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

How do you want to view this data?

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

MONASH University

Planning a Structured Range of Data

each column is a field

each row is a record

	A	B	C	D	E	F	G	H	I
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

header row replaces column headings

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

MONASH
University

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

MONASH
University

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

MONASH University

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
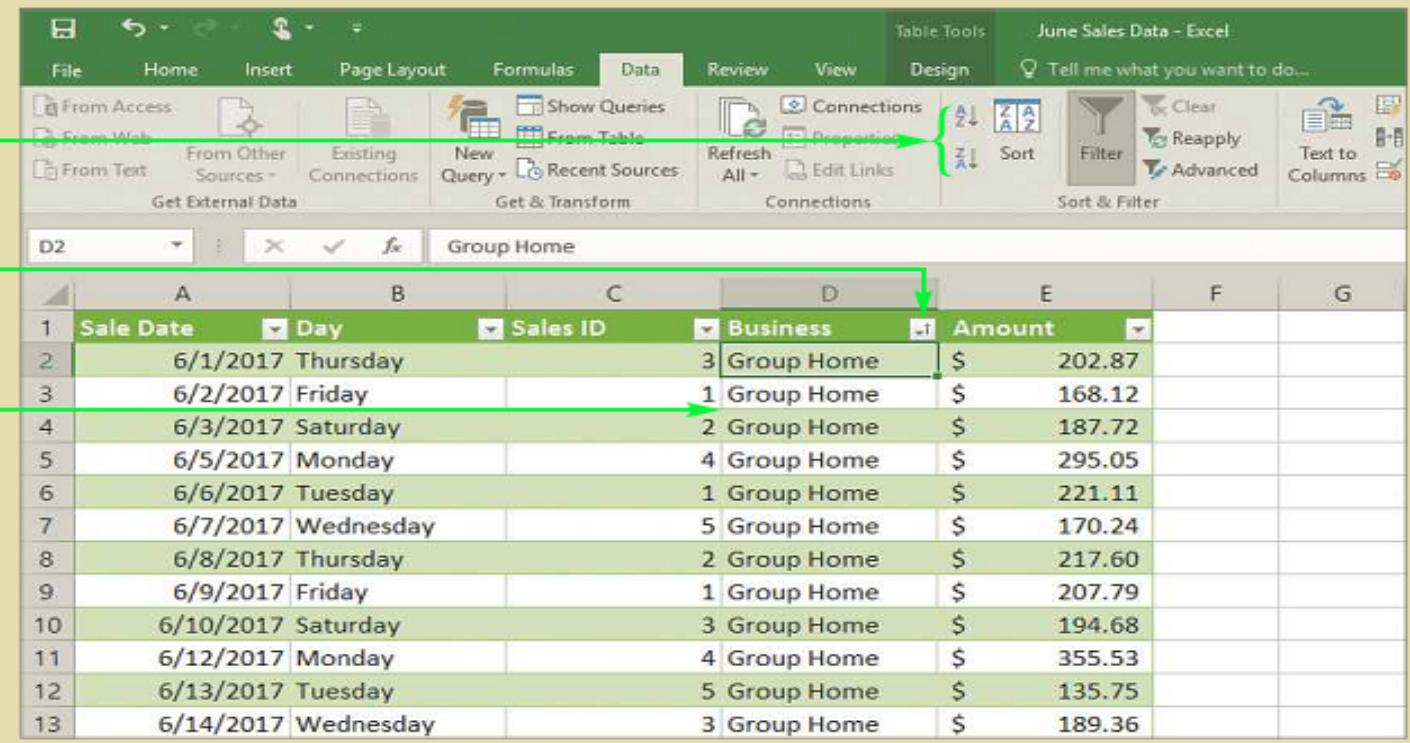
Sorting Data

- 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

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
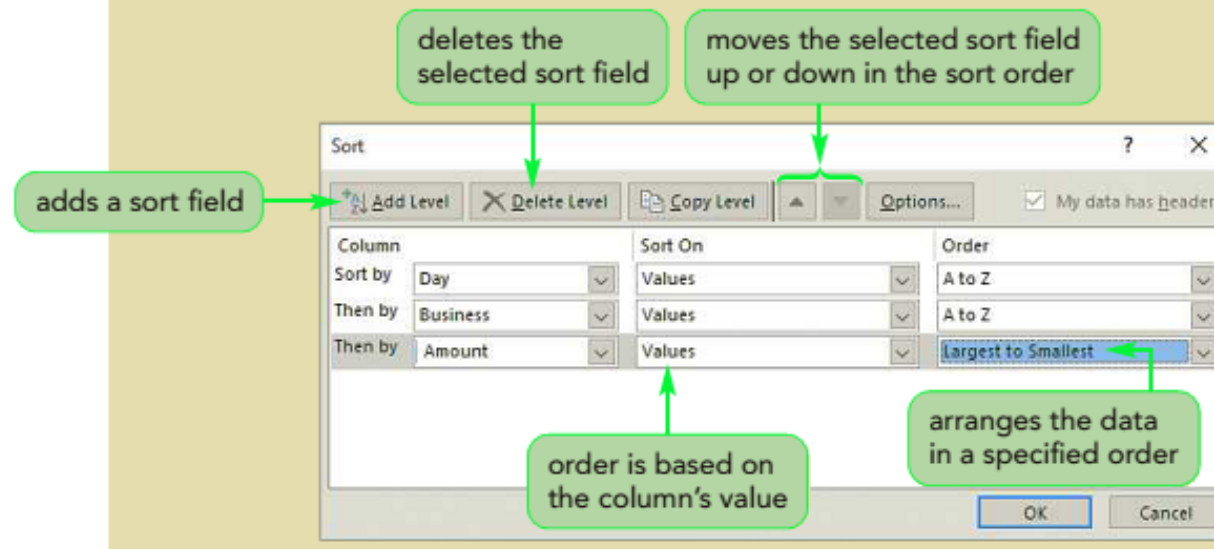
Sorting Data

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

secondary sort field

primary sort field

tertiary sort field

up arrow indicates ascending sort order

down arrow indicates a descending sort order

|	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

MONASH University

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
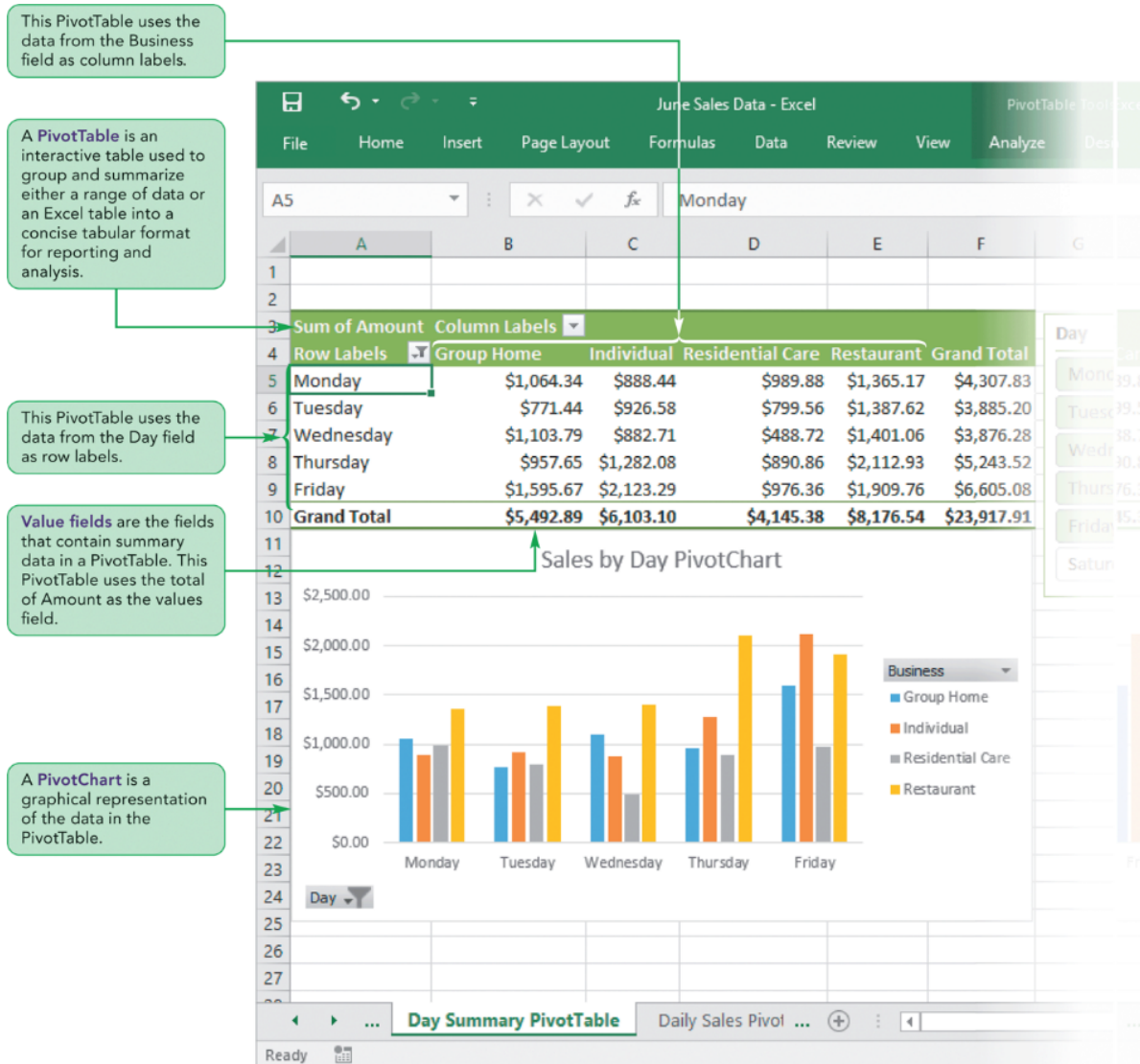
MONASH
University

Sorting Data

Figure 5-14 Custom Lists dialog box
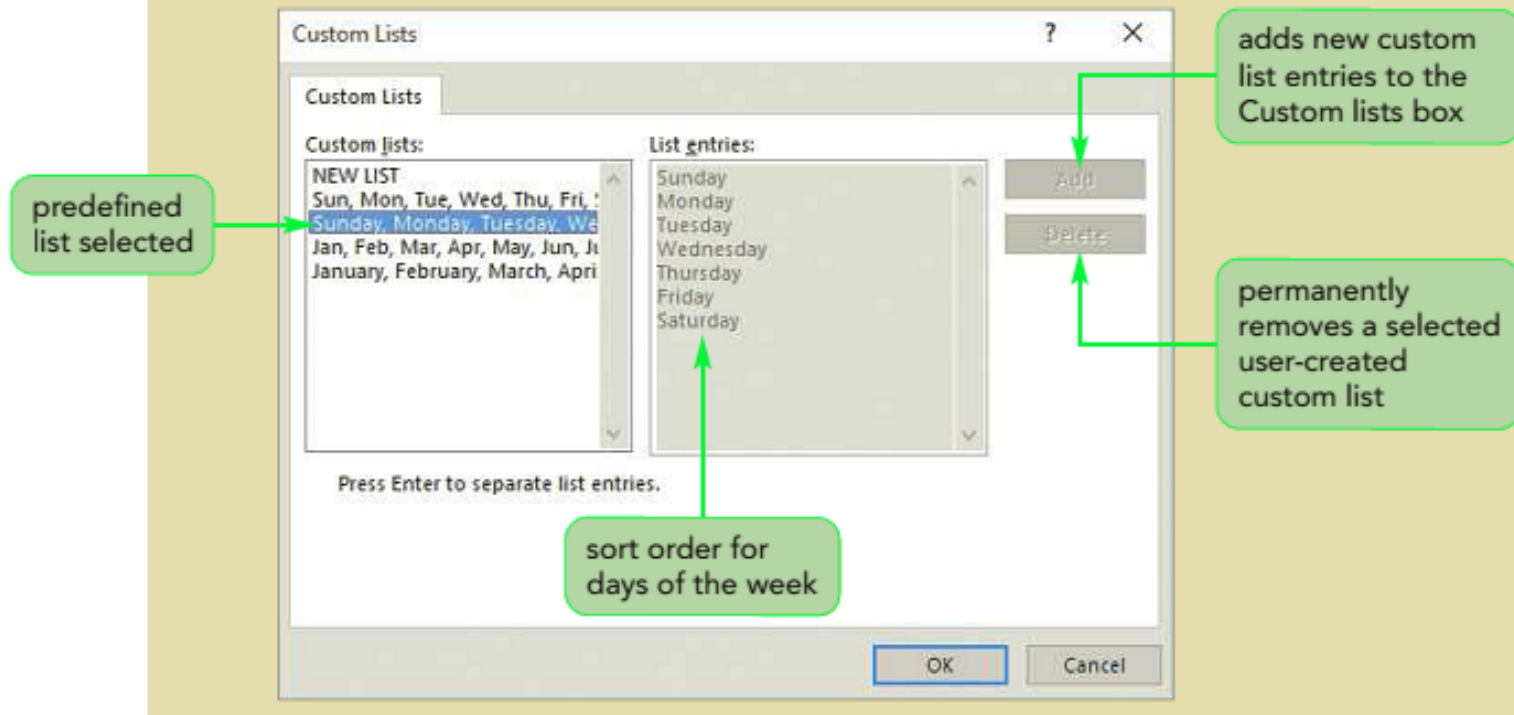
Tutorial Activities

- 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

MONASH
University

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)