a copy</b></li> <li>c) Rename this worksheet <b>Airport</b> by double clicking bottom tab.</li> </ul>	

	Requirement	Comments
12	In the <b>Airport</b> worksheet, a) delete all the rows in the table where the data is for <b>City</b> b) the field names should remain at the top of the table, and c) the remaining data should be for the Airport location.	
13	In the <b>Airport</b> worksheet, Select <b>Sort &amp; Filter</b> ribbon item <b>Custom Sort</b> a) Sort by <b>CarClass</b> A to Z (Ascending), b) then by <b>Year</b> A to Z (Ascending), c) then by <b>Quarter</b> A to Z(Ascending).	Ensure that all cells with data have been selected to sort correctly
14	In the <b>Airport</b> worksheet, a) add a new column head AvgRev that calculates the Average Revenue for a row, it should autofomat the striped b) add a formula to cell G2 to calculate the AvgRev by dividing the Revenue by the NumCars for all rows in the table, and use 2 decimal points in the values. c) Adjust Column width as needed to view both the title and the data.	Use text format: Arial, 10 point, <b>Bold</b> Ensure all data values for AvgRev are Currency \$ format
15	In the <b>Airport</b> worksheet, on the third row below the final row of the data, create label: <b>Average Quarterly Revenue per Economy Car (Airport)</b>	Use text format: Arial 10 point <b>Bold</b>
16	In the <b>Airport</b> worksheet, a) in the first fully visible cell to the right of the label, b) calculate the Average Quarterly Revenue per Economy Car (Airport) using the appropriate cell range and <b>Average ()</b> function c) Ensure the Average is Currency \$ format with two decimal points.	Use text format: Arial 10 point <b>Bold</b>
17	In the <b>Airport</b> worksheet, on the fourth row below final row of the data, create label: <b>Average Quarterly Revenue per Premium Car (Airport)</b>	Use text format: Arial 10 point <b>Bold</b>
18	In the <b>Airport</b> worksheet, a) in the first fully visible cell to the right of the label, b) calculate the Average Quarterly Revenue per Economy Car (Airport) using the appropriate cell range and <b>Average ()</b> function c) Ensure the Average is Currency \$ format with two decimal points	Use text format: Arial 10 point <b>Bold</b>

	<b>Requirement</b>
<b>19</b>	<p>In the <b>Airport</b> worksheet,</p> <ul style="list-style-type: none"> <li>a) create a column chart that clearly shows the average revenue per economy car (y-axis) versus the quarter for 2015 (x-axis).</li> <li>b) Provide a chart title that explains what is portrayed on the graph.</li> <li>c) Add Data Labels that are Outside End and color bars Green</li> <li>d) Place the chart to the right of the data.</li> </ul>
<b>20</b>	<p>In the <b>Airport</b> worksheet,</p> <ul style="list-style-type: none"> <li>a) create a column chart that clearly shows the average revenue per premium car (y-axis) versus the quarter for 2015 (x-axis).</li> <li>b) Provide a chart title that explains what is portrayed on the graph.</li> <li>c) Add Data Labels that are Outside End and color bars Blue</li> <li>d) Place the chart to the right of the data and below the first chart.</li> </ul>
<p>For the questions below, present your answers in a very readable format under the data. These answers must be placed on the Airport worksheet below your data tables and charts. If you simply type your answer on a single line in Column A, that will also be ok. But be sure the entire answer can be read without the reader having to change any formatting. Format text as Arial 10 point Regular Blue Align Left</p>	
<b>21</b>	<b>Question 1:</b> Is there a trend that is shared between the Economy and Premium average revenue per car based on the two graphs? Along with the yes or no explain why there is or why there is not a trend.
<b>22</b>	<b>Question 2:</b> Explain one possible cause for the average revenue per share in Q3. The answer should relate to both economy and premium cars.

## Initial Analysis using Pivot Tables

<b>23</b>	<p>Copy the <b>Data</b> worksheet to a New Sheet and name it <b>Initial Analysis</b></p> <ul style="list-style-type: none"> <li>a) Right click on Data worksheet tab and select <b>Move or Copy...</b></li> <li>b) Select (move to end) and check <b>Create a copy</b></li> <li>c) Rename new worksheet <b>Initial Analysis</b> using right click</li> </ul>
<b>24</b>	<p>Select the <b>Initial Analysis</b> worksheet:</p> <p>Delete all 2017 data. There should be one row for titles and 32 rows of quarterly 2015 and 2016 data after the 2017 data is deleted.</p>

	Requirement	Comments
25	<p>In the <b>Initial Analysis</b> worksheet, create a Pivot Table. Watch the video on Pivot Tables in the Excel Tutorials posted in LEO for your Excel version.</p> <ol style="list-style-type: none"> <li>Select one cell of your Excel table or all cells of interest.</li> <li>Select <b>Insert</b> ribbon and select PivotTable item.</li> <li>Select Existing worksheet and row 1 cell two columns to right of the data which is likely H1 and OK button.</li> <li>The Pivot table fields dialog area will open. Drag Location field to Columns, CarClass to Rows, and Revenue to Values. This will create the pivot table that shows the summary data for Economy as well as Premium class cars (rows), and display the total revenue for both Airport and City locations (columns), and include a total of all revenue for each location and each vehicle type.</li> </ol>	<p>Format the Pivot Table Adjust column width</p> <p>Format for all data as currency \$ with no cents decimal places, Arial, 10, regular</p>
26	<p>In the <b>Initial Analysis</b> worksheet, create a graph that shows the total revenue for both vehicle types at each location.</p> <ol style="list-style-type: none"> <li>The upper left corner of the graph should be one or two rows below the above referenced pivot table and left aligned with the pivot table.</li> <li>Insure the location and type of car is clearly indicated in the graph. Only use 2015 and 2016 data.</li> </ol>	<p>The graph should allow a viewer to determine approximate revenue totals for each vehicle total revenue at each location.</p>
27	<p>In the <b>Initial Analysis</b> worksheet, <b>Question 3:</b> Which location, for 2015 and 2016 combined, produced the most revenue? How much revenue was it?</p>	<p>Answer Question in space below graph. Arial, 10 point., normal, blue</p>

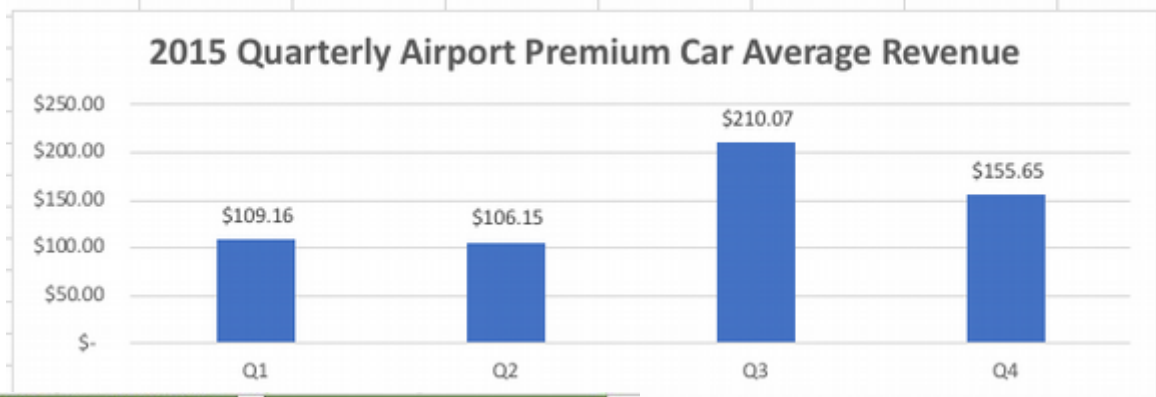
## Profit Analysis using Pivot Tables

28	<p>Copy the <b>Data</b> worksheet to a New Sheet and name it <b>Profit Analysis</b></p> <ol style="list-style-type: none"> <li>Right click on Data worksheet tab and select <b>Move or Copy...</b></li> <li>Select (move to end) and check <b>Create a copy</b></li> <li>Rename new worksheet <b>Profit Analysis</b> using right click</li> </ol>	
29	<p>Select the <b>Profit Analysis</b> worksheet:</p> <p>Delete all 2017 data. There should be one row for titles and 32 rows of quarterly 2015 and 2016 data after the 2017 data is deleted.</p>	
30	<p>In the <b>Profit Analysis</b> worksheet, in the column to the immediate right of NumCars label, create a label called <b>Overhead</b>.</p>	<p>Arial, 10 point, <b>Bold</b></p>
31	<p>In the <b>Profit Analysis</b> worksheet, in the next column to the right, create a label called <b>Profit</b>.</p>	<p>Arial, 10 point, <b>Bold</b></p>
32	<p>In the <b>Profit Analysis</b> worksheet, in the next column to the right, create a label called <b>Profit per Car</b></p>	<p>Arial, 10 point, <b>Bold</b></p>

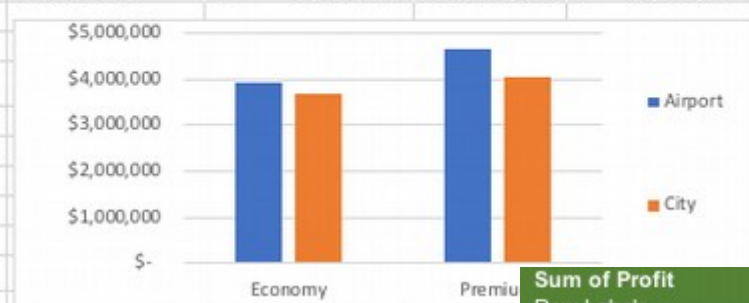
	<b>Requirement</b>	<b>Comments</b>
33	<p>In the <b>Profit Analysis</b> worksheet, in the first cell only under the <b>Overhead</b> label, calculate the overhead that corresponds to the number of NumCars. Overhead costs include maintenance, cleaning, and administrative expenses associated with a car rental. The Overhead for one rental transaction is \$50 for an economy car and \$75 for a premium car.</p> <p>Use an IF statement in the calculation to determine whether to use \$50 or \$75 times the NumCars so that the Overhead value represents the total Overhead costs for the Number of Cars (NumCars) rented.</p> <p>Copy the formula for <b>Overhead</b> to all the cells below in the column. Adjust the column width if necessary for legibility</p>	<p>No credit if an IF function is NOT used.</p> <p>Format for Overhead calculation: Currency \$ with no decimal points. Arial, 10 point, Regular, Align right in the cell</p>
34	<p>In the <b>Profit Analysis</b> worksheet, <b>Profit</b> represents the difference between Revenue and Overhead (Revenue – Overhead). Profit is for all cars rented during the quarter.</p> <p>a) In the first cell below Profit, calculate the profit, then copy the formula for all cells in that column.</p> <p>b) Adjust the column width if necessary for legibility.</p>	<p>Currency \$ with no decimal points. Arial, 10 point, Regular, Align right in the cell</p>
36	<p>In the <b>Profit Analysis</b> worksheet, in the next cell down under the <b>Profit per Car label</b>, calculate the profit per car rented and copy the formula for all cells below.</p>	<p>Currency \$ with TWO decimal points. Arial, 10 point, <b>Bold</b></p>
37	<p>In the <b>Profit Analysis</b> worksheet, create a Pivot Table that provides the total profit for both car class rented (columns) as well as totals by location (rows). Include a grand <b>total profit</b> for all cars rented. Position the upper left corner of the Pivot Table in Row 1 two columns to the right of the table.</p>	<p>Format for Pivot Table (text and data): Arial 10 pt Normal Currency (no decimal places)</p>
38	<p>In the <b>Profit Analysis</b> worksheet, create a Pivot Table that shows the <b>Average Profit</b> per car, averaged by car class (columns) and averaged by location (rows). Position the upper left corner to align with the pivot table above and two rows below the pivot table above. The column and row categories should match those of the above pivot table but average function will be used not sum</p>	<p>Format for Pivot Table (text and data): Arial 10 pt Normal Currency (TWO decimal places)</p>
39	<p><b>Question 4:</b> In the <b>Profit Analysis</b> worksheet, which location generates the greater total profit? How much was that total profit?</p>	<p>Answer Question in space below pivot tables.</p>
40	<p><b>Question 5:</b> In the <b>Profit Analysis</b> worksheet, which vehicle in which location has the highest average profit? How much was that average profit?</p>	<p>Arial, 10 point, regular, blue</p>

Upload your **Asgn1-MIS-JohnSmith.xlsx** in the Assignment 1 folder on LEO.

## 2015 Quarterly Airport Car Average Revenue



Sum of Revenue	Column Labels	Airport	City	Grand Total
Economy		\$ 3,909,940	\$ 3,693,960	\$ 7,603,900
Premium		\$ 4,650,176	\$ 4,047,444	\$ 8,697,620
<b>Grand Total</b>		<b>\$ 8,560,116</b>	<b>\$ 7,741,404</b>	<b>\$ 16,301,520</b>



Sum of Profit	Column Labels	Economy	Premium	Grand Total
Airport		\$ 2,503,740.00	\$ 2,591,801.00	\$ 5,095,541.00
City		\$ 2,169,060.00	\$ 2,021,994.00	\$ 4,191,054.00
<b>Grand Total</b>		<b>\$ 4,672,800.00</b>	<b>\$ 4,613,795.00</b>	<b>\$ 9,286,595.00</b>

Average of Profit per Car	Column Labels	Economy	Premium	Grand Total
Airport		\$ 89.90	\$ 93.65	\$ 91.78
City		\$ 73.05	\$ 74.35	\$ 73.70
<b>Grand Total</b>		<b>\$ 81.47</b>	<b>\$ 84.00</b>	<b>\$ 82.74</b>