You work in the Human Resources Department (or simply HR) for the accounting firm Winston, Winston & Coombs. The firm has recently increased its client base and hired several university graduates for entry-level positions. The HR manager has established a formal process for evaluating job applicants. This process takes into account the applicant’s academic performance and work experience, as well as the impression made during the personal interview. In addition, all applicants are given a skills-based exam to determine their proficiency in spreadsheet and database applications. Because some applicants are not business majors but might be otherwise qualified for a position, the exam also covers some basic business concepts in accounting, finance, and marketing.

You have been asked to evaluate the information on the candidates being considered. Each job application provides the following information:

• College GPA (valid scores range from 1.5 to 4.0)

• Major Code, universal standardized system that indicates the applicant’s undergraduate major; for example, Engineering=1, Business=2, Economics=3, Physical Science=4, and so on (valid codes for majors are 1 through 100)

• The total number of references submitted by the applicant

• A Personal Interview Rating • If the applicant has previous work experience (TRUE or FALSE)

• The Employment Exam score (valid scores are between 300 and 800)

•The undergraduate school ranking (compared with all colleges across the country) The HR manager has established criteria to determine if an applicant will be automatically disqualified or automatically hired, or if no decision is made. The criteria, which are applied in order, are described in the following list. An applicant is automatically disqualified if any of the following criteria are TRUE:

• The applicant has submitted an invalid GPA score, Employment Exam score, or Major Code.

• The applicant has a GPA less than 3.0.

• The applicant provided fewer than two references.

• The applicant has an Employment Exam score below 600.

• The applicant has a Personal Interview Rating of less than 3. An applicant is automatically hired if all of the following criteria are TRUE:

• The applicant has not been automatically disqualified.

• The applicant has a GPA score over 3.8.

• The applicant has a Major Code between 1 and 25 (inclusive).

• The applicant graduated from one of the top 50 schools (ranking of 50 or less).

• The applicant has an Employment Exam score above 720.

• The applicant has a personal interview rating of 4 or higher.

• The applicant has prior work experience. If an applicant is neither automatically disqualified nor automatically hired, the applicant’s status is undecided.

Complete the following:

1. Open the workbook named Hiring.xlsx located in the Chapter 4 folder, and then save the file as WWC Hiring Analysis.xlsx.

2. Write a formula in cell I4 that can be copied down the column to determine if (TRUE or FALSE) any of the following scores or codes listed for this applicant are invalid: GPA, Major Code, Employment Exam. (Hint: Use the information provided in the problem description to determine the appropriate criteria.)

3. Write a formula in cell J4 that can be copied down the column to determine if (TRUE or FALSE) the applicant should be automatically disqualified based on the given criteria.

4. Write a formula in cell K4 that can be copied down the column to determine if this candidate is not automatically disqualified. (Hint: Use the results determined in Step 3.)

5. In cell L4, write a formula that can be copied down the column to determine if (TRUE or FALSE) the candidate should be automatically hired based on the given criteria. (Hint: For criteria between two values, test that the value is both >= the lower limit and <= the higher limit.)

6. Write a formula in cell M4 that can be copied down the column to determine if this candidate is not automatically hired. (Hint: Use the results determined in Step 5.)

7. Write a formula in cell N4 that can be copied down the column to determine if no decision is made on this applicant. Recall that no decision is made if the applicant is both not automatically disqualified (K) and not automatically hired (M).

8. Write a formula in cell I14 that can be copied across the row (through column N) to determine if all of the applicants have invalid scores.

9. Write a formula in cell I15 that can be copied across the row (through column N) to determine if any of the applicants have invalid scores.

10. To summarize the results, write a formula in cell I16 that displays the total number of applicants who have invalid scores. Copy this formula across the row (through column N). This formula should automatically update if any of the scores or criteria are later modified.

11. Apply conditional formatting to highlight the important points, as follows: a. Highlight all of the TRUE values in the Automatically Disqualified column (J4:J12) using a dark green and bold text format. b. Use gradient fill blue data bars to highlight the Personal Interview Rating scores of the applicants. c. Highlight the name of any applicant with an Employment Exam Score of more than 720 using a light blue background.

12. Save and close the WWC Hiring Analysis.xlsx workbook.

**Level 2**

For the past year, you have been working with a medium-sized painting contractor, NT Painting & Sons, doing everything from running errands to cutting the weekly paychecks and filing the appropriate quarterly employment withholding forms with the IRS. Given your knowledge of spreadsheets, your boss has asked you to create an Excel worksheet for estimating the price of individual painting jobs. Your boss wants the worksheet to contain some basic input information and automatically calculate an estimated price so that a customer can quickly know the cost of the proposed work. The variables to be considered are as follows:

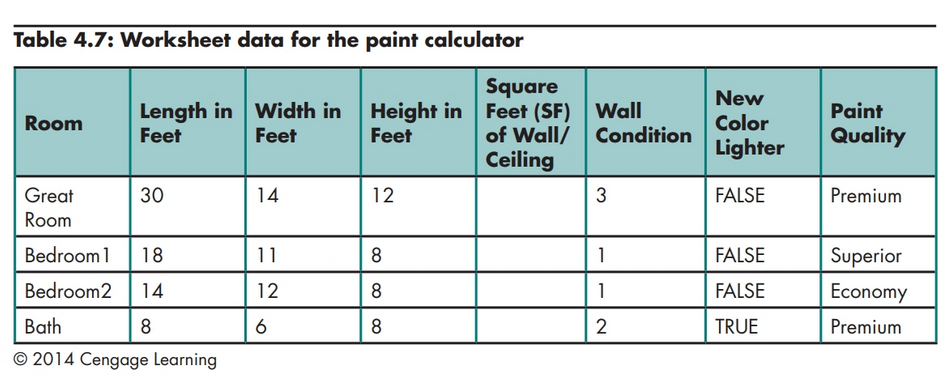
• The dimensions of each room—length, width, and height

• The condition of the wall surfaces, where 1 represents excellent, 2 represents reasonable but has some peeling and/or old paint, and 3 represents poor condition with major holes, peeling, and/or very old paint

• Whether or not the requested new color is lighter than the existing wall color (TRUE or FALSE)

• Grade of paint being requested—premium, superior, or economy Complete the following:

1. Create a new workbook, and save it as Paint Calculator.xlsx in the Chapter 4 folder. Set up the worksheet with the columns and data shown in Table 4.7. Include a mean- ingful title at the top of the worksheet. Ultimately, this worksheet will be used as a template and filled out on site by the painter.



To complete Steps 2–10, you need to calculate the individual component costs by room, writing all formulas so that they can be copied down the column. List all other inputs that are needed for your calculations on a separate worksheet in the work- book—named appropriately. Assume all wall surfaces, including the ceiling area, are to be included when calculating repair and painting costs. Remember, your formulas will need to work when new quantities are substituted into the data-entry area.

2. In the column you’ve already listed, calculate the total square footage (sf) of walls and ceiling. If a room is 10' by 12' with an 8' ceiling height, it would have two walls that are 10' × 8' (total of 160 sf) and two walls that are 12' × 8' (total of 192 sf), and a ceiling of 10' × 12' (120 sf) for a total of 472 sf. Do not subtract any area for windows, doors, and so on.

3. To the right of the Paint Quality column, calculate the cost of wall repairs and primer. Only walls with a wall condition of poor (3) will require wall repair and primer. This cost is estimated as $0.50 per sf of wall/ceiling. If no primer is required, a value of 0 should be entered. Remember to list any additional inputs on a separate worksheet as described above.

4. In an adjacent column, calculate the cost of the first coat of paint. If the condition of the wall is 1, the cost of paint is $0.65 per sf; if the condition of the wall is 2, the cost of paint is $0.70 per sf; otherwise, the cost is $0.85 per sf.

5. In an adjacent column, calculate the cost of the second coat of paint based on the following criteria:

• If the condition of the wall is 3, a second coat of paint will be required at $0.45 per sf. • If the condition of the walls is not poor (3), but new wall color is lighter than the existing color, a second coat of paint will be required at $0.50 per sf.

• Otherwise, no second coat will be required, and a value of $0 should be entered.

6. In an adjacent column, calculate the cost adjustment for paint quality based on the following criteria:

• If premium paint is used, add $0.25 per sf.

• If economy paint is used, deduct $0.15 per sf.

7. In an adjacent column, calculate the total cost to paint this room (primer, first coat, second coat, and adjustments for paint quality).

8. In an adjacent column, determine if (TRUE or FALSE) this is a low-priced room. A low-priced room is one that is estimated to cost less than $300.

9. Create a row below the data that totals the costs of each item (primer, first coat, and so on) and then a grand total of all items for all rooms.

10. Because larger jobs have certain economies of scale in setup and cleanup, a discount is given based on these estimated values to jobs based on their total size. Just below the grand total, determine the total discounted price of the job based on the following: • If the total cost of the painting job is less than $800, then there is no discount. • If the total cost of the painting job is at least $800 but less than $2,000, then a 5% discount will be given (discount is calculated based on the grand total cost for all items and all rooms). • If the total cost of the painting job is at least $2,000 but less than $5,000, then a 10% discount will be given. • If the total cost of the painting job is $5,000 or more, then a 15% discount will be given.

11. Format your worksheets so that they are easy to read and information is clearly identifiable. Highlight the result of Step 10 in yellow.

12. Save and close the Paint Calculator.xlsx workbook.

**Level 3** – Analyzing Dealership Promotions for CKG Auto CKG Auto runs several promotions each year to reward dealerships for their sales efforts, sometimes on specific car models and other times for overall sales. CKG Auto is running three different promotions for large dealerships, based on performance over this past

calendar year. Small and medium-sized dealerships have similar promotions but based on different expected volumes and rebate percentages. The promotions are as follows:

• A rebate on shipping expenses based on exceeding expected quarterly volumes: These are savings CKG Auto realizes from its trucking carriers and has decided to pass along as a reward to dealerships that have exceeded expectations. Rebates for each quarter were set by management as follows: 1st quarter, $75 per car sold (actual volume); 2nd quarter, $80 per car sold; 3rd quarter, $85 per car sold; and 4th quarter, $80 per car sold. Dealerships are awarded the rebate on a quarter-by-quarter basis, only for quarters where their actual sales exceeded expected volumes for that quarter. Expected sales volumes for large dealerships for each quarter are as follows: – 1st Quarter: 400 – 2nd Quarter: 410 – 3rd Quarter: 415 – 4th Quarter: 390

• An overall sales volume bonus based on exceeding expected annual volumes: Dealerships that exceeded the expected annual sales volume by more than 15% are awarded a $10,000 bonus. Dealerships that exceeded the expected annual sales volume by 15% or less are awarded a $5,000 bonus. Otherwise, no bonus is awarded ($0).

• A “Best in Class” bonus of $8,000 awarded to the one dealership with the highest overall sales volume in its class You have been asked to set up a worksheet to record the dealer information for the past year and apply the appropriate promotions to each dealership. The actual dealership quarterly sales volumes have already been entered in a worksheet. Now, you will finalize the analysis. Complete the following:

1. Open the workbook named CKGPromo.xlsx located in the Chapter 4 folder, and then save the file as Promo Large Dealerships.xlsx. This past year’s quarterly sales volumes and expected sales volumes for large dealerships have already been entered into this workbook. Complete the analysis using any additional columns and/or rows as you deem necessary. All formulas should work when copied either across or down, as needed. Include titles in each column and/or row to identify the corresponding data. Add any appropriate formatting to make the worksheet easy to read.

2. Insert rows at the top of the worksheet to create an input area where you can list the inputs such as bonus amounts, shipping rebates, and so on. List the inputs explicitly and use only one worksheet for this task, so that any inputs can be easily displayed for management and then later copied and modified to calculate the promotions for both the medium and small dealership classes. Insert rows as needed, and be sure to clearly label each input so that the data can be interpreted and modified easily next year. Wrap text and format the data as needed.

3. In a column adjacent to the quarterly sales data, calculate the corresponding annual sales volume for each dealership.

4. Calculate the value of the shipping rebate for each dealer for each quarter (use four new columns). This should require only one formula that can be copied down the column and across the row. Be sure your inputs are set up so that this can be easily accomplished. Remember, dealers will only receive rebates in quarters where their actual quarterly sales volumes exceeded expected sales volumes. In an adjacent column, determine the total value of the shipping rebate for all four quarters by dealership.

5. Analyze the quality of these volume estimates by categorizing the quality of the annual volume estimate versus the actual annual volumes for each dealership into the following categories:

• Display “Excellent” if the estimate is within 10% (higher or lower) of the actual sales volume. (Hint: For example, if you wanted to determine if the estimated value 26 is within +/– 25% of the sales value of 40, you would need to test this value to make sure that both 26>=40–.25\*40 and 26<=40+.25\*40.)

• Display “Good” if the estimate is greater than 10% higher or lower, but within 20% higher or lower of the actual volume.

• Display “Poor” if the estimate is greater than 20% higher or lower.

6. In an adjacent column or columns, calculate the value of the annual sales volume bonus for each dealership.

7. In an adjacent column, calculate the value of the “Best in Class” bonus for each dealership. (Only the dealership with the highest annual sales volume will receive this; all others will receive $0.)

8. In a row below the data, calculate the total values for all dealers for sales volume, shipping rebates, sales, and bonuses.

9. In an adjacent column, determine if (TRUE or FALSE) this dealership received money during this year for both a shipping rebate and a sales volume bonus. Copy the formula down the column to obtain the corresponding value for each dealership.

10. Skipping one row below the totals, in the column just used in Step 9, determine (TRUE or FALSE) if none of the dealerships received both shipping rebates and a volume bonus. Label the row accordingly.

11. Just below the result of Step 10, determine if only dealerships with Excellent estimate qualities (determined in Step 5) received both shipping rebates and a sales volume bonus. This formula need not work if any of the input data or formulas are later updated. Label the row accordingly.

12. Again, skip a row below the data. Then, in the following rows, determine for each rebate/bonus the number of dealerships receiving this rebate/bonus and the average value of the bonus (include dealerships that did not earn a bonus in the average calculation).

13. Save and close the Promo Large Dealerships.xlsx workbook.