MONASH University

FIT1013 Digital Futures: IT for Business
Week 2: Excel Tables, Pivot Tables and Pivot Charts

On completion of your study this week, you should aim to:

- Create and modify an Excel Table
- Create and modify a PivotTable
- Apply PivotTable styles and formatting
- Filter a PivotTable
- Create a PivotChart
- Explore data visualization in Tableau

GROUP OF EIGHT AUSTRALIA

How do you want to view this data?

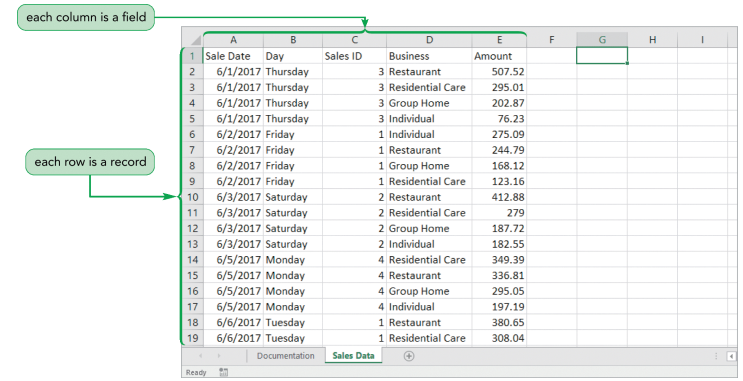
D10 | Restaurant

	A	B	C	D	E
1	Sale Date	Day	Sales ID	Business	Amount
2	1/6/17	Thursday	3	Restaurant	507.52
3	1/6/17	Thursday	3	Residential Care	295.01
4	1/6/17	Thursday	3	Group Home	202.87
5	1/6/17	Thursday	3	Individual	76.23
6	2/6/17	Friday	1	Individual	275.09
7	2/6/17	Friday	1	Restaurant	244.79
8	2/6/17	Friday	1	Group Home	168.12
9	2/6/17	Friday	1	Residential Care	123.16
10	3/6/17	Saturday	2	Restaurant	412.88
11	3/6/17	Saturday	2	Residential Care	279
12	3/6/17	Saturday	2	Group Home	187.72
13	3/6/17	Saturday	2	Individual	182.55
14	5/6/17	Monday	4	Residential Care	349.39
15	5/6/17	Monday	4	Restaurant	336.81
16	5/6/17	Monday	4	Group Home	295.05
17	5/6/17	Monday	4	Individual	197.19
18	6/6/17	Tuesday	1	Restaurant	380.65
19	6/6/17	Tuesday	1	Residential Care	308.04
20	6/6/17	Tuesday	1	Group Home	221.11
21	6/6/17	Tuesday	1	Individual	192.05
22	7/6/17	Wednesday	5	Restaurant	346.84
23	7/6/17	Wednesday	5	Group Home	170.24
24	7/6/17	Wednesday	5	Individual	158.33
25	7/6/17	Wednesday	5	Residential Care	158.25
26	8/6/17	Thursday	2	Restaurant	459.72
27	8/6/17	Thursday	2	Individual	238.89
28	8/6/17	Thursday	2	Group Home	217.6
29	8/6/17	Thursday	2	Residential Care	168.59
30	9/6/17	Friday	1	Individual	499
31	9/6/17	Friday	1	Restaurant	330.87
32	9/6/17	Friday	1	Group Home	207.79
33	9/6/17	Friday	1	Residential Care	196.15
34	10/6/17	Saturday	3	Individual	323.49
35	10/6/17	Saturday	3	Restaurant	281.68
36	10/6/17	Saturday	3	Group Home	194.68

Planning a Structured Range of Data

- A collection of similar data can be structured in a range of columns and rows, representing fields and records, respectively
  - Each column represents a field, which is a single piece of data
  - Each row represents a record, which is a group of related fields
- A structured range of data is commonly referred to as a list or table

Planning a Structured Range of Data



	A	B	C	D	E
1	Sale Date	Day	Sales ID	Business	Amount
2	6/1/2017	Thursday	3	Restaurant	507.52
3	6/1/2017	Thursday	3	Residential Care	295.01
4	6/1/2017	Thursday	3	Group Home	202.87
5	6/1/2017	Thursday	3	Individual	76.23
6	6/2/2017	Friday	1	Individual	275.09
7	6/2/2017	Friday	1	Restaurant	244.79
8	6/2/2017	Friday	1	Group Home	168.12
9	6/2/2017	Friday	1	Residential Care	123.16
10	6/3/2017	Saturday	2	Restaurant	412.88
11	6/3/2017	Saturday	2	Residential Care	279
12	6/3/2017	Saturday	2	Group Home	187.72
13	6/3/2017	Saturday	2	Individual	182.55
14	6/5/2017	Monday	4	Residential Care	349.39
15	6/5/2017	Monday	4	Restaurant	336.81
16	6/5/2017	Monday	4	Group Home	295.05
17	6/5/2017	Monday	4	Individual	197.19
18	6/6/2017	Tuesday	1	Restaurant	380.65
19	6/6/2017	Tuesday	1	Residential Care	308.04

Documentation | Sales Data | Ready

Planning a Structured Range of Data

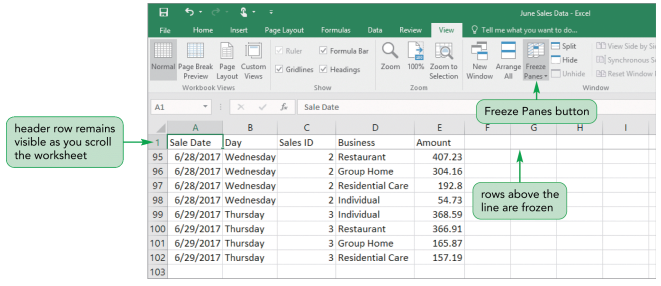
- Common operations for working with data:
  - Add, edit, and delete data in the range
  - Sort the data range
  - Filter to display only rows that meet specified criteria
  - Insert formulas to calculate subtotals
  - Create summary tables based on the data in the range (usually with PivotTables)

Planning a Structured Range of Data

- Creating an Effective Structured Range of Data
  - Enter field names in top row of range
  - Use short, descriptive field names
  - Format field names to distinguish header row from data
  - Enter the same kind of data in a field
  - Separate data (including header row) from other information in the worksheet by *at least* one blank row and one blank column

Freezing Rows and Columns

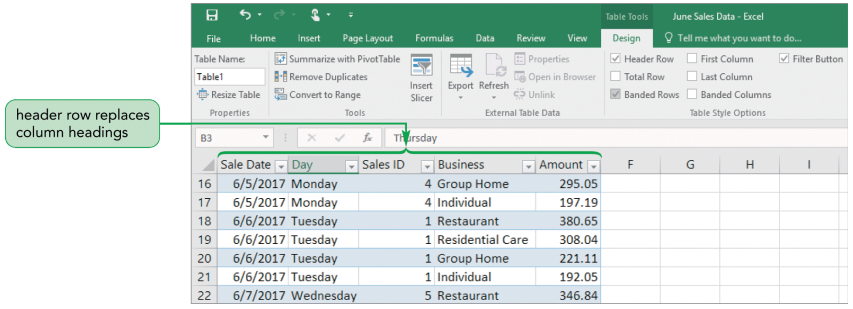
- **Freezing** a row or column keeps headings visible as you work with data in a large worksheet



Creating an Excel Table

- Excel tables make it easier to identify, manage, and analyze the groups of related data
- When a structured range of data is converted into an Excel table, you see the following:
  - A filter button in each cell of the header row
  - The range formatted with a table style
  - A sizing handle (a small triangle) in the lower-right corner of the last cell of the table
  - The TABLE TOOLS DESIGN tab on the ribbon

Creating an Excel Table



Creating an Excel Table

- Saving Time with Excel Tables
  - Format quickly using a table style
  - Add new rows and columns that automatically expand the range
  - Add a Total row to calculate a summary function (SUM, AVERAGE, COUNT, MIN, MAX)
  - Enter a formula in a cell that is automatically copied to all other cells in the column
  - Create formulas that reference cells in a table by using table and column names

Creating an Excel Table

- Renaming an Excel Table
  - Each Excel table in a workbook must have a unique name
  - Descriptive names make it easier to identify a table by its content
  - Table names must start with a letter or an underscore but can use any combination of letters, numbers, and underscores for the rest of the name
  - Table names cannot include spaces

Modifying an Excel Table

- Can modify an Excel table by adding or removing table elements or by changing the table's formatting
- Can display or hide the following:
  - Header row
  - Total row
  - First column
  - Last column
  - Banded rows
  - Banded columns
  - Filter buttons

Maintaining Data in an Excel Table

- As you develop a worksheet with an Excel table, you may need to:
  - Add new records to the table
  - Find and edit existing records in the table
  - Delete records from the table
- Adding Records
  - Add a record in the first blank row
  - Add a record in a specific location by inserting a row within the table for the new record

Maintaining Data in an Excel Table

- Finding and Editing Records
  - You can manually scroll through the table to find a specific record
  - Quicker way to locate a record is to use the Find command
  - When using the Find or Replace command, it is best to start at the top of a worksheet to ensure that all cells in the table are searched

Maintaining Data in an Excel Table

- Deleting a Record
  - Three ways to delete records:
    - Select a cell in each record you want to delete, click the Delete button arrow in the Cells group on the HOME tab, and then click Delete Table Rows
    - Delete a field by selecting a cell in the field you want to delete, clicking the Delete button arrow, and then clicking Delete Table Columns
    - Use the Remove Duplicates dialog box to locate and remove records that have the same data in selected columns

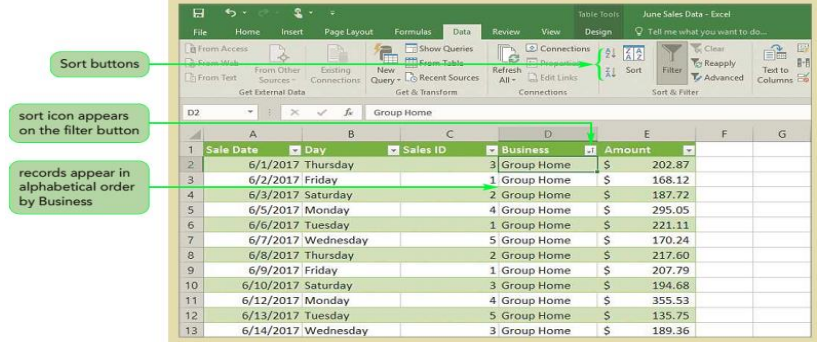
Sorting Data

- The records in an Excel table initially appear in the order they were entered; you can view the same records in a different order
- **Ascending order** arranges text alphabetically from A to Z, numbers from smallest to largest, and dates from oldest to newest
- **Descending order** arranges text in reverse alphabetical order from Z to A, numbers from largest to smallest, and dates from newest to oldest

Sorting Data

- Sorting One Column Using the Sort Buttons
  - Use the Sort A to Z button or the Sort Z to A button to sort data quickly with one sort field

Figure 5-11 JuneTbl table sorted by the Business field

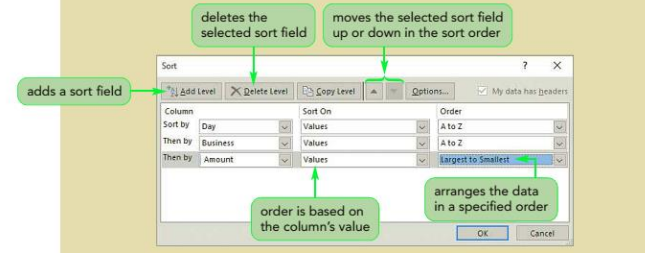


	Sale Date	Day	Sales ID	Business	Amount
2	6/1/2017	Thursday	3	Group Home	$ 202.87
3	6/2/2017	Friday	1	Group Home	$ 168.12
4	6/3/2017	Saturday	2	Group Home	$ 187.72
5	6/5/2017	Monday	4	Group Home	$ 295.05
6	6/6/2017	Tuesday	1	Group Home	$ 221.11
7	6/7/2017	Wednesday	5	Group Home	$ 170.24
8	6/8/2017	Thursday	2	Group Home	$ 217.60
9	6/9/2017	Friday	1	Group Home	$ 207.79
10	6/10/2017	Saturday	3	Group Home	$ 194.68
11	6/12/2017	Monday	4	Group Home	$ 355.53
12	6/13/2017	Tuesday	5	Group Home	$ 135.75
13	6/14/2017	Wednesday	3	Group Home	$ 189.36

Sorting Data

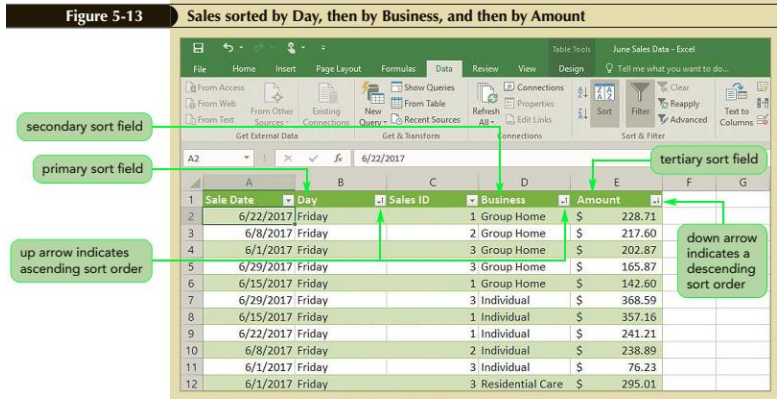
- Sorting Multiple Columns Using the Sort Dialog Box
  - The first sort field is called the **primary sort field**
  - The second sort is called the **secondary sort field**
  - Up to 64 sort fields possible

Figure 5-12 Sort dialog box with three sorted fields



Sorting Data

Figure 5-13 Sales sorted by Day, then by Business, and then by Amount



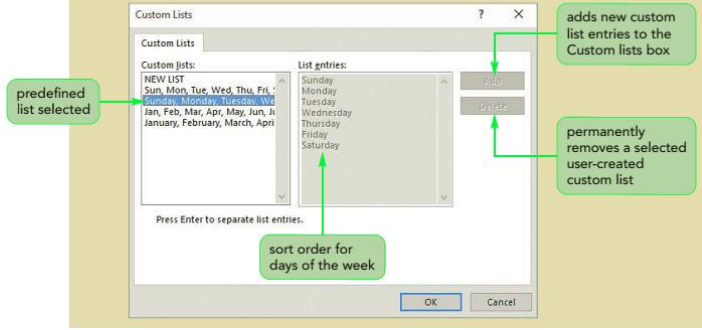
	Sale Date	Day	Sales ID	Business	Amount
2	6/22/2017	Friday	1	Group Home	$ 228.71
3	6/8/2017	Friday	2	Group Home	$ 217.60
4	6/1/2017	Friday	3	Group Home	$ 202.87
5	6/29/2017	Friday	3	Group Home	$ 165.87
6	6/15/2017	Friday	1	Group Home	$ 142.60
7	6/29/2017	Friday	3	Individual	$ 368.59
8	6/15/2017	Friday	1	Individual	$ 357.16
9	6/22/2017	Friday	1	Individual	$ 241.21
10	6/8/2017	Friday	2	Individual	$ 238.89
11	6/1/2017	Friday	3	Individual	$ 76.23
12	6/1/2017	Friday	3	Residential Care	$ 295.01

Sorting Data

- Sorting Using a Custom List
  - A **custom list** indicates sequence to order data
  - Two predefined custom sort lists
    - Day-of-the-week custom list
    - Month-of-the-year custom lists
  - Can create a custom list to sort records in a sequence you define

Sorting Data

Figure 5-14 Custom Lists dialog box



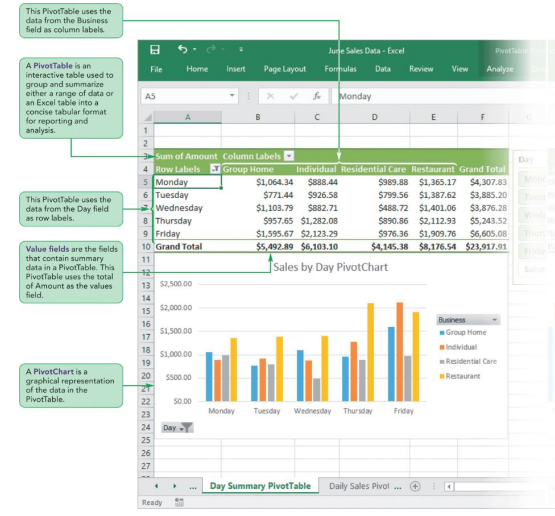
Tutorial Activities

- Filtering Data
  - Filtering temporarily hides any records that do not meet specified criteria
  - Filtering Using One Column
  - Filtering Using Multiple Columns
  - Clearing Filters
  - Selecting Multiple Filter Items
  - Creating Criteria Filters to Specify More Complex Criteria
  - Creating a Slicer to Filter Data in an Excel Table
- Using the Total Row to Calculate
- Splitting the Worksheet Window into Panes
- Inserting Subtotals

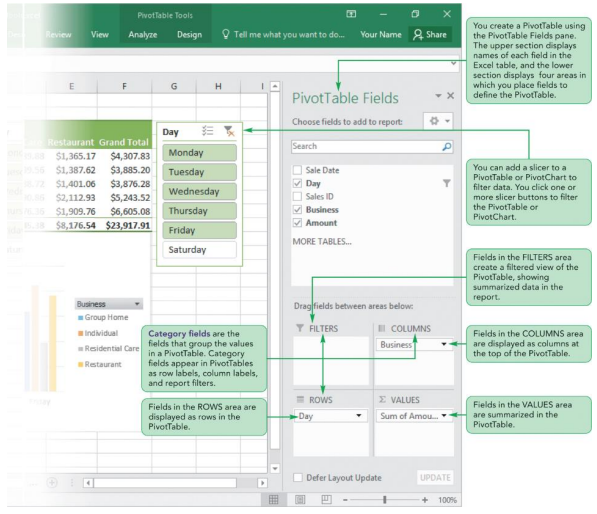
Analyzing Data with PivotTables

- When a table contains large amounts of data, it often becomes difficult to obtain a clear view of that information
- PivotTables help organize data by summarizing data into categories using Functions (COUNT, SUM, AVERAGE, MAX, MIN)
- Provide ability to “pivot” the table (rearrange, hide, and display different category fields to provide alternative views of the data)

Visual Overview: PivotTable and PivotChart



Visual Overview: PivotTable and PivotChart



Tutorial Activities

- Creating a PivotTable
- Filtering a PivotTable
- Refreshing a PivotTable
- Creating a PivotChart

Summary

- Excel tables
- Pivot Tables and Pivot Charts
- Homework
  - Go through Module 5 of Excel textbook
  - Check out Tableau software
- Next week
  - Advanced Functions (Excel Module 8)