

Congratulations! You passed!  
Grade received 100% To pass 100% or higher



## 1. Activity overview

In previous activities, you gained experience using spreadsheet functions for manipulating and cleaning data. In this activity, you'll use the CONCAT and CONCATENATE functions to help you quickly and efficiently combine multiple pieces of raw data into new data.

By the time you complete this activity, you will be able to use these functions to combine data. This will enable you to simplify and condense data, which is important for processing and cleaning data in your career as a data analyst.

### What you will need

To get started, you will need the CONCAT function exercise spreadsheet.

To use the template for the spreadsheet, click the link below and select "Use Template."

Link to template: [CONCAT Function Exercise Spreadsheet](#)

OR

If you don't have a Google account, you can download the spreadsheet directly from the attachment below.

[Dataset for Project - CONCAT function](#)  
[XLSX File](#)

## Using the CONCAT and CONCATENATE functions

Occasionally, you will encounter a dataset with data values in separate cells that you want to combine as a single value in a single cell. This is common when dealing with names and dates. The dataset may have separate columns for first names and last names, but you may want a column with the full names. City/state and month/year combinations are also often desirable to have together, as they are likely to be recorded together.

The CONCAT function in spreadsheets can combine these kinds of data.

### Combining data from two cells

First, using the spreadsheet you downloaded, you'll combine the two sets of names in columns First Name and Last Name in a new column called Full Name.

To do this, follow these steps:

1. Click on cell F2. This is where you start the data for the new column. After you click on the cell, type =CONCAT(A2,B2) into the function bar and hit Enter (Windows) or Return (Mac).

The screenshot shows a Google Sheets spreadsheet with data for US Presidents. Column A contains 'First', column B contains 'Last', column C contains 'Month', column D contains 'Day', and column E contains 'Year'. Cell F2 contains the formula '=CONCAT(A2,B2)', which is highlighted with a blue border. A green callout bubble points to this formula with the text 'GeorgeWashington'. The formula is being typed into the formula bar at the top. The rest of the table shows various presidents and their birth details.

	A	B	C	D	E	F	G	H
1	First	Last	Month	Day	Year			
2	George	Washington	April		30	1789	GeorgeWashington	
3	John	Adams	March		4	1797		
4	Thomas	Jefferson	March		4	1801		
5	James	Madison	March		4	1809		
6	James	Monroe	March		4	1817		
7	John Quincy	Adams	March		4	1825		
8	Andrew	Jackson	March		4	1829		
9	Martin	Van Buren	March		4	1837		
10	William Henry	Harrison	March		4	1841		
11	John	Tyler	April		4	1841		
12	James K.	Polk	March		4	1845		
13	Zachary	Taylor	March		4	1849		
14	Millard	Fillmore	July		9	1850		
15	Franklin	Pierce	March		4	1853		

Once you press enter, the following data should appear in the cell:

A	B	C	D	E	F	G
First	Last	Month	Day	Year		
George	Washington	April	30	1789	George	Washington
John	Adams	March	4	1797		
Thomas	Jefferson	March	4	1801		
James	Madison	March	4	1809		
James	Monroe	March	4	1817		
John Quincy	Adams	March	4	1825		
Andrew	Jackson	March	4	1829		
Martin	Van Buren	March	4	1837		
William Henry	Harrison	March	4	1841		
John	Tyler	April	4	1841		
James K.	Polk	March	4	1845		
Zachary	Taylor	March	4	1849		
Millard	Fillmore	July	9	1850		
Franklin	Pierce	March	4	1853		

You have merged or, technically, concatenated the two data values from cells A2 and B2. Because you listed A2 first in the CONCAT function argument, it comes first in the final result.

Notice that the two names were combined without a space between them.

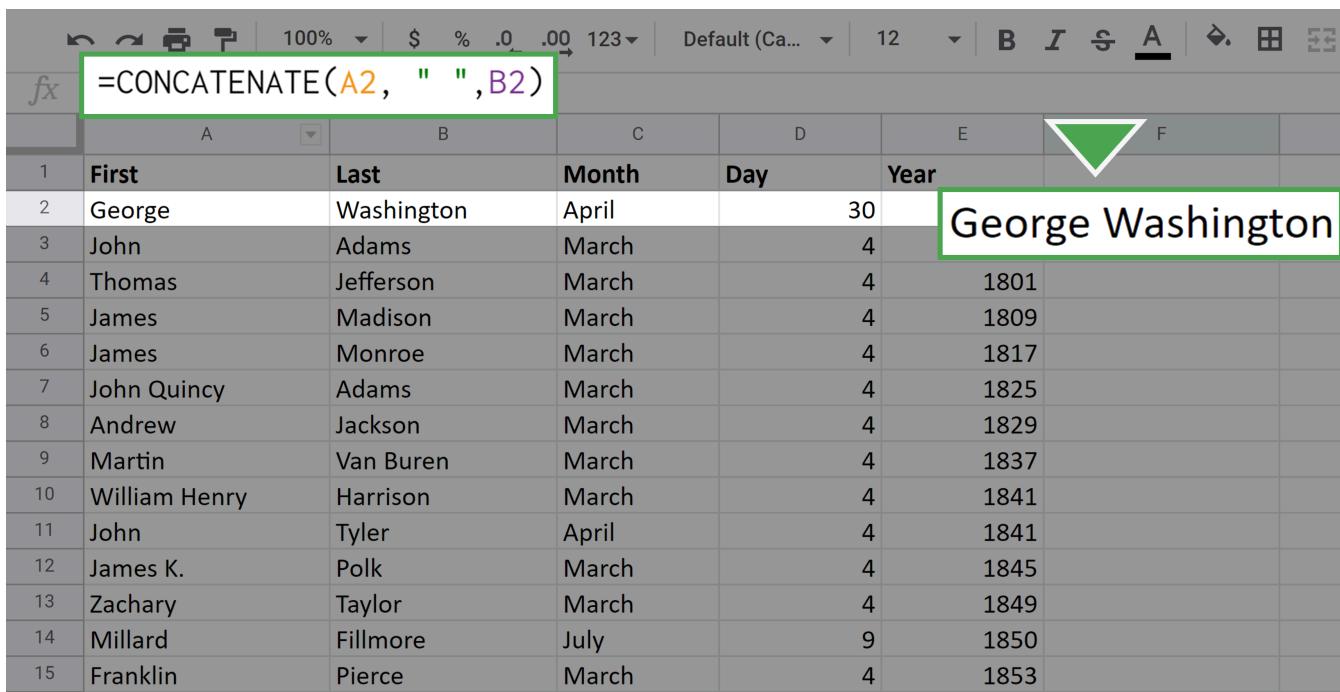
If you want to put the space in between, you need to use the full CONCATENATE function, which allows you to combine multiple strings.

2. Click again on the cell F2. In the function call, place a space in quotes between A2 and B2 separated by commas.

The screenshot shows a Microsoft Excel spreadsheet with data for US Presidents. The columns are labeled: First, Last, Month, Day, and Year. The formula bar at the top shows the function =CONCATENATE(A2, " ", B2) is entered into cell F2. The cell F2 contains the merged name "George Washington". The formula bar also shows the full formula =CONCATENATE(A2, " ", B2) with a blue highlight around it, indicating it is selected. The rest of the spreadsheet shows other presidents and their birth dates.

A	B	C	D	E	F	G
First	Last	Month	Day	Year	George Washington	
George	Washington	April	30	1789		
John	Adams	March	4	1797		
Thomas	Jefferson	March	4	1801		
James	Madison	March	4	1809		
James	Monroe	March	4	1817		
John Quincy	Adams	March	4	1825		
Andrew	Jackson	March	4	1829		
Martin	Van Buren	March	4	1837		
William Henry	Harrison	March	4	1841		
John	Tyler	April	4	1841		
James K.	Polk	March	4	1845		
Zachary	Taylor	March	4	1849		
Millard	Fillmore	July	9	1850		
Franklin	Pierce	March	4	1853		

Once you press enter or return, your screen should appear like this:

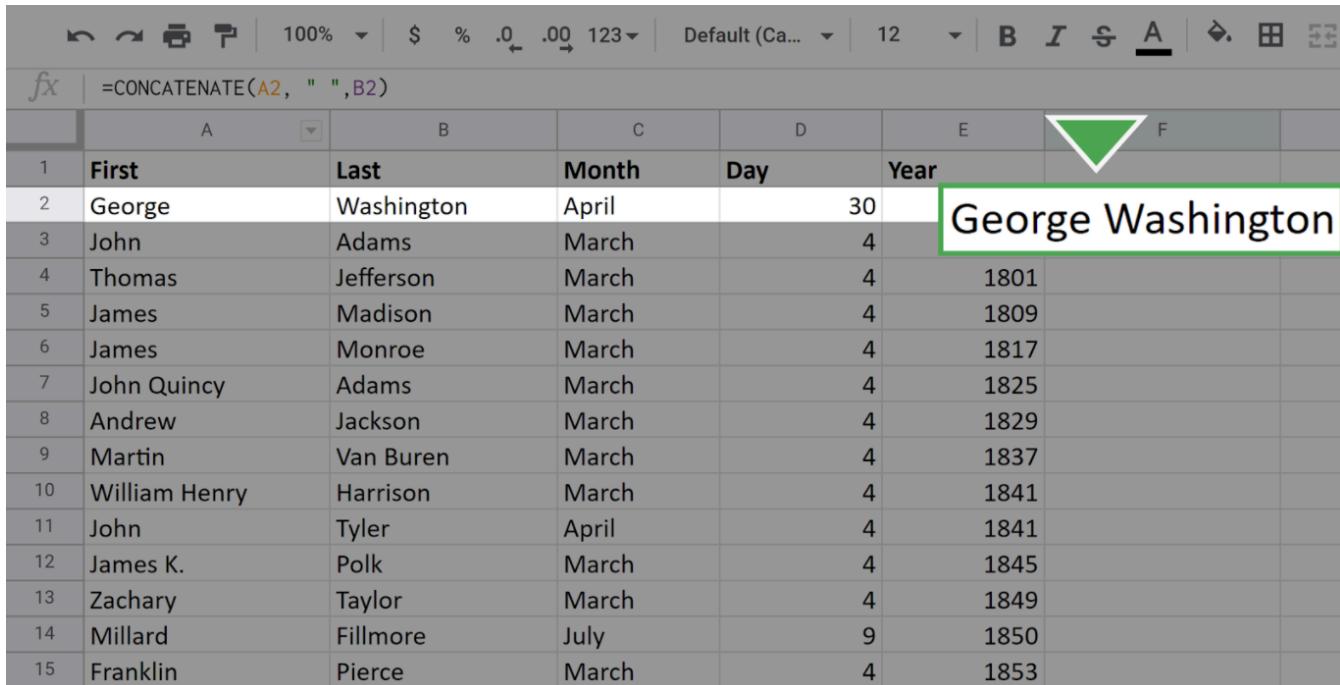


	A	B	C	D	E	F
1	First	Last	Month	Day	Year	
2	George	Washington	April	30		George Washington
3	John	Adams	March	4		
4	Thomas	Jefferson	March	4	1801	
5	James	Madison	March	4	1809	
6	James	Monroe	March	4	1817	
7	John Quincy	Adams	March	4	1825	
8	Andrew	Jackson	March	4	1829	
9	Martin	Van Buren	March	4	1837	
10	William Henry	Harrison	March	4	1841	
11	John	Tyler	April	4	1841	
12	James K.	Polk	March	4	1845	
13	Zachary	Taylor	March	4	1849	
14	Millard	Fillmore	July	9	1850	
15	Franklin	Pierce	March	4	1853	

Now there is a space between the first name and the last name.

Next, repeat this process for all the remaining cells in Column F. Of course, you don't want to do this manually for each cell. (Especially if the dataset were larger, it would be laborious to do this cell-by-cell.) Luckily, you can fill out the data in the column by using your mouse.

1. Click on the cell F2. Locate the small square in the lower-right corner of the highlighted boundary of the cell.



	A	B	C	D	E	F
1	First	Last	Month	Day	Year	
2	George	Washington	April	30		George Washington
3	John	Adams	March	4		
4	Thomas	Jefferson	March	4	1801	
5	James	Madison	March	4	1809	
6	James	Monroe	March	4	1817	
7	John Quincy	Adams	March	4	1825	
8	Andrew	Jackson	March	4	1829	
9	Martin	Van Buren	March	4	1837	
10	William Henry	Harrison	March	4	1841	
11	John	Tyler	April	4	1841	
12	James K.	Polk	March	4	1845	
13	Zachary	Taylor	March	4	1849	
14	Millard	Fillmore	July	9	1850	
15	Franklin	Pierce	March	4	1853	

2. Click on this square, drag your mouse to the bottom of the column, and release. All the cells in the column should populate with the full name of the appropriate president.

	C	D	E
Month	Day	Year	
April		30	George Washington
March		4	John Adams
March		4	Thomas Jefferson
March		4	James Madison
March		4	James Monroe
March		4	John Quincy Adams
March		4	Andrew Jackson
March		4	Martin Van Buren
March		4	William Henry Harrison
March		4	John Tyler
April		4	James K. Polk
March		4	Zachary Taylor
March		4	Millard Fillmore
July		9	
March		4	Franklin Pierce

- Note: While it does not happen in this dataset, you may have extra spaces in your result after you CONCAT. If you notice you have extra spaces, you can use the TRIM function to remove them.

#### Combining data from three cells

The procedure for combining three pieces of data from different cells is almost identical to what you just did. The only difference is that you include a third cell in the full CONCATENATE argument.

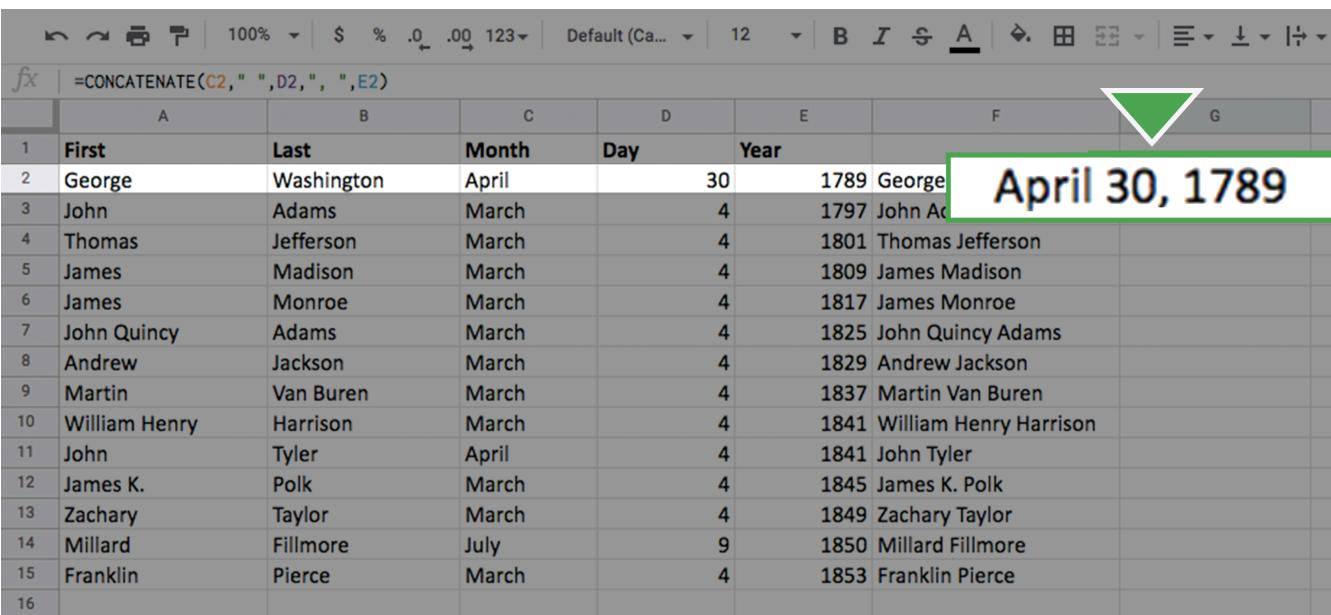
Now, combine the month, day, and year into a single data value: Date. This will occupy column G.

1. Click on the cell where you would like the new data to start. Here, this is cell G2.

2. Enter the CONCAT command as =CONCATENATE(C2, ", ", D2, ", ", E2)

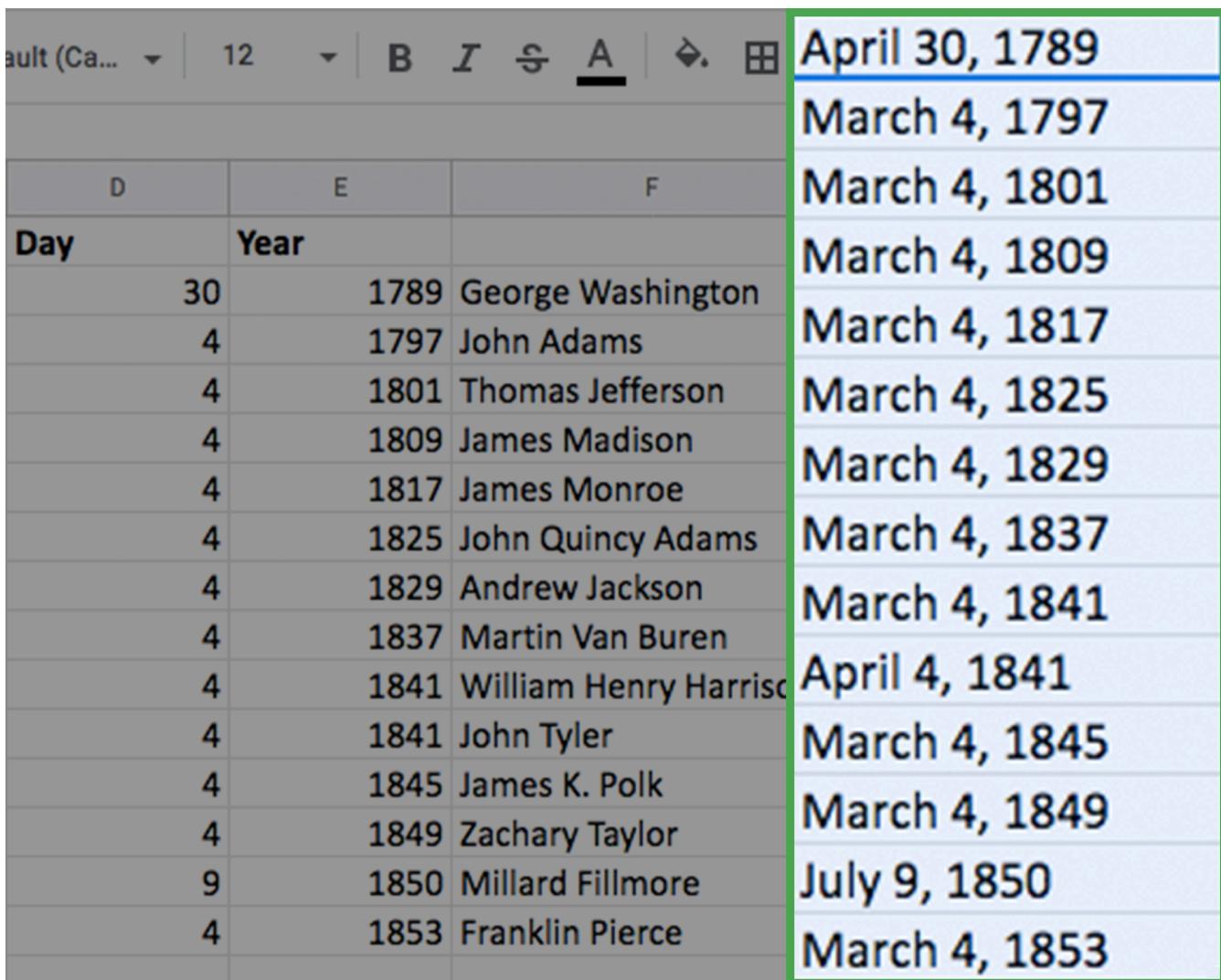
	A	B	C	D	E	F	G	H
1	First	Last	Month	Day	Year			
2	George	Washington	April	30	1789		April 30, 1789	
3	John	Adams	March	4				
4	Thomas	Jefferson	March	4	1801			
5	James	Madison	March	4	1809			
6	James	Monroe	March	4	1817			
7	John Quincy	Adams	March	4	1825			
8	Andrew	Jackson	March	4	1829			
9	Martin	Van Buren	March	4	1837			
10	William Henry	Harrison	March	4	1841			
11	John	Tyler	April	4	1841			
12	James K.	Polk	March	4	1845			
13	Zachary	Taylor	March	4	1849			
14	Millard	Fillmore	July	9	1850			
15	Franklin	Pierce	March	4	1853			

Pay particular attention to the extra strings you added between the month and the day, and between the day and the year. This is how you get the spaces and comma in your final result.



	A	B	C	D	E	F	G
1	First	Last	Month	Day	Year		
2	George	Washington	April	30	1789	George Washington	April 30, 1789
3	John	Adams	March	4	1797	John Adams	
4	Thomas	Jefferson	March	4	1801	Thomas Jefferson	
5	James	Madison	March	4	1809	James Madison	
6	James	Monroe	March	4	1817	James Monroe	
7	John Quincy	Adams	March	4	1825	John Quincy Adams	
8	Andrew	Jackson	March	4	1829	Andrew Jackson	
9	Martin	Van Buren	March	4	1837	Martin Van Buren	
10	William Henry	Harrison	March	4	1841	William Henry Harrison	
11	John	Tyler	April	4	1841	John Tyler	
12	James K.	Polk	March	4	1845	James K. Polk	
13	Zachary	Taylor	March	4	1849	Zachary Taylor	
14	Millard	Fillmore	July	9	1850	Millard Fillmore	
15	Franklin	Pierce	March	4	1853	Franklin Pierce	
16							

3. Fill out the rest of the column using the same click-and-drag technique as before. Your screen should appear like this:



D	E	F
Day	Year	
30	1789	George Washington
4	1797	John Adams
4	1801	Thomas Jefferson
4	1809	James Madison
4	1817	James Monroe
4	1825	John Quincy Adams
4	1829	Andrew Jackson
4	1837	Martin Van Buren
4	1841	William Henry Harrison
4	1841	John Tyler
4	1845	James K. Polk
4	1849	Zachary Taylor
9	1850	Millard Fillmore
4	1853	Franklin Pierce

Congratulations! You've combined data in spreadsheets using the CONCAT and CONCATENATE functions.

#### Confirmation and reflection

In an empty cell in the CONCAT function exercise spreadsheet, type the function =CONCATENATE(A7, " ", B7). What does this function return?

- John Quincy Adams
- #N/A
- John QuincyAdams
- JohnQuincyAdams

#### Correct

The function =CONCATENATE(A7, " ", B7) would return "John Quincy Adams." The correct function to use here would be CONCATENATE, which you can use to combine strings. Using CONCAT with these arguments would resolve this correctly in Microsoft Excel, but return an error in Google Sheets. Going forward, you can use this distinction to write proper spreadsheet functions.

2. In this activity, you used spreadsheet functions to combine data. In the text box below, write 2-3 sentences (40-60 words) in response to each of the following questions:

- What are some other kinds of data you could combine using CONCAT or CONCATENATE?
- What happens if a data analyst tries to work with dates or names that haven't been combined with CONCAT or CONCATENATE?

What are some other kinds of data you could combine using CONCAT or CONCATENATE?

CONCAT and CONCATENATE can combine street addresses (e.g., street name, city, state, and ZIP code), product identifiers (e.g., SKU and batch number), and contact details (e.g., area code and phone number). This helps create cohesive data entries, making datasets more readable and organized.

What happens if a data analyst tries to work with dates or names that haven't been combined with CONCAT or CONCATENATE?

Data can be fragmented across multiple cells without combining dates or names, making it challenging to perform meaningful analyses or lookups. It may lead to sorting, filtering, and referencing errors, as related information might be separated, complicating data interpretation and reducing data quality.

Correct

Congratulations on completing this hands-on activity! A good response would include how combining data with CONCAT and CONCATENATE helps you simplify and clean data by combining string data from multiple cells into a single cell.

In order to properly and efficiently analyze data, the data has to be clean and understandable. Data analysts use functions like CONCAT to make data easier to work with, which may require combining multiple cells. Coming up, you will learn more spreadsheet functions that will help you analyze data in spreadsheets.