Homework #1 Help
Major League Sports Problem

Background Information

Professional teams in all major sports in the U.S. and Canada operate as franchises within a league. The four major leagues include Major League Baseball (MLB), the National Basketball Association (NBA), National Football League (NFL), and National Hockey League (NHL).

The four major leagues are distinguished from other leagues in terms of their business size and popularity, as measured by annual revenue and average attendance. For example, in the 2022-2023 season, the 30 NBA teams generated combined revenue of $10.58 billion [1].

Problem Statement

In this assignment, students will analyze the four major sports leagues by revenue and attendance for seasons from 2005 through 2022.

Instructions

WARNING: This is not the actual Homework for your section. You will not receive any credit for completing this project.

IMPORTANT: Complete the steps below in the order they are given. Completing the steps out of order may complicate the assignment or result in an incorrect result.

1. Download and extract the provided Data Files ZIP file. It contains the following file for use in this assignment:

    a. **revenue.csv** – Information on revenue of the four major sports leagues for the seasons beginning in the years 2005 through 2022 [1]–[4].

Column Name	Type	Description
Season	Number	Year the season starts in.
MLB Revenue	Number	Revenue generated by Major League Baseball teams.
NBA Revenue	Number	Revenue generated by National Basketball Association teams.
NFL Revenue	Number	Revenue generated by National Football League teams.
NHL Revenue	Number	Revenue generated by National Hockey League teams.
Total Revenue	Number	Total revenue of the four major sports leagues.

2. Create a new Microsoft Excel workbook named **hwhelp1_*lastname_firstname*_mlsp.xlsx**.

3. We must adjust the sheets in our workbook.

   a. Rename *Sheet1* to *Revenue*.

   b. Add a new sheet named *Analysis Questions*.

4. Import the following item into the workbook:

   a. **revenue.csv** file – Import starting in cell **A3** of the *Revenue* sheet. The file is comma-delimited. Its first row contains headers.

5. We wish to apply formatting to the *Revenue* sheet.

   a. We must set up a table to store data on revenue.

      i. If a table does not already exist in cells **A3** through **F21**, create one using a style of your choice. The table has headers and will overlap external data ranges. If prompted, convert the selection to a table and remove all external connections.

      ii. If a table already exists in cells **A3** through **F21**, format the table using a style of your choice other than the default table style.

   b. We need to add additional columns to store rank and percentage data.

      i. Insert two new table columns to the right of existing column **F**.

   c. For the table, turn on the ***Total Row*** option.

   d. Enter text in the cells as indicated below:

      i. **A1**: `Major League Sports Revenue –` *Firstname Lastname*

      ii. **G3**: `Total Revenue Rank`

      iii. **H3**: `NFL Revenue Percentage`

   e. Merge-and-center cells **A1** through **H1**.

   f. Set the font size to 16-point for cell **A1**.

6. We need to perform calculations to analyze the *Revenue* sheet data.

   a. In column **H**, calculate the percentage of total revenue that came from the NFL using the formula:

   $$\frac{[NFL\ Revenue]}{[Total\ Revenue]}$$

   b. In column **G**, use the `RANK.EQ()` function to rank each year by its total revenue.

   c. We would like to summarize the revenue data.

      i. In the total row, individually sum columns **B** through **F**.

      ii. In the total row, do not display any statistics in columns **G** and **H**.

7. We must apply additional formatting to the *Revenue* sheet.

   a. Format the cells as indicated below:

      i. **B4** through **F22**: currency with no decimal places

      ii. **H4** through **H21**: percentage with 1 decimal place

   b. AutoFit the widths of columns **A** through **H**.

   c. Apply conditional formatting to the NFL revenue percentage in cells **H4** through **H21**.

      i. If the percentage was less than 38% (< 0.38), change the cell fill color to red and the text color to white.

      ii. If the percentage was at least 40% (≥ 0.40), change the fill color to green and the text color to white.

8. We wish to create a chart to plot revenue for each season.

   a. Create a 2-D line chart based on cells **A3** through **F21** of the *Revenue* sheet. Move the chart to a new chart-only sheet named *Revenue Chart*.

      Ensure the years are shown as labels for the horizontal (category) axis, not plotted as chart data. Specify appropriate chart and axis titles.

   b. Add a trendline based on the total revenue. Use the trendline type that best fits the data and forecast the values forward 10 periods (through the 2032 season). Display the **R-squared** value on the chart.

      NOTE: You cannot use the *Moving Average* type for your trendline.

9. We need to set up the *Analysis Questions* sheet so that it can store responses to the analysis questions.

   a. Enter text in the cells as indicated below:

      i. **A1:** `Question Step`

      ii. **B1:** `Response`

   b. Bold the contents of row **1**.

   c. AutoFit the width of column **A**. Set the width of column **B** to 100.

   d. Set the height for rows **2** through **4** to 110.

   e. Change the vertical alignment setting for columns **A** and **B** so that the text is displayed at the top of each row.

   f. Turn on text wrapping for column **B**.

10. Starting in row **2** of the *Analysis Questions* sheet, answer three of the five analysis questions below. Respond to one question per row. List the step whose question you are answering in column **A** (i.e., list `10a` for the question in Step 10a).

   a. Which trendline type did you use on *Revenue Chart*? Why did you choose this type of trendline?

   b. Aside from 2020, which was impacted by the COVID-19 pandemic, there has been a steady increase in total revenue of the four major sports leagues. What do you think is the main reason behind this?

   c. MLB revenue fell much more sharply in 2020 than revenue for the other sports. Why do you think this is the case?

   d. The Super Bowl is famous for having the most expensive commercial airtime on television. Why is Super Bowl airtime so costly?

   e. The four major sports leagues each have revenue that is many times larger than the other professional sports leagues in the U.S. and Canada [5]. Why is this the case?

Grading Rubric

This is a practice assignment and is worth no points. A comparable Homework would be worth 60 points and graded using this rubric, with partial credit awarded as appropriate:

Steps 3a-b	2 points total	Steps 7a-b	3 points total
Step 4	3 points	Steps 7c(i)-(ii)	4 points total
Steps 5a-f	6 points total	Step 8a	10 points
Step 6a	5 points total	Step 8b	6 points
Step 6b	5 points total	Steps 9a-f	4 points total
Steps 6c(i)-(ii)	3 points total	Steps 10a-e (pick 3 of 5)	3 points each

The analysis questions in Steps 10a-e will be evaluated using this rubric:

Standard	Meets Requirements (1.5 points)	Does Not Meet Requirements (0 points)
Answer is reasonable.	Answer addresses the question prompt and is factually correct or a reasonable interpretation of available data.	Answer does not address the question prompt, is factually incorrect, or is an unreasonable interpretation of available data.
Answer is supported.	Logical rationale is provided to support the given answer.	Logical rationale is not provided to support the given answer.

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Acknowledgments

The logos in the introduction appear courtesy of Major League Baseball [6], the National Basketball Association [7], National Football League [8], and National Hockey League [9].

References

[1] "National Basketball Association total league revenue," Statista, Oct. 2024. Available: *https://www.statista.com/statistics/193467/total-league-revenue-of-the-nba-since-2005/*.

[2] "Major League Baseball total league revenue," Statista, Mar. 2025. Available: *https://www.statista.com/statistics/193466/total-league-revenue-of-the-mlb-since-2005/*.

[3] "Total revenue of all National Football League (NFL) teams," Statista, Aug. 2024. Available: *https://www.statista.com/statistics/193457/total-league-revenue-of-the-nfl-since-2005/*.

[4] "National Hockey League - total league revenue," Statista, Dec. 2023. Available: *https://www.statista.com/statistics/193468/total-league-revenue-of-the-nhl-since-2006/*.

[5] "List of professional sports leagues by revenue," *Wikipedia*, Dec. 16, 2016. Available: *https://en.wikipedia.org/w/index.php?title=List_of_professional_sports_leagues_by_revenue&oldid=755162530*.

[6] *Major League Baseball Logo*. 2016. Available: *https://en.wikipedia.org/w/index.php?title=File:Major_League_Baseball.svg*.

[7] *National Basketball Association Logo*. 2016. Available: *https://en.wikipedia.org/w/index.php?title=File:NBALogo.svg*.

[8] *National Football League Logo*. 2016. Available: *https://en.wikipedia.org/w/index.php?title=File:National_Football_League_2008.svg*.

[9] *National Hockey League Logo*. 2016. Available: *https://en.wikipedia.org/w/index.php?title=File:05_NHL_Shield.svg*.