EXCEL Date Functions and Conditional Formatting

n this chapter, you will use a variety of methods to work with an important type of data in Excel: date and time information. Dates provide useful information for all kinds of data, such as when customer invoices are due and when payments were made, or recording company expenses, schedules, and reports. You will also explore creating and customizing conditional formatting rules to gain valuable insight into the data in your worksheet.

LEARNING OBJECTIVES

- Identify date serial numbers
- Apply custom date formatting
- Enter times
- Create functions using dates
- Perform date and time calculations
- Create customized conditional formatting rules
- Edit rules using the Conditional Formatting Rules Manager

CHAPTER TIMING

- Concepts/Develop Your Skills: 1 hr 30 mins
- Self-Assessment: 20 mins
- Apply Your Skills: 30 mins
- Total: 2 hrs 20 mins

PROJECT: UPDATING COMPANY Documents

Airspace Travel, which provides travel packages to tropical destinations, prides itself on providing top-notch customer service. As part of its service plan, the company carefully tracks its customers' travel dates and flight times, as well as the frequency of their trips. You have been lending your Excel expertise to the company, and now Airspace has given you the task of reviewing and updating their travel information.

Date Serial Numbers

In Excel, dates are stored as sequential serial numbers. To understand dates in Excel, you must also know that Excel dates start with January 1, 1900. The serial number for January 1, 1900, is 1, and the serial numbers increase by one for each day after that date. For example, the serial number 501 represents May 15, 1901, which is exactly 500 days after January 1, 1900.

Using serial numbers for dates is helpful because it means that they can be used in calculations and functions. For example, you can use a formula to find the days until a payment is due by starting with the due date and subtracting today's date.

| C2 | | : | \times | \checkmark | $f_{\mathcal{K}}$ | =B2-A2 |
|----|-----------|----------|----------|--------------|-------------------|--------|
| | А | | В | | С | D |
| 1 | Today | Due Date | | Days | | |
| 2 | 4/20/2020 | 5/18 | 3/2020 | | 28 | |

The formula in cell C2, =B2-A2, subtracts today's date in cell A2 from the due date in cell B2.

Applying Custom Date Formatting

There are many ways to enter a date into a cell, and depending on how you do so, Excel will apply one of the default date formats—usually either 4/17/2020 or 17-Apr. After entering a date, you have the option of adjusting the date formatting using the Number Format drop-down menu or applying custom date formatting. The Number Format menu gives you two options, Short Date and Long Date; for example, 4/17/2020 and Friday, April 17, 2020, respectively.

Additional date formatting options are available from the Format Cells dialog box, either in the Date or the Custom category. Both categories have many options to choose from under Type.

| Format Cells | | ? | \times |
|---|--|-------|----------|
| Number Alignment Category: General Number Currency Accounting Date Time Percentage Fraction Scientific Text Special Custom | Font Border Fill Protection Sample | | ^ |
| ~ | m/d/yyyy | Delet | e V |

In Custom format, *d* represents the day, *m* represents the month, and *y* represents the year. You can also create your own date formats by using the codes *d*, *m*, and *y* in different combinations, similar to creating other custom number formats.

| CUSTOM DAT | E FORMATTING | | |
|------------|-------------------|------------------------------------|----------------------------|
| Category | Format Type | Description | Display for April 17, 2020 |
| Date | 3/14 | Month/Day | 4/17 |
| | 3/14/12 | Month/Day/Year | 4/17/20 |
| | March-12 | Month-Year | April-20 |
| | March 14, 2012 | Month Day, Year | April 17, 2020 |
| Custom | d-mmm | Day-Month | 17-Apr |
| | d-mmmm | Day-Month | 17-April |
| | d-mmm-yy | Day-Month-Year | 17-Apr-20 |
| | dddd mmmm "the" d | Day of the Week Month "the" Day | Friday April the 17 |

View the video "Custom Date Formatting."

DEVELOP YOUR SKILLS: E7-D1

In this exercise, you will enter dates and then use those dates in a simple calculation. You will also apply different formatting to the dates.

- 1. Start Excel; open a new, blank workbook and save it to your Excel Chapter 7 folder as: E7-D1-DaysOld
- **2.** In **cell A1**, enter today's date in the format *mm/dd* and tap **Enter**.

When only the month and day are entered, Excel automatically assigns the current year to the date (even though the year does not display in the worksheet, it is stored in the Formula Bar).

- **3.** In **cell A2**, enter your birth date, including the year, and tap Enter.
- 4. In cell A3, enter the formula: =A1-A2

To find the difference between two dates, always subtract the lower date from the higher date (remember each day counts up by one), and the result is the number of days between the two. The result in cell A3 shows how old you are, calculated in the number of days! Notice that the number format in cell A3 is General.



5. Select the two dates in the **range A1:A2** and choose **Home**→**Number**→**Number Format menu button** ▼→**General**.

The format for the two dates is converted to General, which means the serial number for those dates is now displayed.

6. With the same range selected, choose Home→Number→Number Format menu button ▼→Long Date.

The Long Date format displays the day of the week, so you can see the day of the week on which you were born (in case you don't remember!).

7. In cell B3, type days old and tap Enter.

- **8.** Save the file and close it. *Now you will apply various formatting to the dates in the Airspace customer invoices file.*
- 9. Open E7-D1-Invoices from your Excel Chapter 7 folder and save it as: E7-D1-Clients
- **10.** Select the invoice dates in the **range G4:G13**.
- **11.** Open the Format Cells dialog box by clicking the **Number Format** dialog box launcher.



Because you opened the dialog box from the Number group on the Ribbon, the active tab is Number.

- **12.** If necessary, choose **Custom** from the Category list.
- **13.** Clear the existing text in the Type box and then enter the code **mmm-d** and click **OK**. *The date display is now reversed, showing the short-form text for the month and then the day.*
- **14.** Select the travel dates in the **range J4:J13**.
- **15.** Open the Format Cells dialog box from the Number group again and ensure the **Custom** category is selected.

The day of the week is important to know for travel information, so you will add the day of the week using a custom date format.

- **16.** In the Type box, enter the code **ddd mmm-d** and click **OK**. *The day of the week now precedes the month for the dates in the Travel Date column.*
- **17.** Save the workbook.

Entering Time Information

Much like you do with dates, you can enter times exactly as you want them to appear in the workbook. For example, if you type 6:00 into a cell, Excel will recognize this as a time entry and display it in the cell as 6:00. Just like dates and numbers, times are right-aligned by default.

| 6: | 00 |
|------|----|
| 20-J | un |
| 5 | 00 |

Also similar to dates, each time has a serial number attached to it. Because each day is 1, each hour is 1/24 (or 0.041667 if written as a decimal). Therefore, if you enter 6:00, Excel displays the time as 6:00 but stores the information as 0.25 (six hours is one-quarter of the day). Combining the date and time would mean that 12:00 noon on July 1, 2010, is stored with the serial number 40360.5; the date serial number is 40360 and the time is 0.5, halfway through the day.

Most of the time, you won't have to worry about the serial number. As long as the time is entered correctly, Excel will apply the correct custom number formatting.



| Sat Oct-12 Mon Sep-30 Fri Oct-4 | Travel Date |
|---------------------------------------|-------------|
| | Sat Oct-12 |
| Fri Oct-4 | Mon Sep-30 |
| | Fri Oct-4 |

You can also add an AM/PM designation, if you prefer, rather than using a 24-hour clock, but you must enter a space between the time and either AM/PM. You can enter 6:00 AM for the morning or 6:00 PM for the evening (note the space before AM and PM). If no designation is entered, Excel assumes you are using the 24-hour system, so 6:00 is stored as 6:00 AM. You can also use number formatting to customize the way the time displays on the worksheet.

| TIME ENTRIES | | | | |
|--------------|---------|----------------------|--|--|
| Entry | Display | Time Stored As | | |
| 6:00 | 6:00 | 6:00:00 AM or 0.25 | | |
| 9:00 AM | 9:00 AM | 9:00:00 AM or 0.375 | | |
| 12:00 | 12:00 | 12:00:00 PM or 0.5 | | |
| 13:30 | 13:30 | 1:30:00 PM or 0.5625 | | |
| 6:00 PM | 6:00 PM | 6:00:00 PM or 0.75 | | |

DEVELOP YOUR SKILLS: E7-D2

In this exercise, you will enter the flight times for Airspace's clients into the worksheet.

1. Save your file as: E7-D2-Clients

The first time in cell M4 displays the AM designation, while the rest of the times are displayed in the 24-hour system (for example, 20:00).

Select the flight times in the range M5:M10 and choose Home→Number→Number Format menu button ▼→General.

The serial numbers for the flight times are displayed. Now you will adjust the number formatting to display the correct time format.

- **3.** With the flight times in the range M5:M10 still selected, click the **Number Format** launcher in the Number group on the Ribbon.
- **4.** Choose **Time** from the Category list, and then choose the third option, which will display hours:minutes AM/PM, from the Type list and click **OK**.
- **5.** Enter the remaining clients' flight times into the **range M11:M13** as shown.

Be sure to type hour:minutes AM/PM and include the space to display the correct designation for AM or PM.

| | Sample |
|---|---------------|
| | 8:00 PM |
| 1 | <u>T</u> ype: |
| | *1:30:55 PM |
| | 13:30 |
| | 1:30 PM |
| | 13:30:55 |
| | 1:30:55 PM |
| | 30:55.2 |
| | 37:30:55 |

Comple

| | A | В | М |
|----|--------|----------|---------|
| 11 | Karynn | Alida | 5:30 PM |
| 12 | David | Monton | 7:20 AM |
| 13 | Amanda | Campbell | 9:00 AM |

6. Save the file.

Using Date Functions

Excel has many date functions available in the Function Library. Dates are commonly found in Excel worksheets because they provide useful information about when an event or a transaction took place. Date information becomes even more useful when you can use it in formulas and functions. For example, you can use date functions to insert the current date or to extract information from a date, such as the month or year.

You enter date functions just like you do other functions, such as SUM. For example, you can use the TODAY function to enter today's date like this: =*TODAY()*. For this function, no arguments are entered inside the parentheses.

| DATE FUNCTIONS | DATE FUNCTIONS | | | | |
|----------------------|--|---|--|--|--|
| Function | Description | Example | | | |
| TODAY() | Displays the current date based on today's serial number; the date automatically updates when the worksheet is recalculated or reopened; no arguments are included in the parentheses | Formula: =TODAY() <i>Result:</i> 2/21/2020 | | | |
| NOW() | Like TODAY but also displays the time (based on the computer's clock); no arguments are included in the parentheses | Formula: =NOW() <i>Result:</i> 2/21/2020 11:09 | | | |
| DATE(year,month,day) | Returns a specific date based on the arguments entered | Formula: =DATE(2020,12,20) <i>Result:</i> 12/20/2020 | | | |
| YEAR(date) | Returns the year of the specified date as either a serial number or a cell reference to a cell containing a date | Cell B23: 12/20/2020 Formula: =YEAR(B23) <i>Result:</i> 2020 | | | |
| WEEKDAY() | Returns the number of the corresponding day for the date provided, entered either as a serial number or a cell reference, from 1 to 7; Sunday is 1 | Formula: =WEEKDAY(B23) <i>Result:</i> 1 | | | |
| WORKDAY() | Used for adding workdays (Monday to Friday) to a start date, such as adding 10 business days to the date of an invoice; holidays can be skipped if listed somewhere in the workbook | Cell G1: 12/25/2020 Formula: =WORKDAY(B23,5,G1) <i>Result:</i> 12/28/2020 | | | |

DEVELOP YOUR SKILLS: E7-D3

In this exercise, you will use date functions to enter date-related information into your worksheets.

- 1. Save your file as: E7-D3-Clients
- 2. Insert a new row above the column headings in row 3 of the worksheet.
- 3. In cell D3, type Month: and tap Tab.
- 4. In cell E3, enter the formula =G5 and complete the entry.

You wish to display the month of the listed invoices, so you will edit the number format to display only the month of the first invoice listed.

5. With cell E3 selected, open the Format Cells dialog box from the Number group on the Ribbon.

6. Ensure the Custom category is chosen; in the Type box, edit the code to display **mmmm** only and click **OK**.

The code mmmm *displays the full month name, whereas the code* mmm *displays the three-letter abbreviation, and no day or year information. Cell E3 now displays* September.

- 7. Merge and center the range E3:F3.
- 8. In cell H3, enter Year: and tap Tab.
- 9. In cell I3, enter the formula =YEAR (G5) and complete the entry.

The formula argument is simply looking for a serial number, which is provided by entering a cell reference to a cell that contains a date. The result of the formula is the year from the date of the first listed invoice in cell G5, which is 2019.

- **10.** Merge and center the **range I3:J3**.
- Go to the Client History worksheet and insert a new row above the column headings in row 3.
- **12.** In **cell A3**, enter **As Of:** and then merge and center the **range A3:B3**.
- **13.** In **cell C3**, enter the formula **=TODAY**() and then merge and center the **range C3:F3**.
- 14. Apply the Long Date number format to cell C3.
- **15.** Save the file.

Calculations Using Date and Time

When you understand the basic principles of dates and time in Excel, there are many valuable ways to use this information. You can perform mathematical operations such as addition and subtraction to find the difference between two dates or add a number of days to a particular date. Likewise, you can take two times and find the time difference or add and subtract hours and even minutes.

You can combine these mathematical operations with the date functions for even more applications. For example, you can use the TODAY function to insert today's date in one cell and enter a future date such as next Christmas in another cell, and then use a formula to subtract today from Christmas to determine the number of days remaining until the holiday. Any time you open the file, the TODAY function updates to the current date, so the formula calculation updates the number of days until Christmas. Of course, in business, there are much more practical applications.

DEVELOP YOUR SKILLS: E7-D4

In this exercise, you will use date functions to enter date-related information in your worksheets.

- 1. Save your file as: E7-D4-Clients
- 2. Go to the Sept worksheet.

Airspace Travel allows customers to take up to three months after their travel date to pay for their trip, so you will enter a formula to calculate the due date.

- **3.** In **cell L5** of the Balance Due Date column, enter this formula: **=EDATE (J5, 3)** *The EDATE function takes two arguments: the start date, which is the travel date in cell J5, and the number of months to add to the date, which is three. The result of the formula for the first client is January 12, three months after October 12.*
- **4.** Copy the formula down the column for the remaining clients.

You instruct your clients to arrive at the airport three hours before their flight time, so now you will enter a formula to calculate their planned arrival times.

- **5.** In **cell N5**, enter the formula: **=M5 (1/24*3)** *This formula takes the time saved in cell M5 and subtracts three hours (one hour is 1/24). The result of the formula for the first client is 8:00 AM.*
- **6.** Copy the formula down the column for all clients.
- 7. Go to the **Client History** sheet and insert a column to the left of **column F**.
- 8. In cell F4, enter the heading: Days Since Travelled
- 9. In cell F5, enter the formula: =\$C\$3-E5

Because cell C3 contains the TODAY function and cell E5 contains the last travel date, the formula result will update to show the new number of days since that customer has travelled each time you open the file. However, you must first change the number format so it does not show a date.

10. Apply the General number format to cell F5.

Now you can see how many days since the first customer, Eric, took his last trip. This information could be used to reach out to customers who haven't travelled in a long time. Of course, this number will depend on the day on which you complete this exercise.

11. Copy the formula down the column for the remaining clients.

Because the formula uses an absolute reference to cell C3, that cell reference stays the same for each customer.

12. Insert a column to the left of **column E**.

13. In cell E4, enter the heading: Years of Loyalty

Now you want to enter a formula to find the number of years since each customer first became a client. The YEARFRAC function will find the difference between the dates and will return a whole number for complete years and then convert excess days into a fraction of a year. For example, 1 year and six months would display as 1.5.

14. In **cell E5**, insert the formula: =YEARFRAC(D5, \$C\$3)

Again, you must convert the number format for the result to make sense.

- **15.** Choose **Home**→**Number**→**Comma Style** → to apply that number format to **cell E5**.
- **16.** Choose **Home**→**Number**→**Decrease Decimal** to reduce the number of decimal places showing to one.
- **17.** Copy the formula in **cell E5** down the rest of the column.

The results of the formula will again depend on the day the exercise is completed and will update each day the file is opened.

18. Save the file.

Conditional Formatting Using Graphics and Custom Rules

Conditional formatting applies formatting to cells that meet your desired criteria. For example, there are preset conditional formatting options for the top or bottom numbers in the selected range, or cells that are greater than, less than, or equal to a number of your choice. You can create multiple rules for the same set of data, and the rules are applied in the order that you choose. Conditional formatting is always updated whenever the data changes.

If none of the options in the Conditional Formatting menu has your desired criteria, you can create a new conditional formatting rule. New rules can be created using the same basic principles as the preset rules; however, you can customize the specific way the rules are applied. You can also create conditional formatting rules based on the outcome of a formula.

Conditional Formatting with Graphics

Another option for conditional formatting is to use data bars, color scales, and icon sets to visualize your data by breaking it into three equal parts: values that are above average, average, and below average in the selected range. There are many quick options to choose from in the Conditional Formatting menu, or you can create a custom rule. Another option is to modify the graphics so the three ranges are not three equal parts; for example, the top 10%, middle 80%, and bottom 10% instead.

| Expenses | Actual | Budget | Difference |
|-----------|--------|--------|------------|
| Bank Fees | 7,200 | 7,300 | 100 |
| Insurance | 18,230 | 17,000 | -1,230 |
| Rent | 25000 | 25000 | 0 |

This data uses conditional formatting with data bars, a color scale, and an icon set to highlight trends and important information.

The Conditional Formatting Rules Manager

Use the Conditional Formatting Rules Manager to create, edit, and delete rules or to rearrange the order in which they are applied. To see which rules have been created, you can choose to show the formatting rules for the current selection or the full worksheet.

| Conditional Formatting Rules M | Conditional Formatting Rules Manager ? X | | | | | | |
|--------------------------------------|---|------------------|---|--------------|---|--|--|
| Show formatting rules for: This | Show formatting rules for: This Worksheet | | | | | | |
| 🔛 <u>N</u> ew Rule 🔛 <u>E</u> dit Ru | ule X Delete Rule | • | | | | | |
| Rule (applied in order shown) | Format | Applies to | | Stop If True | ^ | | |
| Formula: =F4<\$I\$4 | AaBbCcYyZz | =\$F\$4:\$F\$13 | 1 | | | | |
| Last 7 days | AaBbCcYyZz | =\$M\$4:\$M\$13 | 1 | | | | |
| Top 10% | AaBbCcYyZz | =\$L\$4:\$L\$13 | 1 | | | | |
| Data Bar | | =\$I\$16:\$I\$18 | 1 | | | | |

In this example, you see the four rules on the current worksheet and the ranges to which the rules apply.

Conditional Formatting Using Formulas

Creating a custom rule that uses a formula is another way of expanding the possibilities of conditional formatting. Instead of comparing the cells in the selected range to the other cells within that range, a rule allows any cell to be compared to a number or any other cell; if the formula is true, the formatting is applied.

To determine which employees are due for their annual wage review, you could highlight their names if one year has passed since their last review. The conditional formatting rule will compare their last review date in column C plus 365 (one year) to see if it's less than today's date, entered in cell B13. The formula for the conditional formatting applied to the names in column A would be: =C2+365 < \$B\$13

| | А | В | с | Select a Rule Type: |
|----|-----------------|------------|------------------------|---|
| 1 | Employee Name | Department | Date of Last Review | Format all cells based on their values Format only cells that contain Format only top or bottom ranked values |
| 2 | Carol Gregory | Sales | 1/22/19 | Format only values that are above or below average |
| 3 | Natasha Dyas | Admin. | 1/2/19 | ► Format only unique or duplicate values ► Use a formula to determine which cells to format |
| 4 | James Norman | Management | 1/15/19 | · Ose a formata to accerning which cens to format |
| 5 | Joshua Garcia | Sales | 10/23/18 | Edit the Rule Description: |
| 6 | Sarah Mckinnon | Sales | 1/5/19 | Format values where this formula is true: |
| 7 | Shannon Miller | Management | 9/23/18 | =_C2+365<\$B\$13 |
| 8 | Katrina Kormylo | Admin. | 1/8/19 | -02+303(30313 |
| 9 | Susan Colley | Sales | 11/21/18 | |
| 10 | William Emerson | Admin. | 10/19/18 | |
| 11 | Eugene Fink | Sales | 11/12/18 | Preview: AaBbCcYyZz <u>F</u> ormat |
| 12 | | | | |
| 13 | Today: | 1/1/2020 | | OK Cancel |

TIP! *C2* is a relative reference and *\$B\$13* is an absolute reference. In conditional formatting, the rule is written for the first cell in the range (cell A2 here) and automatically adjusts cell references for each row/column (A3:A11). Today's date is a constant, so an absolute cell reference is required.

| Home | →Style | s→Coi | nditional | Formatting | I →New Rule |
|------|--------|-------|-----------|------------|-------------|
| | | | | | |

 \blacksquare Home \rightarrow Styles \rightarrow Conditional Formatting $\blacksquare \rightarrow$ Manage Rules

DEVELOP YOUR SKILLS: E7-D5

In this exercise, you will create and modify conditional formatting rules to highlight important information about your clients.

- 1. Save your file as: E7-D5-Clients
- **2.** If necessary, select the data under *Years of Loyalty* in the **range E5:E14** (Client History sheet).
- **3.** Choose **Home→Styles→Conditional Formatting** →**Icon Sets→3 Stars** (in the Ratings group).

The icons give an indication of the newest and oldest customers, but you have a loyalty program that you want to use instead.

- **4.** In **cell A17**, enter **Loyalty Program** and then merge and center the **range A17:B17** and apply a thick bottom border.
- 5. Enter the qualifications for Silver and Gold status in the range A18:B19:

| | A | В |
|----|---------|---------|
| 17 | Loyalty | Program |
| 18 | Silver | 3 |
| 19 | Gold | 5 |

Edit an Existing Rule

- 6. Choose Home→Styles→Conditional Formatting →Manage Rules.
- **7.** Follow these steps to edit the rule:

| Conditional Formatting Rules Manager | | | | | | |
|---|------------------|-----------------|------------|--------------|---|--|
| Show formatting rules for: This Worksheet | | | | | | |
| BDelete Rule | | | | | | |
| Rule (applied in order shown) | Format | Applies to | Applies to | | | |
| Icon Set | ☆ ☆ ★ | =\$E\$5:\$E\$14 | | | | |
| | | | | | | |
| Edit the Rule Description: | | | | | | |
| Format all cells based on their | values: | | | | | |
| Format Style: Icon Sets | | | | | | |
| I <u>c</u> on Style: | | | | | | |
| Display each icon according to | these rules: | | | | | |
| lco <u>n</u> | | Value | | <u>Т</u> уре | | |
| 📩 🔻 when valu | Je is | =\$B\$19 D | | Formula | C | |
| when < Fe | ormula and 🗦 = 🗸 | =\$B\$18 | ĒŠ | Formula | | |
| र्फ्र ▼ when < Fo | ormula | | | | | |

- A Select **This Worksheet** to show all rules on the worksheet.
- B Click Edit Rule....
- In the Edit Formatting Rule dialog box, change the type for each value to **Formula**.
- O Click the box for the first value and then click **cell B19** on the worksheet.
- Click the box for the second value and then click **cell B18** on the worksheet.
- **8.** Click **OK** to finish editing the rule; click **OK** again to close the Rules Manager. *The full star icon is applied to Gold and Platinum clients, a half star is applied to Silver clients, and Bronze clients have an empty star; both Gold and Platinum are greater than or equal to five, and Bronze is less than three.*

Create a New Rule Using a Formula

- **9.** Go to the **Sept** worksheet and select the invoice dates in the **range G5:G14**. *You want to know which customers booked their trips less than 30 days in advance, so you will create a rule to highlight these customers.*
- **10.** Choose **Home** → **Styles** → **Conditional Formatting** → **New Rule**.
- **11.** Follow these steps to create the new rule:

| New Formatting Rule | ? | \times | | |
|---|--|----------|---------------------------|--|
| <u>S</u> elect a Rule Type: | | | | |
| ► Format all cells based on their values | | | | |
| ► Format only cells that contain | | | | |
| ► Format only top or bottom ranked values | | | | |
| ► Format only values that are above or below aver | age | | | |
| ► Format only unique or duplicate values | ► Format only unique or duplicate values | | | |
| Use a formula to determine which cells to format | t | | | |
| Edit the Rule Description: | | | Number Font Border Fill | |
| Format values where this formula is true: | | | Background <u>C</u> olor: | |
| =(J5-G5)<30 | | 1 | No Color | |
| | | | | |
| | | | | |
| Preview: AaBbCcYyZz | <u> </u> | t 🔪 | | |
| | | \sim | | |
| ОК | Can | cel | | |
| | | | | |
| | | | à | |

- Select Use a formula to determine which cells to format.
- B Enter the formula = (J5-G5) < 30 to format values where this formula is true.
- Click Format...; in the Format Cells dialog box, click the Fill tab and choose any light blue color.

12. Click **OK** twice, once to close the Format Cells dialog box and again to create and apply the new rule.

The rule takes the difference between the travel date in column J and the invoice date in column G, and then applies the blue fill if the difference is less than 30 days. The rule applies to four out of the ten customers.

| First Name | Last Name | Provider | Destination | # of | Price Per Person | | Invoice |
|------------|-----------|----------|--------------------|--------|---------------------|-------|---------|
| FIRSUNAINE | | | Destination | Guests | | | Date |
| Eric | Snow | Sunwind | Jamaica | 2 | \$ | 899 | Sep-8 |
| Alison | Lobosco | Sunwind | Mexico | 2 | \$ | 770 | Sep-7 |
| Lacy | Henrich | TrueBlue | Dominican Republic | 4 | \$ | 1,200 | Sep-1 |
| Will | Johns | Eastjet | Cuba | 3 | \$ | 950 | Sep-9 |
| Nicki | Hollinger | Sunwind | Mexico | 1 | \$ | 875 | Sep-8 |
| Lennard | Williams | TrueBlue | Brazil | 6 | \$ | 800 | Sep-8 |
| Kerri | Knechtel | TrueBlue | Columbia | 4 | \$ | 560 | Sep-5 |
| Karynn | Alida | Sunwind | Bahamas | 2 | \$ | 870 | Sep-8 |
| David | Monton | Eastjet | Dominican Republic | 2 | \$ | 650 | Sep-6 |
| Amanda | Campbell | Sunwind | Jamaica | 7 | \$ | 900 | Sep-9 |

13. Save and close the file.

Self-Assessment

Check your knowledge of this chapter's key concepts and skills by completing the Self-Assessment on the Student Resource Center.

Apply Your Skills

APPLY YOUR SKILLS: E7-A1

Use Date Formatting and Date Functions

In this exercise, you will take the Expense Report for the Universal Corporate Events employees and use date functions and formatting to improve the report.

- 1. Open E7-A1-Expenses from your Excel Chapter 7 folder and save it as: E7-A1-ExpenseReport
- 2. In cell H2, enter the formula =NOW () to insert the date and time of the report.
- 3. Edit the number format for cell H2 to display the date and time using this code: mmmm dd, yyyy h:mm am/pmYou will notice the time information will continue updating as you work on the rest of the exercise.
- 4. Insert a new row below the headings, above row 4.
- 5. In cell D4, display the first day of the month from cell D3 by entering the formula: =D3
- 6. In cell F4, enter the formula =F3 and in cell H4, enter the formula: =H3
- 7. In cell E4, display the last day of the month from cell D3 using this formula:
 =EOMONTH (D3, 0)

The EOMONTH function takes a date, adds any number of months, and then returns the last day of that month. In this case, the formula takes the date of July 1 in cell D3, adds zero months, and returns the last day of that month, July 31.

Now you will repeat this step for August and September.

- **8.** Copy the formula from **cell E4** and paste it into **cell G4** and **cell I4**. *If you notice a formula error flag appear, which is a small green triangle in the top-left corner of the cell, ignore it.*
- **9.** Adjust the display of the date in **cell D3** to show only the month name using the code: mmmm
- **10.** Increase the font size of the July heading in **cell D3** to 14 points and change the vertical alignment to **Middle Align**.
- **11.** Use the **Format Painter** to copy the format from **cell D3** to the **range F3:J3**.
- **12.** Save the file.

APPLY YOUR SKILLS: E7-A2

Apply Conditional Formatting Rules

In this exercise, you will apply conditional formatting rules to indicate a warning for expenses that are over budget for the Universal Corporate Events employee expense reports.

- 1. Save your file as: E7 A2 ExpenseReport
- Select the expenses for July to September in the range D5:H10.
 You will begin by creating conditional formatting to see which months went over budget.
- **3.** Create a new conditional formatting rule.
- **4.** Choose to use a formula to determine which cells to format and enter: **=D5>\$C5** *The mixed reference in this formula allows the conditional formatting rule to be applied to all the rows and columns in the selected data using the data from column C.*
- **5.** Modify the format to apply the fill **Gold**, **Accent 4**, **Lighter 40%** (8th column, 4th row). *Now you will create a second rule, which will show which expense totals went over the total three-month budget.*
- 6. Select the total expenses in the range J5:J10.
- 7. Create a new conditional formatting rule using the formula =J5> (C5*3) and the fill Gold, Accent 4, Darker 25% (8th column, 5th row).
 You should now see that the Entertainment total has gone over the three-month budget.
- **8.** Open the Conditional Formatting Rules Manager and edit both rules on the worksheet (one at a time) by applying the bold font style to the conditional formatting.
- **9.** Save and close the file.

APPLY YOUR SKILLS: E7-A3

Work with the Client Marketing List

In this exercise, you will use the information from the Client Events worksheet to create a marketing schedule to contact your clients and encourage them to book another event with Universal Corporate Events.

- 1. Open E7-A3-ClientEvents from your Excel Chapter 7 folder and save it as: E7-A3-ClientMktg
- 2. In cell A2, edit the subtitle to: Marketing Schedule Client Communications
- **3.** Insert a column to the left of **column D**.

When talking to clients, you want to remember the weekday of their events, so you will add a column to show this information.

- **4.** Insert the heading **Day of Week** in **cell D4** and the formula **=C5** in **cell D5**.
- **5.** Adjust the number format to show the full name of the day only.
- 6. Copy the formula down the column to row 16 and then adjust the width of column D to 12.
- **7.** Insert two new columns to the left of **column E**. *You want to schedule a thank-you letter and a follow-up phone call one month and two months after the events, respectively, so you will use the EDATE function.*
- 8. Enter the heading Letter in cell E4 and the heading Phone Call in cell F4.
- **9.** In **cell E5**, enter a formula using the EDATE function to enter the date for one month after the Winchester Web Design event.
- **10.** In **cell F5**, enter a formula using the EDATE function to enter the date for two months after the event.
- **11.** Use the **Format Painter** to copy the date format from **cell C5** to the **range E5:F5**.
- **12.** Copy the formulas in the **range E5:F5** down the columns for all the clients. *Now you want to quickly see the highest and lowest Survey Ratings for reference when calling clients.*
- **13.** Apply conditional formatting to the Survey Rating column using the **3 Flags Icon Set** (in the Indicators group).
- **14.** Save and close the file.