

ACC575: Data Analytics for Accounting
LN7: Excel Dashboard - Exercise with S&P 500

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1 ASSIGNMENT: Dashboard for S&P 500 Data

2 How to Load data from Web

3 Functions to Analyze Data

- IFERROR()
- LEFT(), RIGHT(), and MID()
- FIND() and SEARCH()
- TEXTAFTER()
- DATE(), YEAR(), MONTH(), and DAY()

Background knowledge:

- S&P 500 includes 500 large-cap U.S. stocks across all major industries.
- The exact number of stocks in the S&P 500 is greater than 500 because some companies have multiple classes of stock (e.g., Class A and Class B shares of Google, Berkshire Hathaway, etc.).

ASSIGNMENT: Due by the coming Sunday

We would like to gain some insights from the S&P 500 data. Create a dashboard to answer the following questions. Include your answers beneath the dashboard in your Excel file.

- ❶ Q1. Did most firms join the S&P 500 before 1980? (Get YEAR. Draw a bar chart to show the distribution of the year of joining.)
- ❷ Q2. Which states have the highest number of S&P 500 companies?
- ❸ Q3. Which sectors are most represented in the S&P 500?
- ❹ Q4. Is there any relationship between sectors and states?
- ❺ Q5. If you would like to work for a health care company, which states would you need to relocate to?
- ❻ Q6. What about Michigan? What are the top sectors in Michigan? What kinds of companies are there in Michigan?

NOTE: Effective communication is important. Ensure your dashboard is clear, easy to understand, and user-friendly.

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Wikipedia page for the S&P 500

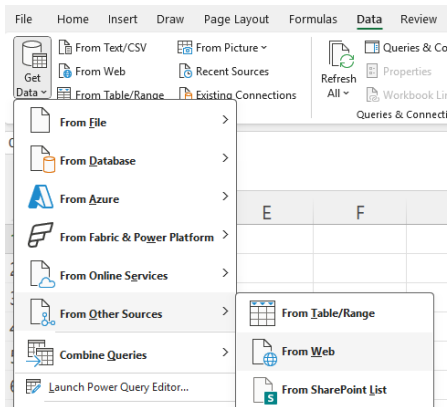
Go to https://en.wikipedia.org/wiki/List_of_S%26P_500_companies; or search "s&p500 list wikipedia" in Google.

S&P 500 component stocks [\[edit \]](#)

Symbol ↕	Security ↕	GICS Sector ↕	GICS Sub-Industry ↕	Headquarters Location ↕	Date added ↕	CIK ↕	[hide] Founded ↕
MMM ↗	3M	Industrials	Industrial Conglomerates	Saint Paul, Minnesota	1957-03-04	0000066740	1902
AOS ↗	A. O. Smith	Industrials	Building Products	Milwaukee, Wisconsin	2017-07-26	0000091142	1916
ABT ↗	Abbott Laboratories	Health Care	Health Care Equipment	North Chicago, Illinois	1957-03-04	0000001800	1888
ABBV ↗	AbbVie	Health Care	Biotechnology	North Chicago, Illinois	2012-12-31	0001551152	2013 (1888)
ACN ↗	Accenture	Information	IT Consulting &	Dublin, Ireland	2011-	0001467373	1989

How to Load data from Web

- 1 Check the Wikipedia page for the S&P 500.
- 2 Load the data into Excel.
- 3 Data → Get Data → From Other Sources → From Web.
- 4 Copy and paste the URL into the dialog box.
- 5 Find the table to load.



From Web

☒ Basic ☐ Advanced

URL

Navigator

☐ Select multiple items

Display Options ▾

HTML Tables [2]

Table 1

Table 2

Suggested Tables [6]

Table 3

Table 4

Table 5

Table 6

Table 7

Table 8

Text [2]

HTML Code

Displayed Text

Table View Web View

Table 1

Symbol	Security	GIICS Sector	GIICS Sub-I
MMM	3M	Industrials	Industri
AOS	A. O. Smith	Industrials	Building
ABT	Abbott Laboratories	Health Care	Health C
ABBV	AbbVie	Health Care	Biotech
ACN	Accenture	Information Technology	IT Cons
ADBE	Adobe Inc.	Information Technology	Applica
AMD	Advanced Micro Devices	Information Technology	Semicon
AES	AES Corporation	Utilities	Indeper
AFL	Aflac	Financials	Life & H
A	Agilent Technologies	Health Care	Life Scie
APD	Air Products	Materials	Industri
ABNB	Airbnb	Consumer Discretionary	Hotels,
AKAM	Akamai Technologies	Information Technology	Interne
ALB	Albemarle Corporation	Materials	Specialt
ARE	Alexandria Real Estate Equities	Real Estate	Office R
ALGN	Align Technology	Health Care	Health C
ALLE	Allegion	Industrials	Building
LNT	Alliant Energy	Utilities	Electric
ALL	Allstate	Financials	Propert
GOOGL	Alphabet Inc. (Class A)	Communication Services	Interact
GOOG	Alphabet Inc. (Class C)	Communication Services	Interact

Add Table Using Examples

Load ▾

Transform Data

Cancel

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- IFERROR()
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- FIND() and SEARCH()
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You need to use the following functions to analyze the data:

- IFERROR()
- LEFT()
- FIND()
- TEXTAFTER()
- YEAR()

The next slides include the details of these (and related) functions.

IFERROR()

Description

- IFERROR() is a logical function that returns a specified value if a formula evaluates to an error, otherwise returns the result of the formula.
- It helps prevent error messages from appearing in your spreadsheet and provides user-friendly alternatives.

Syntax

=IFERROR(value, value_if_error)

- **value:** The formula or expression to evaluate
- **value_if_error:** The value to return if an error occurs
- Returns the formula result if no error, otherwise returns the specified value

IFERROR() Example 1: Division by Zero

Description: Calculates return on assets (ROA) and returns "-" if assets are zero to avoid calculation errors.

	A	B	C
1	<u>Net Income</u>	<u>Total Assets</u>	<u>ROA (A/B)</u>
2	10,000	100,000	0.10
3	5,000	0	-
4	8,000	160,000	0.05

Formula in cell C2: =IFERROR(A2/B2, "-")

LEFT()

Description

- LEFT() extracts a specified number of characters from the beginning (left side) of text
- Useful for extracting codes, prefixes, or identifiers
- Returns text, even if the original contains numbers

Syntax

=LEFT(text, [num_chars])

- **text**: The text string from which to extract
- **num_chars**: Number of characters to extract (default = 1)
- Returns text

RIGHT()

Description

- RIGHT() extracts a specified number of characters from the end (right side) of text
- Useful for extracting suffixes, file extensions, or trailing codes
- Returns text

Syntax

=RIGHT(text, [num_chars])

- **text**: The text string from which to extract
- **num_chars**: Number of characters to extract (default = 1)
- Returns text

Description

- MID() extracts characters from the middle of text, starting at a specified position
- Most flexible of the three extraction functions
- Useful when data follows a specific pattern

Syntax

`=MID(text, start_num, num_chars)`

- **text**: The text string from which to extract
- **start_num**: Position of first character to extract (1 = first character)
- **num_chars**: Number of characters to extract
- Returns text

Example: Parsing Account Codes

Account code format: "XXXX-Description-Type" (e.g., "1000-Cash-Asset")

Account Code	Formula	Result
1000-Cash-Asset	=LEFT(A2,4)	1000
1000-Cash-Asset	=RIGHT(A2,5)	Asset
1000-Cash-Asset	=MID(A2,6,4)	Cash

Accounting Applications:

- Extract account numbers from GL codes
- Parse transaction IDs: "INV-2024-12345" → extract year "2024"
- Extract check numbers: "CHK-001234" → "001234"
- Separate fiscal year from period code: "FY2024-Q1" → "2024"

Example: First Digit Analysis for Fraud Detection

Extract first digit from amounts to check Benford's Law:

Amount	Formula	First Digit
1,234.56	=VALUE(LEFT(TEXT(A2,"0"),1))	1
5,678.90	=VALUE(LEFT(TEXT(A3,"0"),1))	5
987.65	=VALUE(LEFT(TEXT(A4,"0"),1))	9

Breakdown:

- 1 TEXT(A2,"0") converts number to text (removes formatting)
- 2 LEFT(...,1) extracts first character
- 3 VALUE(...) converts back to number for counting

Use Case: Fraud detection by analyzing digit distribution in expenses

FIND()

Description

- FIND() locates one text string within another
- Returns the position (number) where the text is found
- Case-sensitive
- Returns #VALUE! error if text not found

Syntax

=FIND(find_text, within_text, [start_num])

- **find_text**: The text you want to find
- **within_text**: The text in which to search
- **start_num**: (Optional) Position to start search (default = 1)
- Returns position number

SEARCH()

Description

- SEARCH() works like FIND() but is case-insensitive
- Can use wildcard characters (* and ?)
- More flexible than FIND()

Syntax

=SEARCH(find_text, within_text, [start_num])

- **find_text**: The text you want to find (can use wildcards)
- **within_text**: The text in which to search
- **start_num**: (Optional) Position to start search
- Returns position number

FIND() and SEARCH() - Example

Example: Finding Delimiters in Account Codes

Account Code	Formula	Position of "-"
1000-Cash-Asset	=FIND("-",A2)	5
5000-Revenue-Income	=FIND("-",A3)	5

Combined with MID() to Extract:

Extract	Formula
Account number	=LEFT(A2,FIND("-",A2)-1)
Account name	=MID(A2,FIND("-",A2)+1,FIND("-",A2,6)-FIND("-",A2)-1)

Use Case: Parse structured text like "1000-Cash-Asset" into components

FIND() vs. SEARCH() - Key Difference

Case Sensitivity:

Text	Find	FIND()	SEARCH()
"Accounts Payable"	"pay"	#VALUE!	10
"Accounts Payable"	"Pay"	10	10

When to Use Each:

- FIND(): When exact case matters (account codes, IDs)
- SEARCH(): When case doesn't matter (searching descriptions)
- SEARCH(): When using wildcards (*, ?)

TEXTAFTER()

Description

- TEXTAFTER() returns the text that appears after a delimiter
- Available in Excel 365 and Excel 2021
- Useful for parsing structured labels like "Segment:Region"
- Supports multiple occurrences of the delimiter and optional match modes

Syntax

`=TEXTAFTER(text, delimiter, [instance_num], [match_mode], [match_end], [if_not_found])`

- **text**: The source string (cell reference or text)
- **delimiter**: The separator to look for (e.g., "-", ":", or "—")
- **instance_num**: Optional occurrence (default = 1); use negative to count from the end
- **match_mode**: 0 exact (default), 1 ignore case
- **if_not_found**: Optional custom message when delimiter missing

Example: Extracting Industry From Ticker Labels

Ticker Label	Formula	Result
MSFT - Technology	=TEXTAFTER(A2,"- ")	Technology
JNJ - Health Care	=TEXTAFTER(A3,"- ")	Health Care
CAT - Industrials	=TEXTAFTER(A4,"- ")	Industrials

Handling Missing Delimiter:

- Use =TEXTAFTER(A5,"- ",1,0,"No industry listed")
- Prevents #CALC! and keeps dashboards clean

TEXTAFTER() With Multiple Delimiters

Scenario: Account Codes in the Form “Segment-Region-Product”

Code	Goal	Formula
FIN-WEST-TRUCK	Region	=TEXTAFTER(A2,"-",1)
FIN-WEST-TRUCK	Product	=TEXTAFTER(A2,"-",2)
OPS-EAST-AUTO	Region	=TEXTAFTER(A3,"-",1)
OPS-EAST-AUTO	Product	=TEXTAFTER(A3,"-",2)

Tip: Combine with TEXTBEFORE() to capture the first segment and with LET() to avoid repeating long cell references.

DATE()

Description

- DATE() creates a date from individual year, month, and day values
- Useful when date components are in separate cells
- Returns a valid Excel date serial number

Syntax

=DATE(year, month, day)

- **year**: 4-digit year (e.g., 2024)
- **month**: Month number (1-12)
- **day**: Day number (1-31)
- Returns a date value

YEAR(), MONTH(), DAY()

Description

- These functions extract components from a date
- YEAR() returns the 4-digit year
- MONTH() returns the month number (1-12)
- DAY() returns the day of the month (1-31)

Syntax

`=YEAR(date)` `=MONTH(date)` `=DAY(date)`

- **date:** A valid date value or cell reference
- Each returns an integer

DATE(), YEAR(), MONTH(), DAY() - Example

Example: Financial Statement Date Analysis

Filing Date	Formula	Year	Month	Day
2024-03-15	=YEAR(A2)	2024		
2024-03-15	=MONTH(A2)		3	
2024-03-15	=DAY(A2)			15

Creating a date:

Year	Month	Day	Formula	Result
2024	12	31	=DATE(A2,B2,C2)	2024-12-31

Use Case: Grouping transactions by fiscal year or quarter in PivotTables