Tables
WV Mining Problem

Topics

- Create and format tables
- Insert rows and columns
- Use the table total row
- Sort data
- Answer analysis questions

Background Information

This project includes information on coal mining in West Virginia from 1999 to 2019.

Instructions

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. **mining_ppt_wvmp.xlsx** – Information on coal mining in West Virginia [1], [2].

Sheet: *Coal Mined*		
Column Name	**Type**	**Description**
County	Text	Name of the West Virginia county.
Region	Text	Region where the county is located.
1999	Number	Tons of coal mined in the county in 1999.
2004	Number	Tons of coal mined in the county in 2004.
2009	Number	Tons of coal mined in the county in 2009.
2014	Number	Tons of coal mined in the county in 2014.
2019	Number	Tons of coal mined in the county in 2019.

Sheet: *Prices*		
Column Name	**Type**	**Description**
County	Text	Name of the West Virginia county.
Region	Text	Region where the county is located.
1999	Currency	Per-ton price of coal sold in 1999.
2004	Currency	Per-ton price of coal sold in 2004.
2009	Currency	Per-ton price of coal sold in 2009.
2014	Currency	Per-ton price of coal sold in 2014.
2019	Currency	Per-ton price of coal sold in 2019.
Average Price	Currency	Empty column.
Inflation-Adjusted 1999	Currency	Empty column.
2019 Rank	Number	Empty column.
2019 Rank Class	Text	Empty column.

Sheet: *Total Values*		
Column Name	**Type**	**Description**
County	Text	Name of the West Virginia county.
Region	Text	Region where the county is located.
1999	Currency	Empty column.
2004	Currency	Empty column.
2009	Currency	Empty column.
2014	Currency	Empty column.
2019	Currency	Empty column.
Coal Pricing	Text	Empty column.
2014-2019 Change	Text	Empty column.
Sparkline	Sparkline	Empty column.
County (Region)	Text	Empty column.

Sheet: *Forecasts*		
Column Name	**Type**	**Description**
Region	Text	Region where the county is located.
1999 Tons	Number	Tons of coal mined in the region in 1999.
2004 Tons	Number	Tons of coal mined in the region in 2004.
2009 Tons	Number	Tons of coal mined in the region in 2009.
2014 Tons	Number	Tons of coal mined in the region in 2014.
2019 Tons	Number	Tons of coal mined in the region in 2019.
2024 Tons	Number	Empty column.
2024 Price	Currency	Forecasted per-ton price of coal in 2024, assuming 2.5% inflation from 2019.
2024 Total Coal Value	Currency	Empty column.

Sheet: *Analysis Questions*		
Column Name	**Type**	**Description**
Question Number	Text	Question being answered.
Response	Text	Response to the analysis question prompt.

2.   Open the **mining_ppt_wvmp.xlsx** workbook in Microsoft Excel.

Create and format tables / Insert rows and columns

3.   We wish to apply formatting to the *Coal Mined* sheet.

    a.   Format the table in cells **A3** through **G58** using a style of your choice other than the default table style.

    b.   We need to add additional table columns to store statistics.

        i.   Insert three new table columns to the right of existing column **G**.

    c.   For the table, turn on the **Total Row** and **First Column** options.

    d.   Enter text in the cells as indicated below:

        i.   **H3**: Pctg of Total Mined

        ii.   **I3**: 2019 Top 10 County

        iii.   **J3**: 1999+ Top 10 County

        iv.   **A60**: Minimum

        v.   **A61**: Maximum

        vi.   **A62**: Average

        vii.   **A63**: Median

        viii.   **A64**: Correlation

4.   We must apply formatting to the *Prices* sheet.

    a.   Format cells **A3** through **K58** as a table using a style of your choice. The table has headers.

    b.   We need to add an additional table column to store statistics.

        i.   Insert one new table column to the right of existing column **K**.

    c.   Enter text in the cells as indicated below:

        i.   **L3**: Coal Pricing

5.   We also wish to apply formatting to the *Total Values* sheet.

    a.   Format cells **A3** through **K58** as a table using a style of your choice. The table has headers.

6. We wish to apply formatting to the *Forecasts* sheet.

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

Use the table total row

7. On the *Coal Mined* sheet, we would like to summarize the amount of coal mined for each year.

   a. In the total row, individually find the sum for columns **C** through **G**.

   b. In the total row, do not display any statistics in columns **H** through **J**.

8. On the *Forecasts* sheet, we would like to summarize the amount of coal mined for each year.

   a. In the total row, individually find the sum for columns **B** through **G** and column **I**.

   b. In the total row, do not display any statistics in column **H**.

Sort data

9. On the *Coal Mined* sheet, sort the data by county in ascending order.

Answer analysis questions

10. Starting in row **2** of the *Analysis Questions* sheet, answer the analysis questions below. Respond to one question per row.

    a. How does the amount of coal mined in Monongalia County in 2019 compare with other counties in the state? Why might Monongalia County produce more coal than many counties in the traditional coalfields of southern and southwestern West Virginia?

    b. What county produced the most coal in 1999? Is it the same county that produced the most coal in 2019? Other that depletion of the available coal reserves, why might coal production move to new locations?

Tables

Grading Rubric

This assignment is worth 8 points. It will be graded by your instructor using this rubric:

Standard	Meets Requirements (8 points)	Does Not Meet Requirements (0 points)
Student made reasonable effort in correctly completing assignment.	Assignment is at least 70% complete and correct, or student contacted instructor for help on incorrect or incomplete items.	Assignment is less than 70% complete and correct, and student did not contact instructor for assistance on incorrect or incomplete items.

This rubric will be used for peer evaluation of this assignment:

Standard	Excellent	Satisfactory	Needs Improvement
Assignment is correct and complete.	Assignment is at least 90% complete and correct.	Assignment is 70%-89% complete and correct.	Assignment is less than 70% complete and correct.

The analysis questions in Steps 9a-b will be evaluated using this rubric:

Standard	Meets Requirements	Does Not Meet Requirements
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.

References

[1] "Historical & Statistical Data," *West Virginia Office of Miners' Health, Safety and Training*, May 18, 2021. Available: *https://minesafety.wv.gov/historical-statistical-data/*.
[2] "Annual Coal Report: Table 30," *Energy Information Administration*, Oct. 05, 2020. Available: *http://www.eia.gov/coal/annual/*.