

ILLINOIS TECH

How to Write Image Descriptions

Center for Learning Innovation

Tianrui Sun

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About Me

Tianrui Sun / Terry

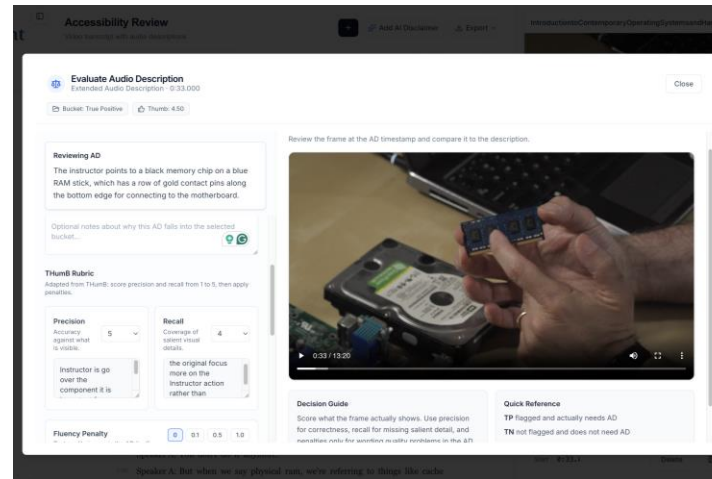
Generalist UI / UX Designer

LinkedIn:

www.linkedin.com/in/tianrui-sun



User-Centered Design



An AI Solution for Video Accessibility



LinkedIn QR

What Are Image Descriptions (Alt Text)?

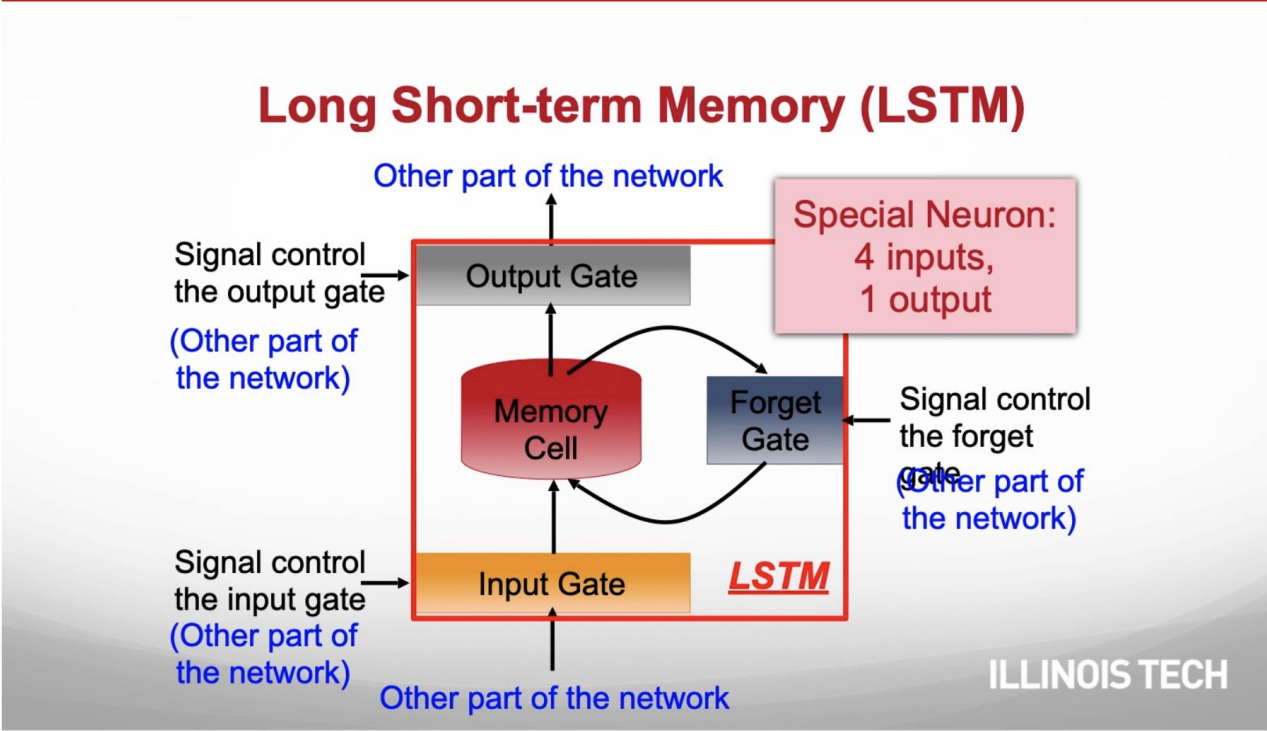
A short summary of an image added to digital content such as webpages, PDFs, or slide decks. It helps readers understand the image if the image does not load.

Key Features

- Usually 1–2 sentences
- About 100–120 characters
- Gives a high-level summary
- Matches the context of the page

Alt text Example

Normal



Without Alt text



With Alt text

An LSTM cell diagram showing memory storage and information flow through input, forget, and output gates.

Why It Matters?

When a screen reader encounters an image, it reads the alt text aloud so users can understand the visual content.

It Benefits



Search and
content
discovery



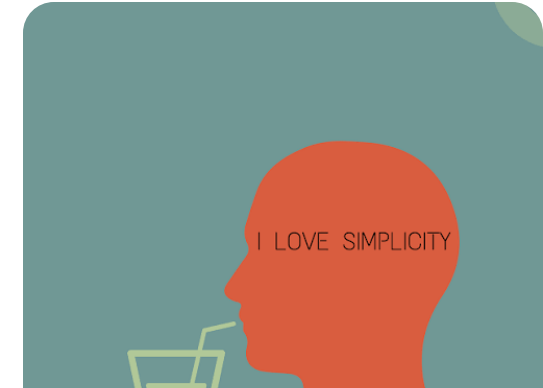
Screen reader
users

1.4% to 3% of
internet users.



People who
have limited
internet access

2.2 billion to 2.6
billion people



When you try to
understand
complex visuals

Simple Visual Example



Which Is Better?

Alt Text 1

Marina Ginestà, a 17-year-old female soldier with a rifle, overlooking Barcelona during the Spanish Civil War.

Alt Text 2

A medium close-up shot that positions the young woman slightly off-center, drawing immediate focus to her confident facial expression and the diagonal line of her rifle.

Alt Text 3

Young woman with rifle in a city skyline.



If We Focus On History

Alt Text

Marina Ginestà, a 17-year-old female soldier with a rifle, overlooking Barcelona during the Spanish Civil War.



If We Focus On Photography

Alt Text

A medium close-up shot that positions the young woman slightly off-center, drawing immediate focus to her confident facial expression and the diagonal line of her rifle.



If We Focus On Mood Building

Alt Text

Young woman with rifle in a city skyline.



**How Do We Decide What
To Describe?**

Context Shapes What to Describe

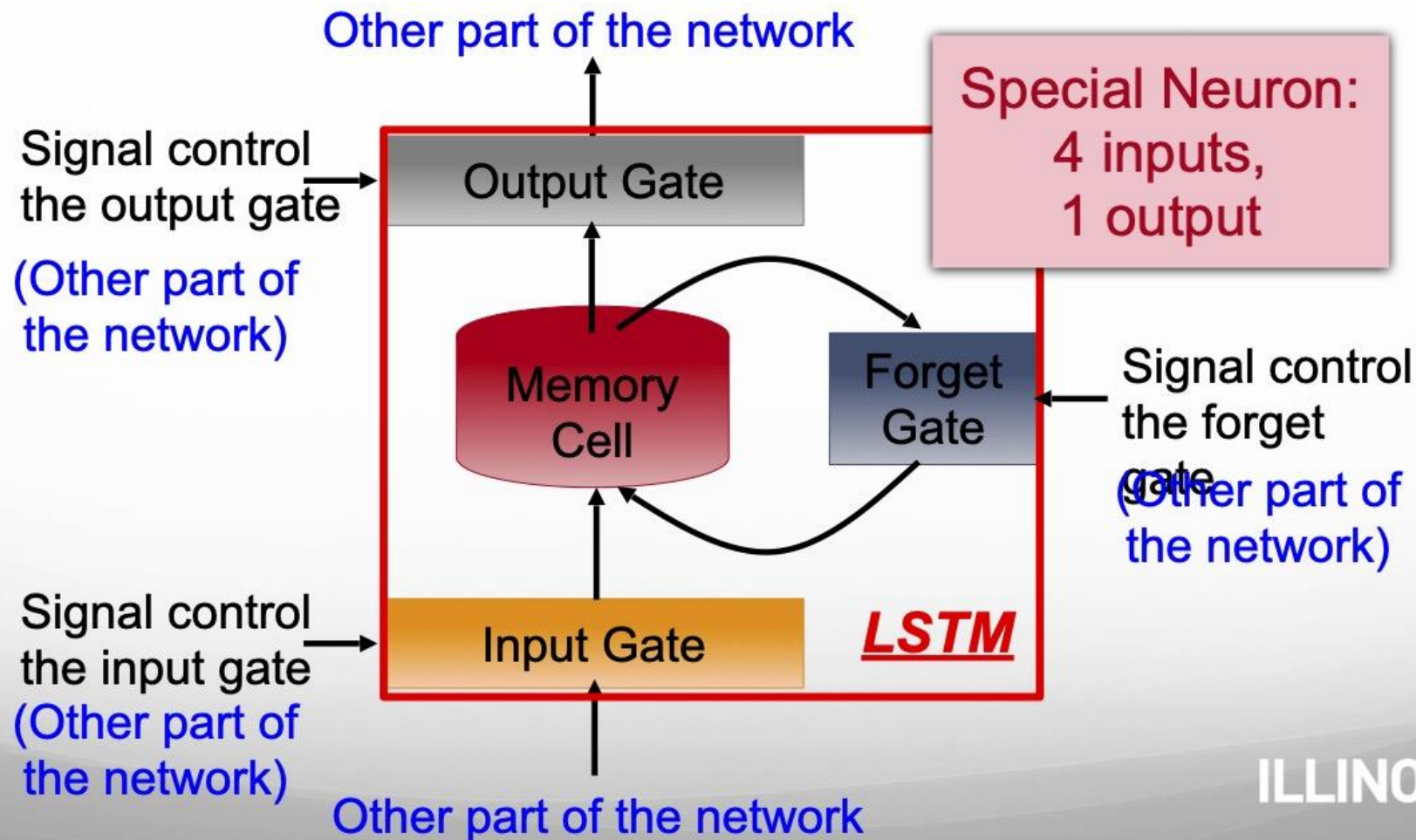
Start with the surrounding context. Look at the page's learning goal, identify how the image supports the content, and focus on the details that help readers understand it.

Consider information such as:

- The surrounding text or caption.
- The instructor's explanation in the text and video.
- Activities or assessments connected to the visual.
- References to the visual elsewhere in the lesson.

Complex Visual Example

Long Short-term Memory (LSTM)



Extended Description

An extended description gives more detail when a short image description is not enough. It is used for complex visuals such as charts, diagrams, or interfaces.

Key Features

- Adds detail beyond the alt text
- Expands on important visual information
- Kept as short as possible
- Usually 1–3 sentences

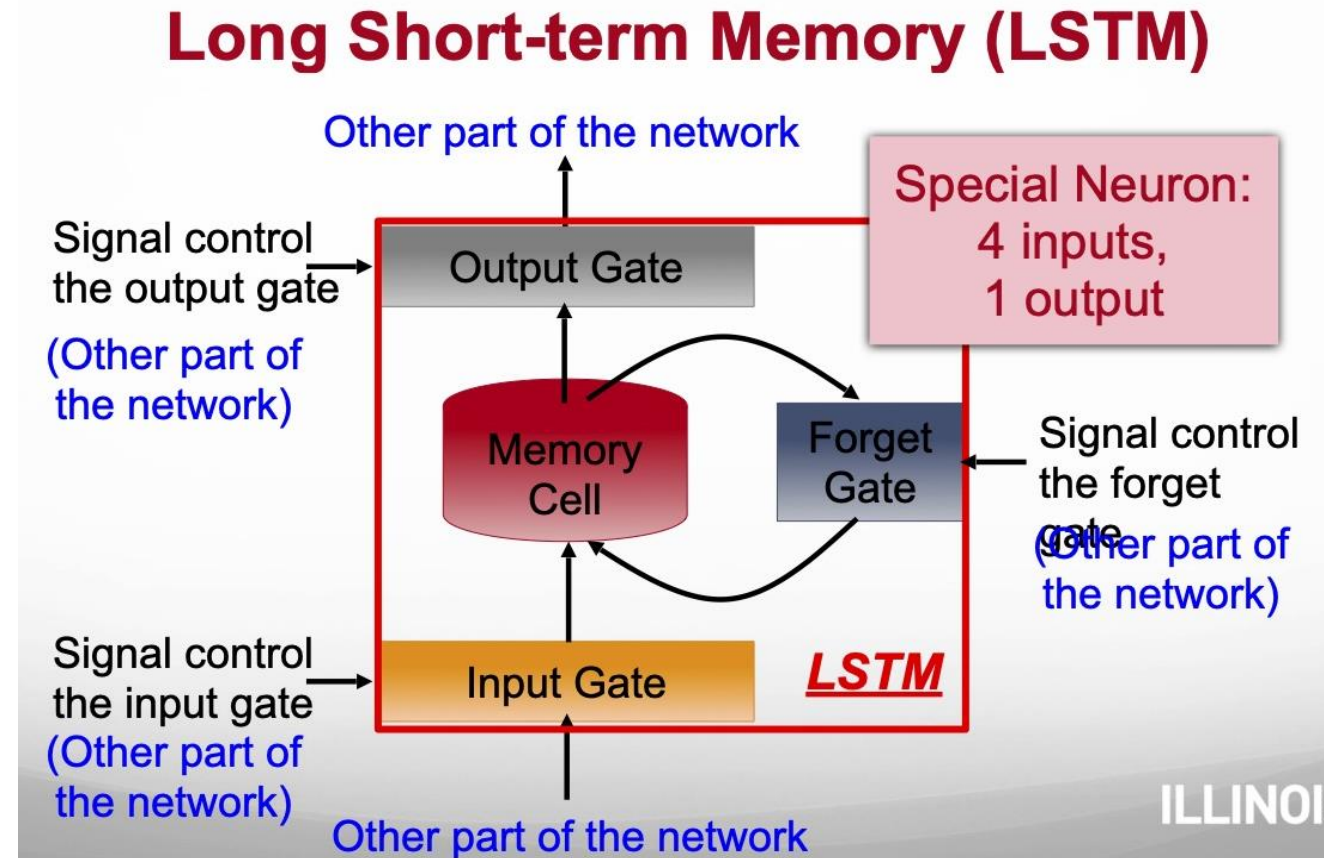
If We Focus On The Overall Concept

Alt Text

An LSTM cell diagram showing memory storage and information flow through input, forget, and output gates.

Extended Description

These gates regulate how information enters, is retained within, and exits the memory cell. Signals from other parts of the neural network influence each gate. The diagram emphasizes that an LSTM is designed to maintain information over time while forgetting or outputting information.



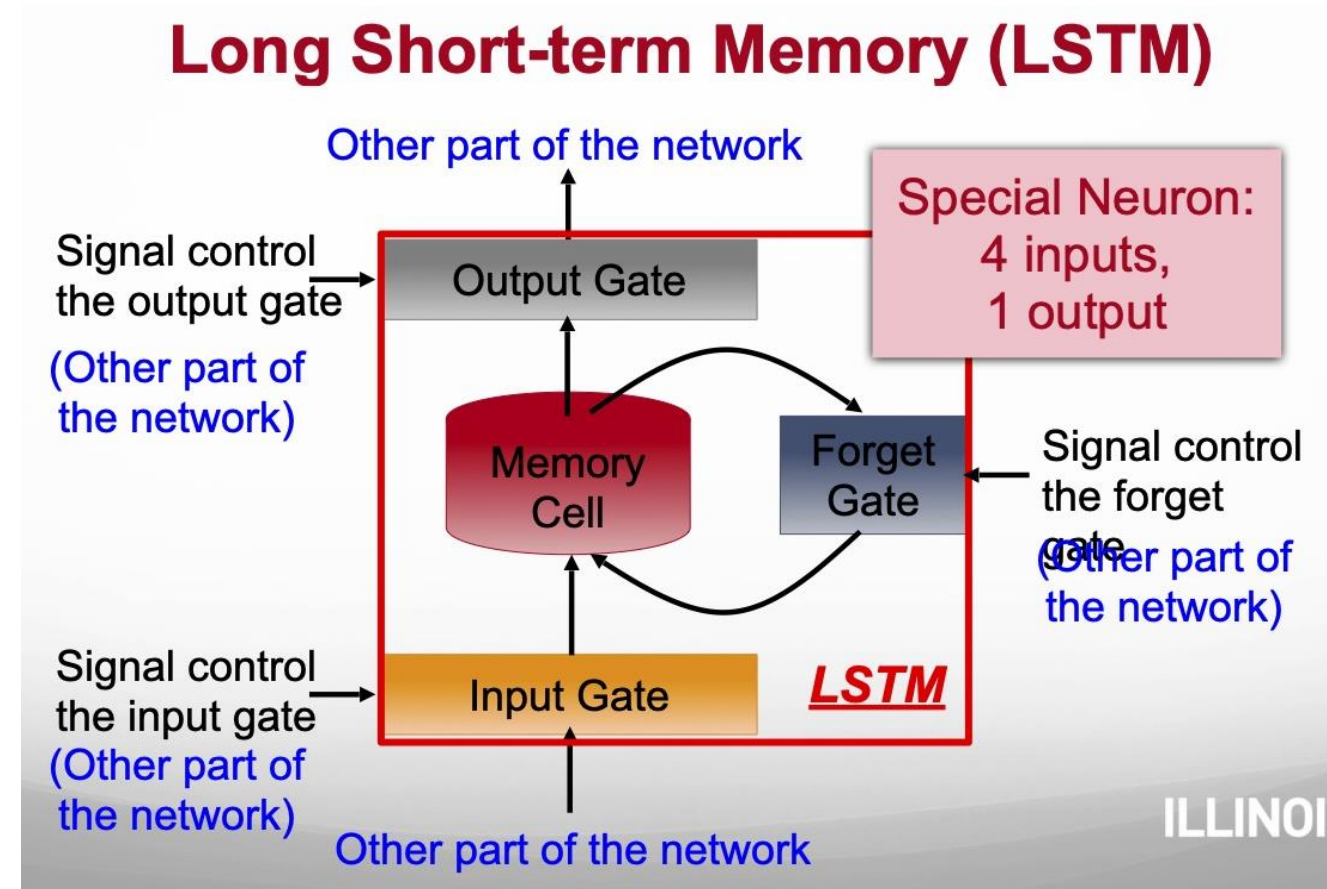
If We Focus On The Gate Functions

Alt Text

LSTM diagram showing how input, forget, and output gates regulate information stored in memory.

Extended Description

The input gate controls what new data enters the memory cell. The forget gate determines which stored information should be removed. The output gate controls what information is passed to the rest of the network. Arrows indicate the flow of data.



If We Focus On Data Flow

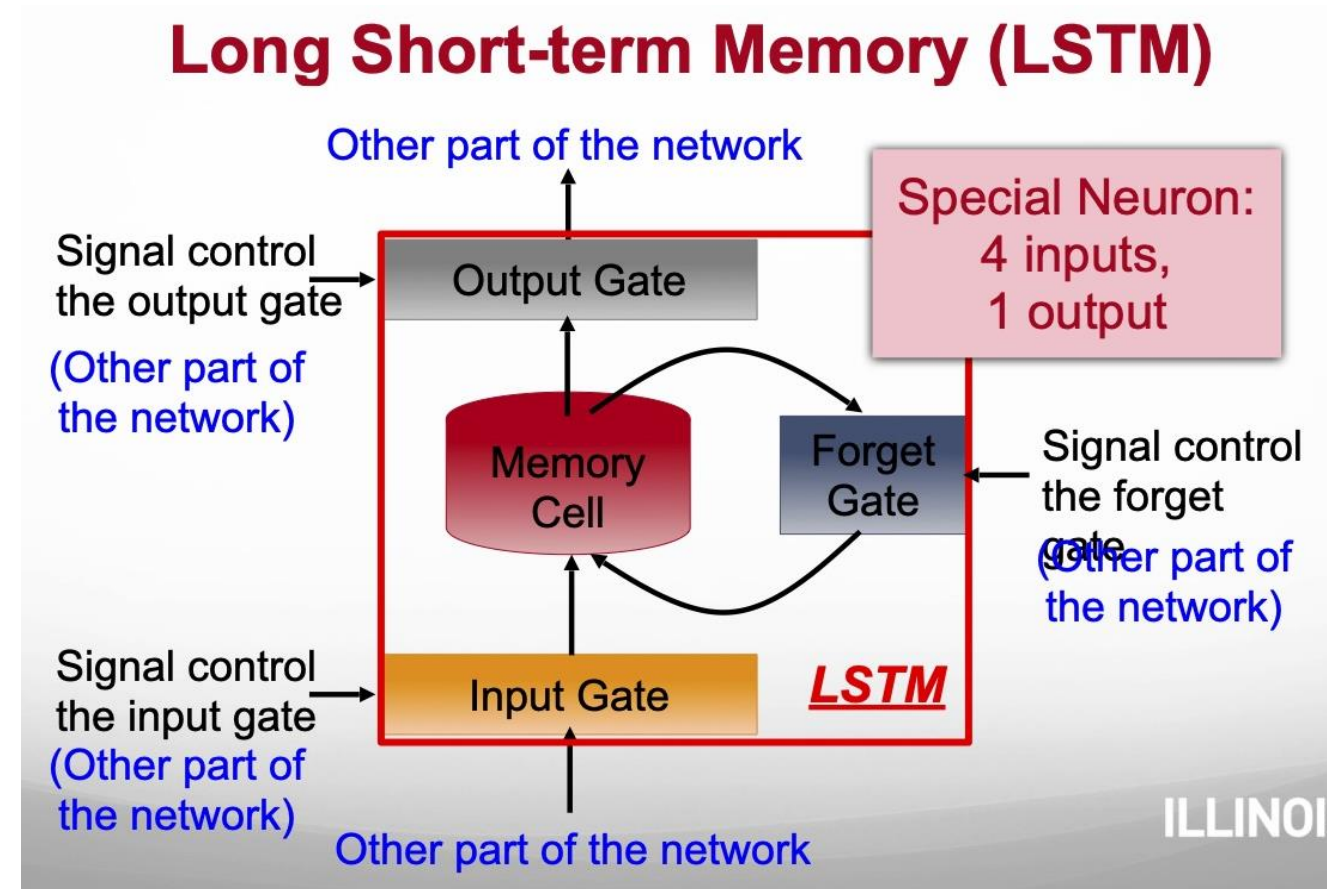
Alt Text

LSTM architecture showing information flow between gates, memory cell, and other network components.

Extended Description

A separate forget gate influences whether stored information remains in memory or is discarded.

Arrows indicate the direction of information flow among components. Additional signals from other parts of the neural network provide control inputs to the gates.



Thanks

ILLINOIS TECH

How to Write Image Descriptions

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Common Visual Types

Decorative Image

Factors to consider:

Does the photo explain a concept, process, or data relationship?

Do readers need the image to understand the lesson?

If the image is purely aesthetic,

Mark it as "Decorative" or leave the Alt text blank to save screen reader users' time with non-essential descriptions.



I'm excited to have you join this course. We're in for a learning experience about calculus. Get ready to explore, ask questions, and expand your knowledge. Together, we'll make this a rewarding experience.

Data Visualizations – Tables

Factors to consider:

Explain what the table is about and what the rows and columns represent.

To describe data details

Describe the trend, including headers, units, or adding in the table, when they are important for understanding the data.

	A	B	C	D	E	F	G	H	I	J
1	Best Buy									
2	Bi-Weekly Sales Store 2901 -- 75" LED Televisions									
3										
4	Quantity Sold					Cumulative QTY Sold				
5	Date	LG	Sony	Samsung	Date	LG	Sony	Samsung		
6	5/1/2023	8	4	5	May-01	8	4	5		
7	5/15/2023	4	0	11	May-15	12	4	16		
8	5/29/2023	2	1	10	May-29	14	5	26		
9	6/12/2023	9	0	5	Jun-12	23	5	31		
10	6/26/2023	7	0	4	Jun-26	30	5	35		
11	7/10/2023	4	3	8	Jul-10	34	8	43		
12	7/24/2023	7	3	5	Jul-24	41	11	48		
13	8/7/2023	6	3	9	Aug-07	47	14	57		
14	8/21/2023	1	2	4	Aug-21	48	16	61		
15	9/4/2023	8	0	11	Sep-04	56	16	72		
16	9/18/2023	2	6	7	Sep-18	58	22	79		
17	10/2/2023	10	11	7	Oct-02	68	33	86		
18	10/16/2023	10	5	2	Oct-16	78	38	88		
19	10/30/2023	9	8	3	Oct-30	87	46	91		
20	11/13/2023	7	5	4	Nov-13	94	51	95		
21	11/27/2023	2	11	3	Nov-27	96	62	98		

Tables Writing Templates

Alt Text

{columns × rows if needed} "{title}" table showing {overall topic or relationship}

Extended Description

Columns include {column names}.

Rows include {row names if meaningful}.

Insert table if needed.

{table}.

	A	B	C	D	E	F	G	H	I	J			
1	Best Buy												
2	Bi-Weekly Sales Store 2901 -- 75" LED Televisions												
3													
4	Quantity Sold					Cumulative QTY Sold							
5	Date	LG	Sony	Samsung	Date						LG	Sony	Samsung
6	5/1/2023	8	4	5	May-01						8	4	5
7	5/15/2023	4	0	11	May-15						12	4	16
8	5/29/2023	2	1	10	May-29						14	5	26
9	6/12/2023	9	0	5	Jun-12						23	5	31
10	6/26/2023	7	0	4	Jun-26						30	5	35
11	7/10/2023	4	3	8	Jul-10						34	8	43
12	7/24/2023	7	3	5	Jul-24						41	11	48
13	8/7/2023	6	3	9	Aug-07						47	14	57
14	8/21/2023	1	2	4	Aug-21						48	16	61
15	9/4/2023	8	0	11	Sep-04						56	16	72
16	9/18/2023	2	6	7	Sep-18						58	22	79
17	10/2/2023	10	11	7	Oct-02						68	33	86
18	10/16/2023	10	5	2	Oct-16						78	38	88
19	10/30/2023	9	8	3	Oct-30						87	46	91
20	11/13/2023	7	5	4	Nov-13						94	51	95
21	11/27/2023	2	11	3	Nov-27						96	62	98

If We Focus On Excel Design

Alt Text

15×10 "Best Buy" spreadsheet layout comparing an isolated raw sales table on the left with a rolling sum table on the right.

Extended Description

Columns include specific dates and individual unit counts for three brands ,which parallel an identical set of columns showing running totals. Rows include 15 bi-weekly date entries.

	A	B	C	D	E	F	G	H	I	J
1	Best Buy									
2	Bi-Weekly Sales Store 2901 -- 75" LED Televisions									
3										
4	Quantity Sold					Cumulative QTY Sold				
5	Date	LG	Sony	Samsung		Date	LG	Sony	Samsung	
6	5/1/2023	8	4	5		May-01	8	4	5	
7	5/15/2023	4	0	11		May-15	12	4	16	
8	5/29/2023	2	1	10		May-29	14	5	26	
9	6/12/2023	9	0	5		Jun-12	23	5	31	
10	6/26/2023	7	0	4		Jun-26	30	5	35	
11	7/10/2023	4	3	8		Jul-10	34	8	43	
12	7/24/2023	7	3	5		Jul-24	41	11	48	
13	8/7/2023	6	3	9		Aug-07	47	14	57	
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17	10/2/2023	10	11	7		Oct-02	68	33	86	
18	10/16/2023	10	5	2		Oct-16	78	38	88	
19	10/30/2023	9	8	3		Oct-30	87	46	91	
20	11/13/2023	7	5	4		Nov-13	94	51	95	
21	11/27/2023	2	11	3		Nov-27	96	62	98	

If We Focus On Data Analysis

Alt Text

"Best Buy Sales" table compares bi-weekly and cumulative TV sales totals for LG, Sony, and Samsung across 2023.

Extended Description

Samsung and LG finished neck-and-neck, with nearly 100 units sold each, while Sony finished last despite a massive sales surge late in the season.

Insert table if needed.

{table}.

	A	B	C	D	E	F	G	H	I	J
1	Best Buy									
2	Bi-Weekly Sales Store 2901 -- 75" LED Televisions									
3										
4	Quantity Sold					Cumulative QTY Sold				
5	Date	LG	Sony	Samsung	Date	LG	Sony	Samsung		
6	5/1/2023	8	4	5	May-01	8	4	5		
7	5/15/2023	4	0	11	May-15	12	4	16		
8	5/29/2023	2	1	10	May-29	14	5	26		
9	6/12/2023	9	0	5	Jun-12	23	5	31		
10	6/26/2023	7	0	4	Jun-26	30	5	35		
11	7/10/2023	4	3	8	Jul-10	34	8	43		
12	7/24/2023	7	3	5	Jul-24	41	11	48		
13	8/7/2023	6	3	9	Aug-07	47	14	57		
14	8/21/2023	1	2	4	Aug-21	48	16	61		
15	9/4/2023	8	0	11	Sep-04	56	16	72		
16	9/18/2023	2	6	7	Sep-18	58	22	79		
17	10/2/2023	10	11	7	Oct-02	68	33	86		
18	10/16/2023	10	5	2	Oct-16	78	38	88		
19	10/30/2023	9	8	3	Oct-30	87	46	91		
20	11/13/2023	7	5	4	Nov-13	94	51	95		
21	11/27/2023	2	11	3	Nov-27	96	62	98		

Data Visualizations – Bar Charts

Factors to consider:

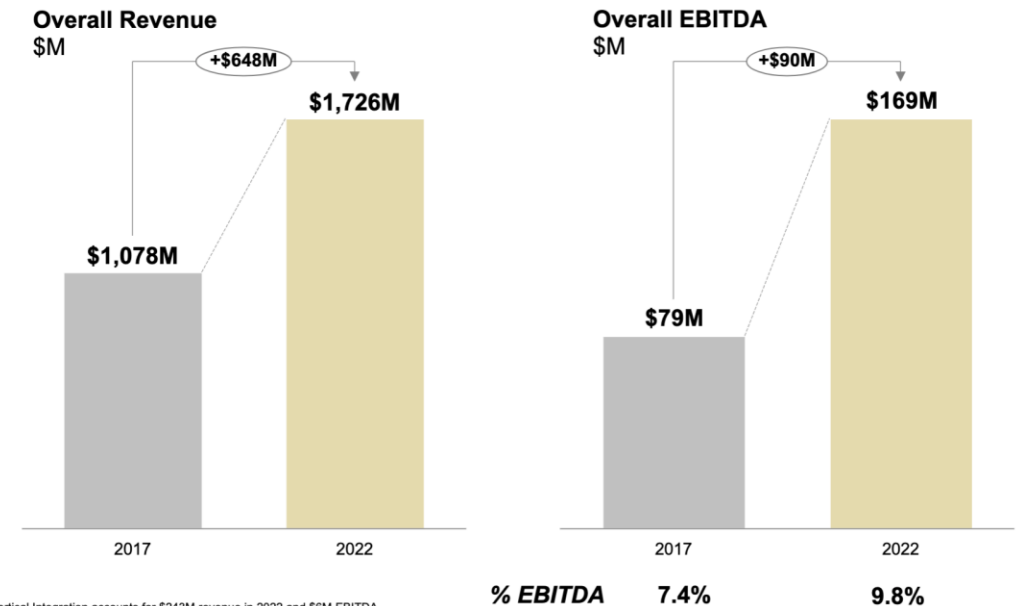
Emphasize comparison and ranking. State the categories being compared and the metric of measurement.

Looking for

- Highest, lowest, or most significant bars.
- The magnitude of the difference between them.

... and a step change in business performance for our investors

Project Fresh Projected Impact



1. Vertical Integration accounts for \$243M revenue in 2022 and \$6M EBITDA

Bar Chart Writing Templates

Alt Text

"{title}" bar chart compares {categories}. highlights {main comparison}.

Extended Description

The horizontal/vertical axis represents { }.

The tallest \ shortest bar represents { }, {Adding Data if needed }.

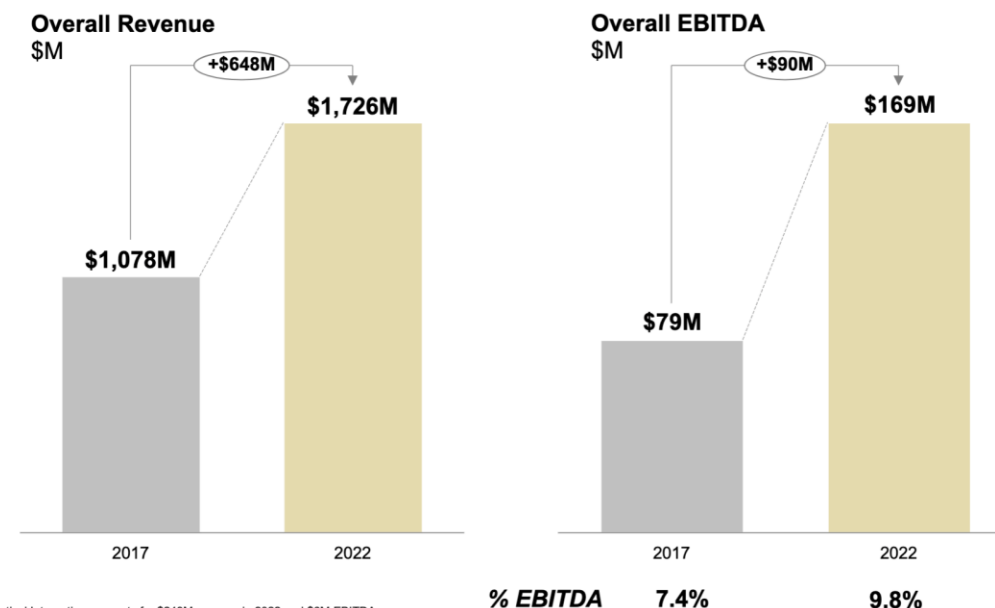
Insert table if needed.

{table}.

.

... and a step change in business performance for our investors

Project Fresh Projected Impact



1. Vertical Integration accounts for \$243M revenue in 2022 and \$6M EBITDA

If We Focus On Chart Structure

Alt Text

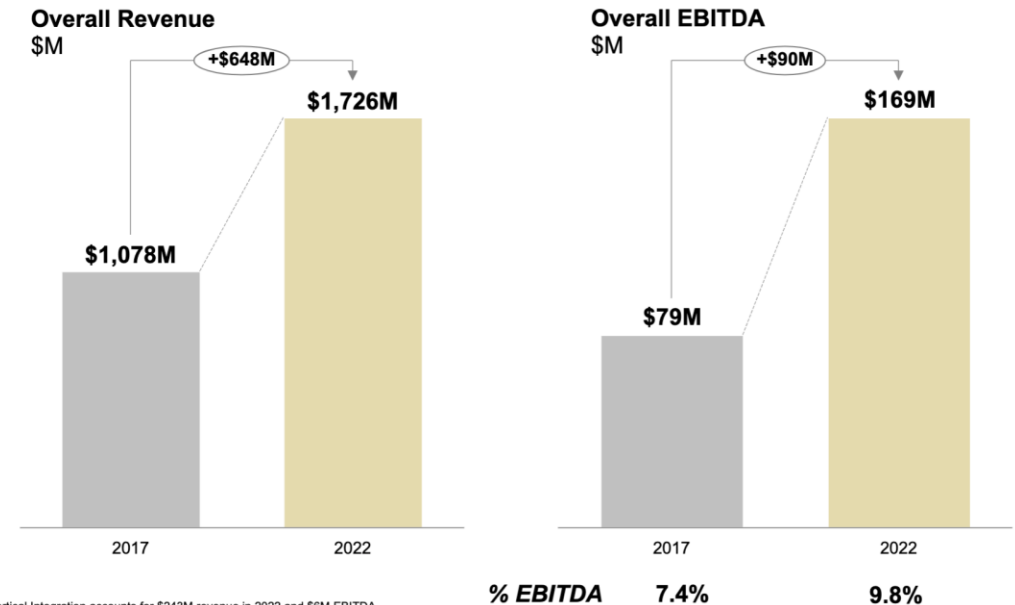
Two side-by-side bar charts compare Project Fresh revenue and EBITDA in 2017 and 2022.

Extended Description

Each chart uses a gray bar for 2017 and a light gold bar for 2022, with value labels above the bars and an oval callout showing the amount of increase between the two years.

... and a step change in business performance for our investors

Project Fresh Projected Impact



1. Vertical Integration accounts for \$243M revenue in 2022 and \$6M EBITDA

If We Focus On Business Impact

Alt Text

Two bar charts compare Project Fresh's performance in 2017 and 2022, showing increases in revenue and EBITDA.

Extended Description

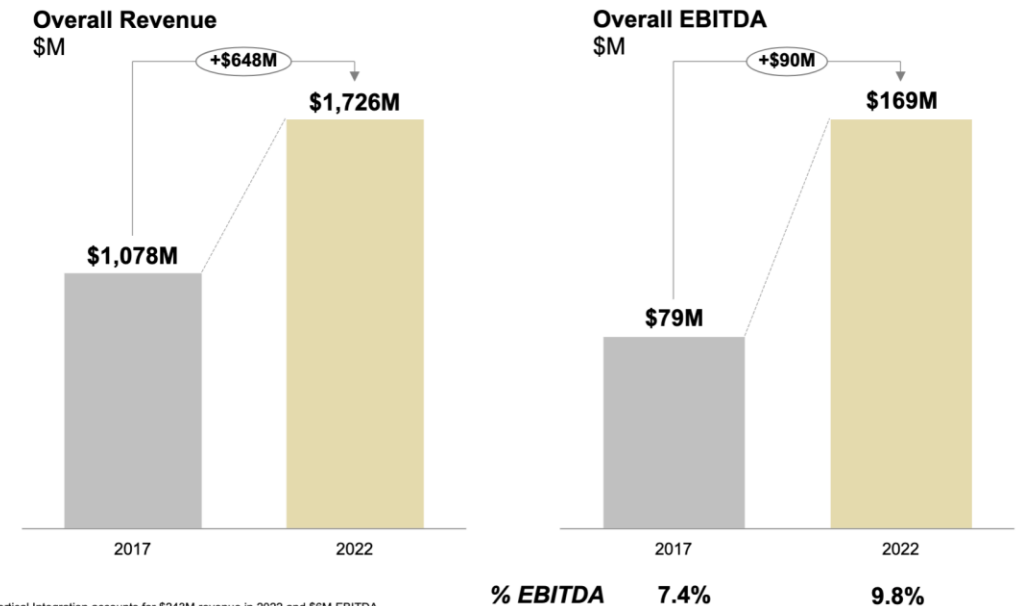
Revenue rises from \$1,078M to \$1,726M and EBITDA rises from \$79M to \$169M, showing strong projected growth between 2017 and 2022.

Insert table if needed.

{table}.

... and a step change in business performance for our investors

Project Fresh Projected Impact



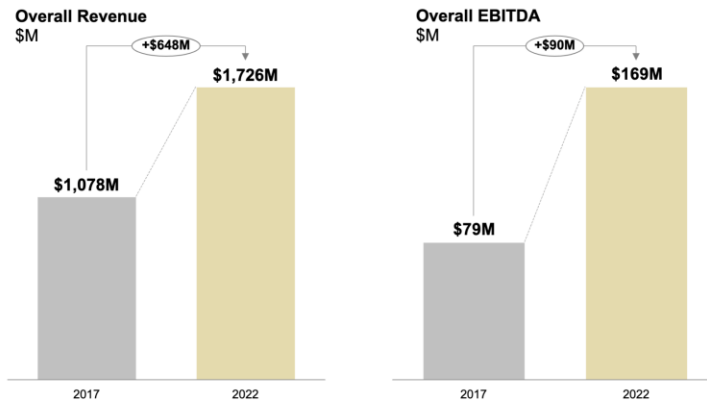
1. Vertical Integration accounts for \$243M revenue in 2022 and \$6M EBITDA

Presenting Detailed Data

If needed, adding a table to most graphs or data-related visuals can explain the data in detail.

... and a step change in business performance for our investors

Project Fresh Projected Impact

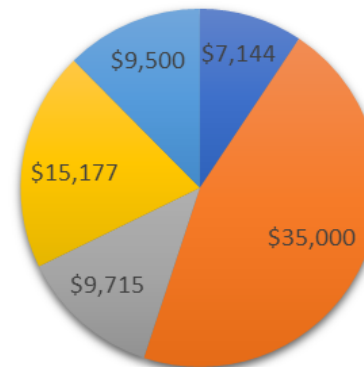


1. Vertical Integration accounts for \$243M revenue in 2022 and \$60M EBITDA

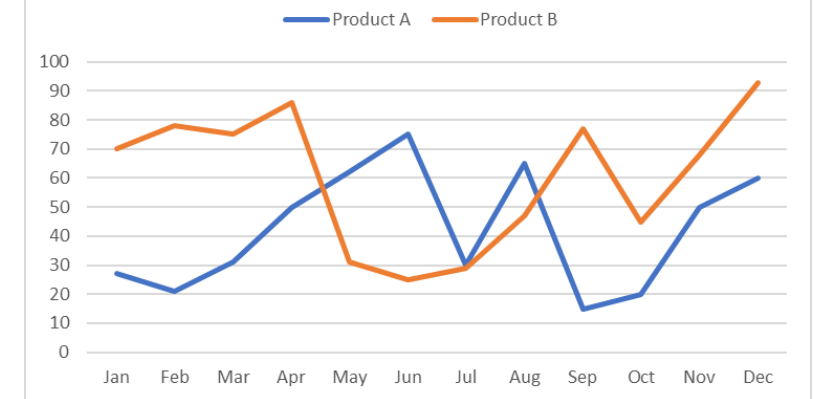
PROPRIETARY AND CONFIDENTIAL. For your exclusive and private use under license. Sharing electronically or otherwise is a violation of copyright and intellectual property rights.

Assets Distribution Across Investment Categories

■ Cash ■ U.S. Stocks ■ Non-U.S. Stocks ■ Bonds ■ Other



Monthly Product Sales



Diagrams & Infographics

Factors to consider:

Focus on how information flows, where it starts, the direction of the arrows, and the final result.

For complex diagrams

Group complex pieces of information into smaller, bite-sized sections so the listener does not get confused.

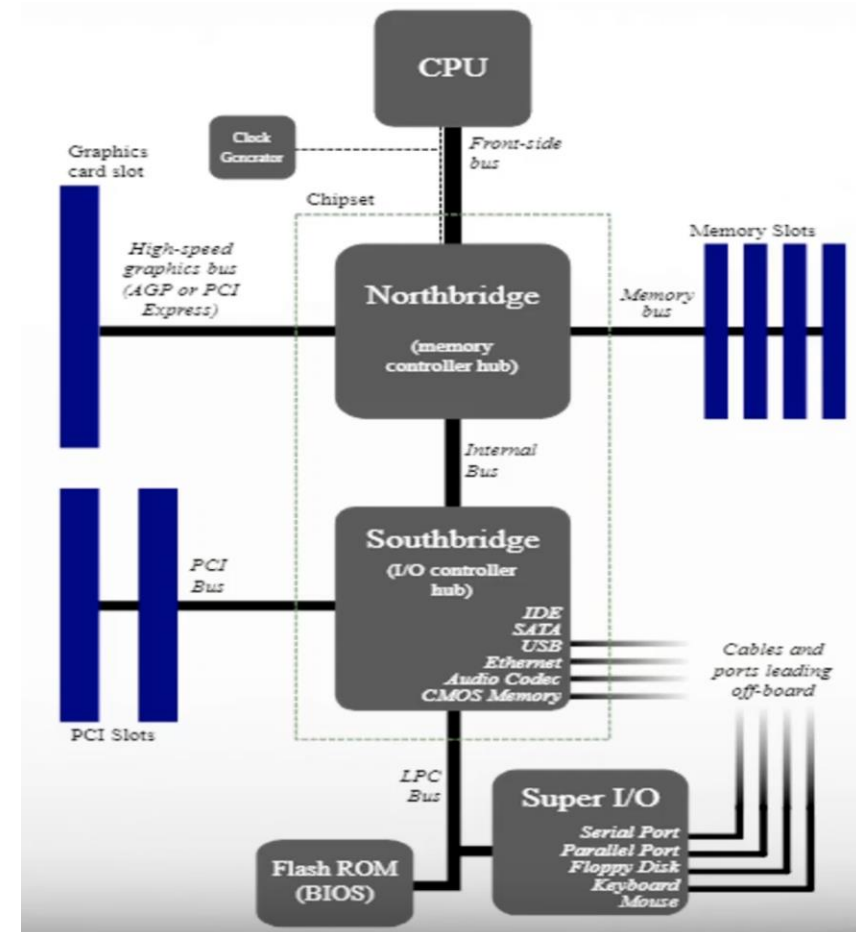


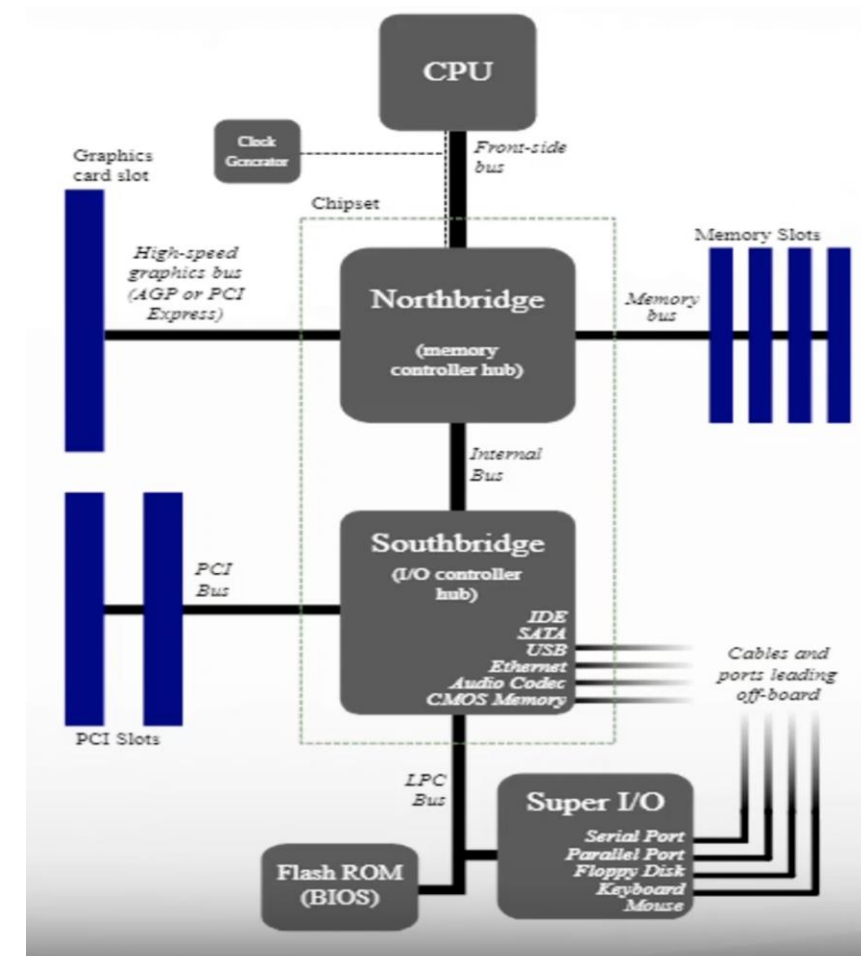
Diagram Writing Templates

Alt Text

{overall concept}. Major sections include {Section A}, {Section B}, and {Section C}. The process progresses from {starting} to {ending}.

Extended Description

Arrows, connectors, or labels indicate {relationships or sequence}.



If We Focus On Hardware Architecture

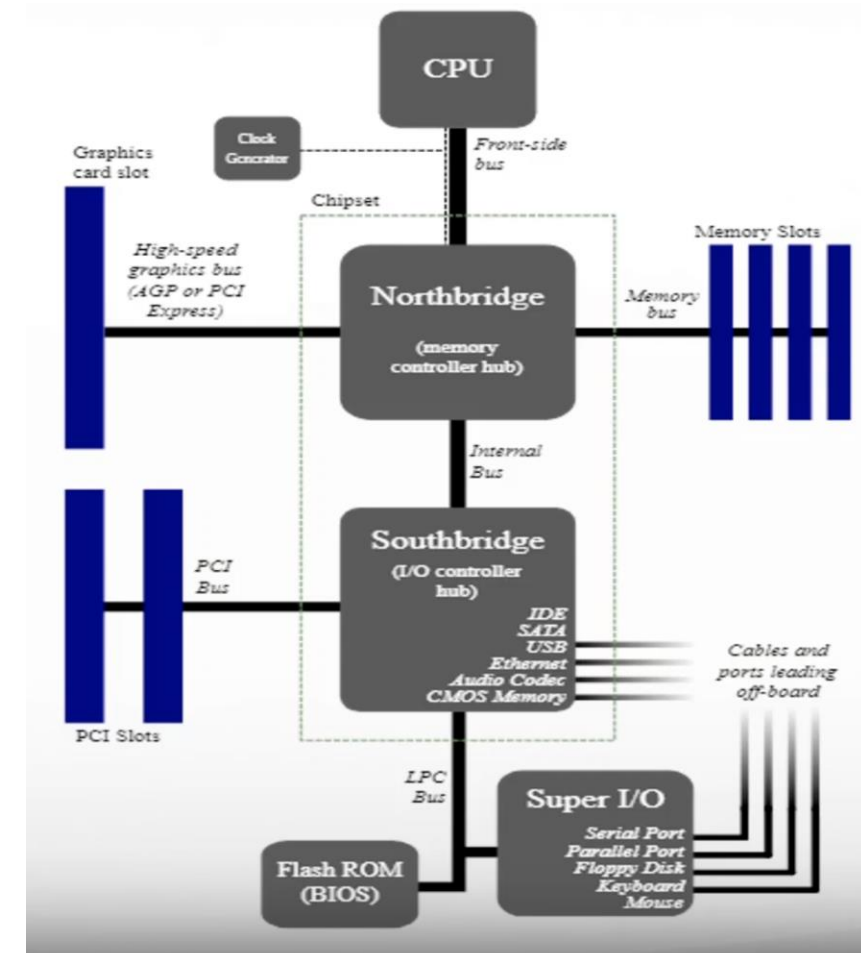
Alt Text

Motherboard architecture showing CPU connection to Northbridge, Southbridge, and peripheral slots.

Extended Description

CPU connects directly to the Northbridge chip via the front-side bus for fast data sharing.

Northbridge then manages the Graphics card slot and Memory slots. The Southbridge chip connects via an internal bus to handle PCI slots, BIOS, and ports for hard drives and USBs.



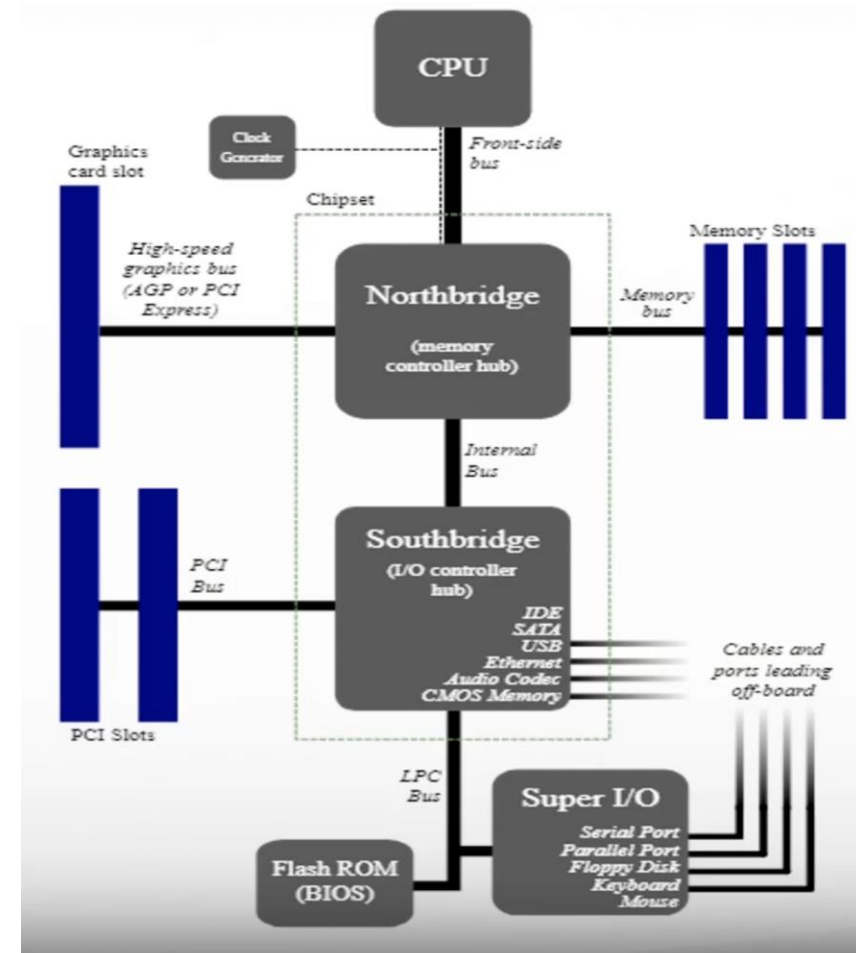
If We Focus On Computer Bus Design

Alt Text

Technical motherboard flowchart highlighting data buses such as the Front-side bus, Memory bus, PCI bus, and LPC bus.

Extended Description

It highlights specialized pathways including the Front-side bus for the CPU, the High-speed graphics bus, and the Memory bus leading to RAM slots.



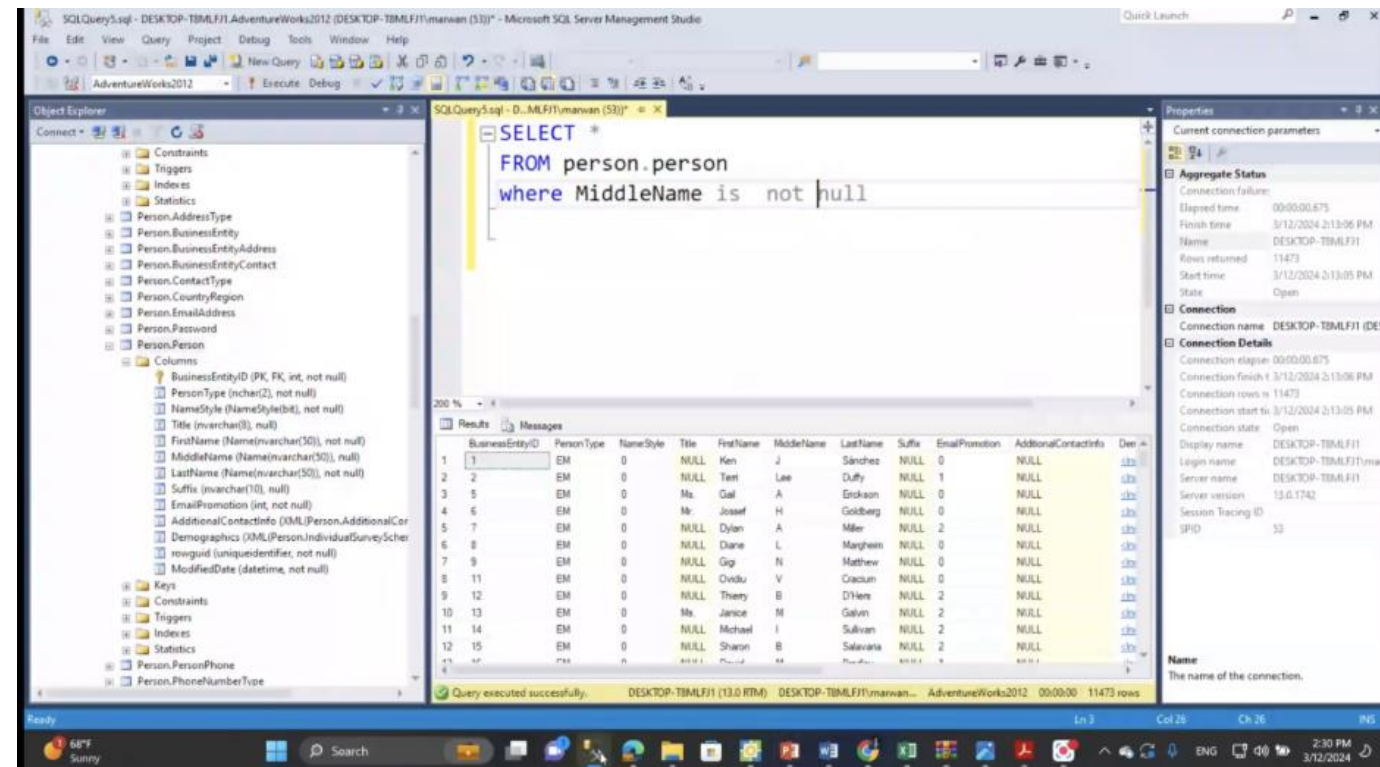
Software User Interface

Factors to Consider:

Focus on what the user needs to do on the screen. Describe the main menu layout and what buttons to click.

Working procedure is important

Skip unnecessary background details, such as desktop wallpapers or notifications that are not part of the lesson.



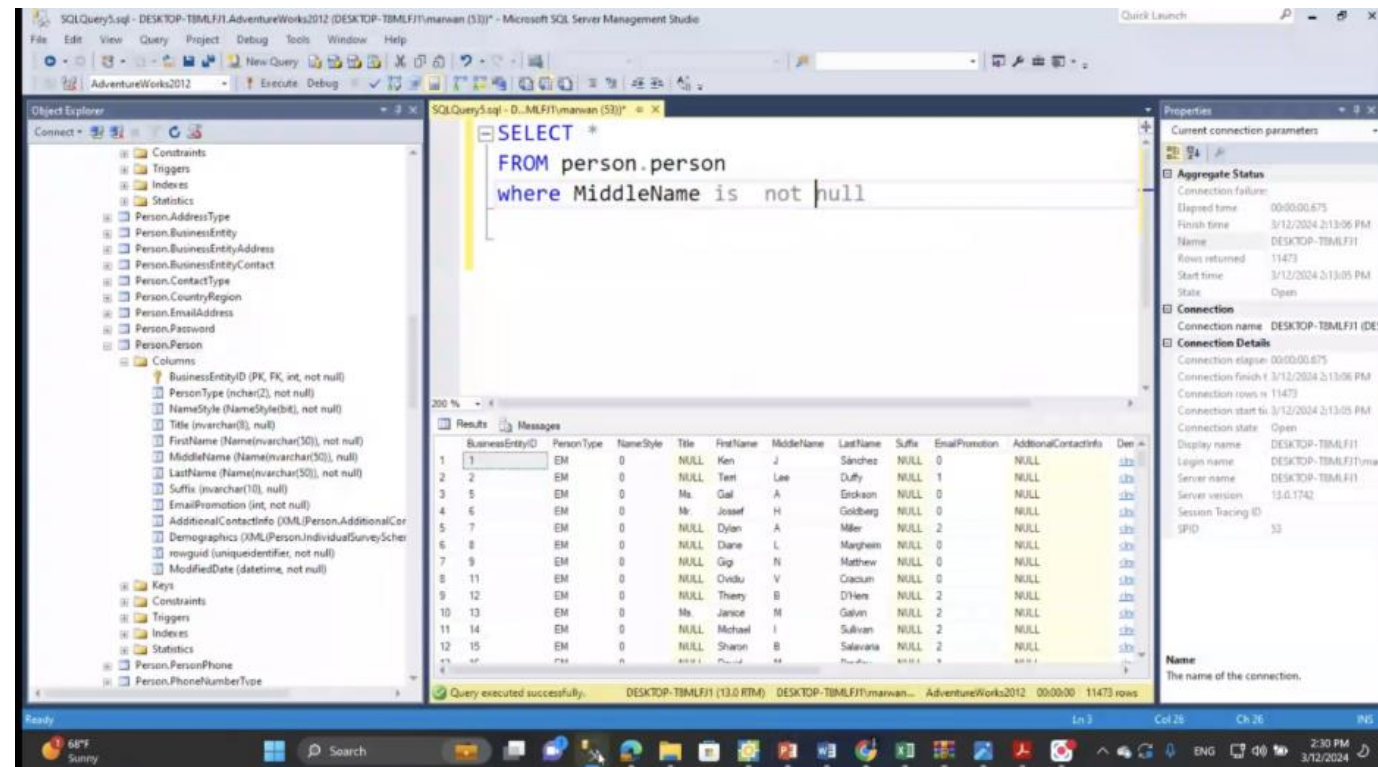
Software UI Writing Templates

Alt Text

{software name} interface is displayed. The layout includes {navigation/menu}, {main workspace}, and {sidebar or panels}.

Extended Description

The {active page or tab} is currently selected. Visible controls include {buttons, menus, icons, or input fields}. {Describe user interaction if applicable.}



If We Focus On User Interface Layout

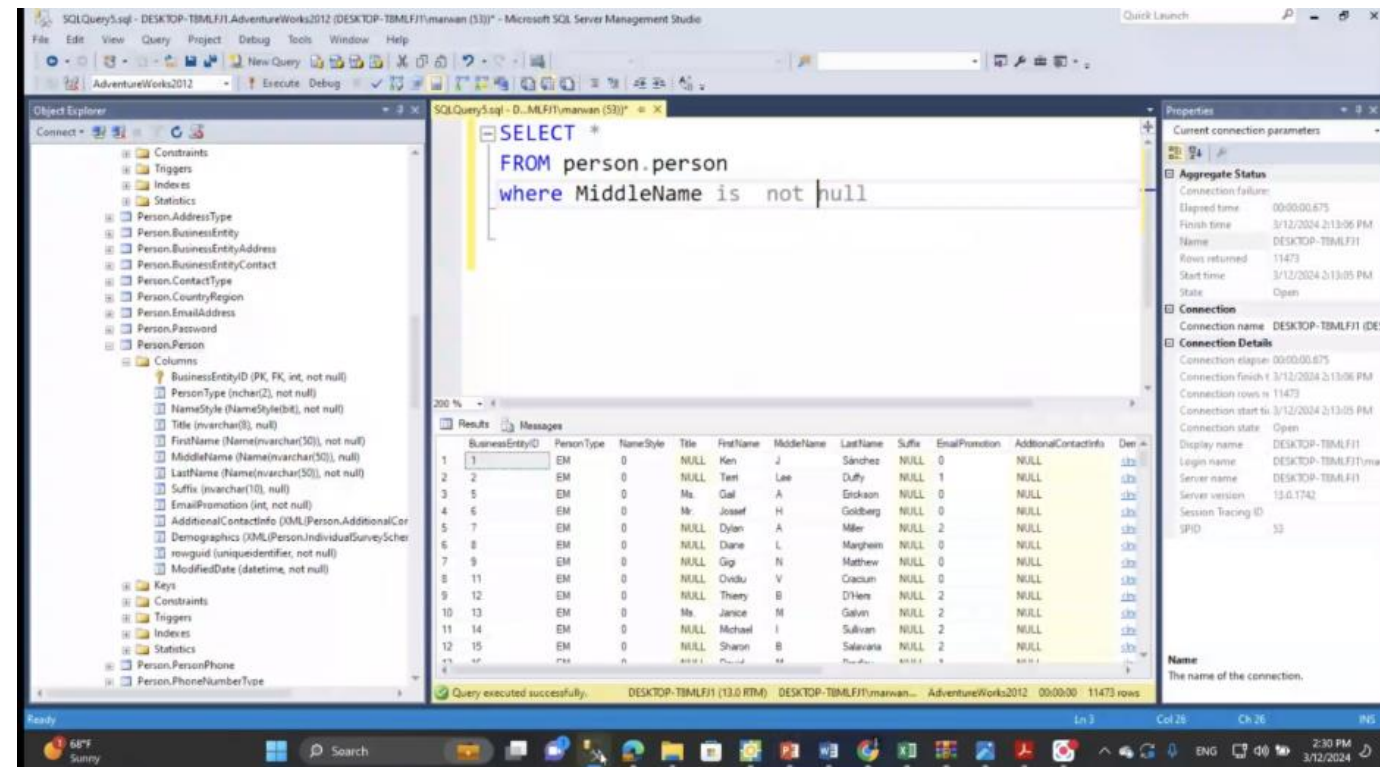
Alt Text

SQL Server Management Studio user interface showing a classic three-pane layout: Object Explorer tree, script editor, and Properties.

Extended Description

The Object Explorer tree shows technical details such as tables, columns, and data types.

The script editor is stacked on top of the data results panel, and the right column shows a dedicated Properties window that tracks current connection parameters.



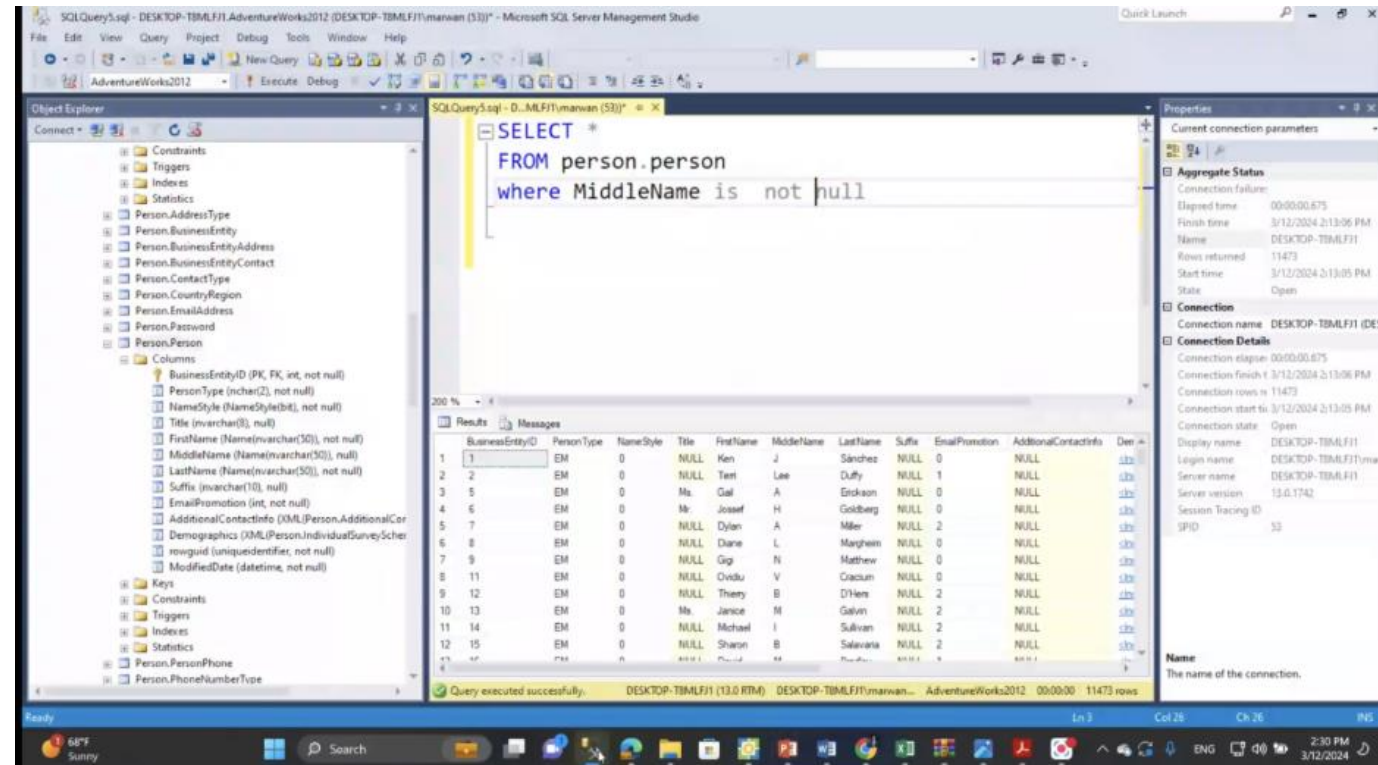
If We Focus On SQL Script

Alt Text

A SELECT query with a WHERE clause filtering non-null MiddleName values from the person.person table.

Extended Description

Query editor at the top displays the code: `SELECT * FROM person.person WHERE MiddleName IS NOT NULL`. The Results tab shows a spreadsheet-like grid with actual data columns, such as BusinessEntityID, FirstName, and MiddleName, that match this query.



Center for Learning Innovation Template

Around 15 types of visual templates for reference on the website.

Back to the equation

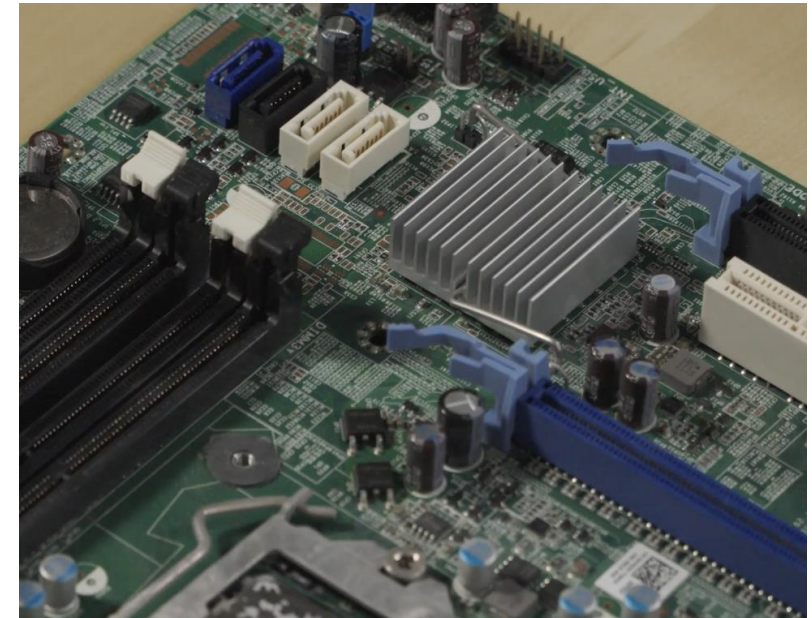
$$\begin{aligned}\text{Var}(\hat{\beta}) &= \text{Var}((\mathbf{X}^T \mathbf{X})^{-1} \mathbf{X}^T \mathbf{y}) \\ &= (\mathbf{X}^T \mathbf{X})^{-1} \mathbf{X}^T \text{Var}(\mathbf{y}) \mathbf{X} (\mathbf{X}^T \mathbf{X})^{-1}\end{aligned}$$

we can then write

$$\begin{aligned}\text{Var}(\hat{\beta}) &= \text{Var}((\mathbf{X}^T \mathbf{X})^{-1} \mathbf{X}^T \mathbf{y}) \\ &= (\mathbf{X}^T \mathbf{X})^{-1} \mathbf{X}^T \text{Var}(\mathbf{y}) \mathbf{X} (\mathbf{X}^T \mathbf{X})^{-1} \\ &= (\mathbf{X}^T \mathbf{X})^{-1} \mathbf{X}^T \sigma^2 \mathbf{I} \mathbf{X} (\mathbf{X}^T \mathbf{X})^{-1} \\ &= \sigma^2 (\mathbf{X}^T \mathbf{X})^{-1}\end{aligned}$$



'...OR YOU COULD JUST LOOK AT THIS.'



Thanks

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**Do We Need to Write a
Description From Scratch?**

NO!

AI 's Magic Touch

AI Prompt Suggestion

Analyze the uploaded image; it is for

[The learning objective or how the image is being used.]

Create:

1. Alt text under 120 characters.
2. Extended description for [Prioritized information]

Writing requirements:

- Do not start with “image of” or “picture of”, unless it is necessary.
- Be concise and objective on [Any request]
- Do not add assumptions or academic interpretation

3rd Party Alt Text Generate Tool



imageprompt.org



[picsart](https://picsart.com)

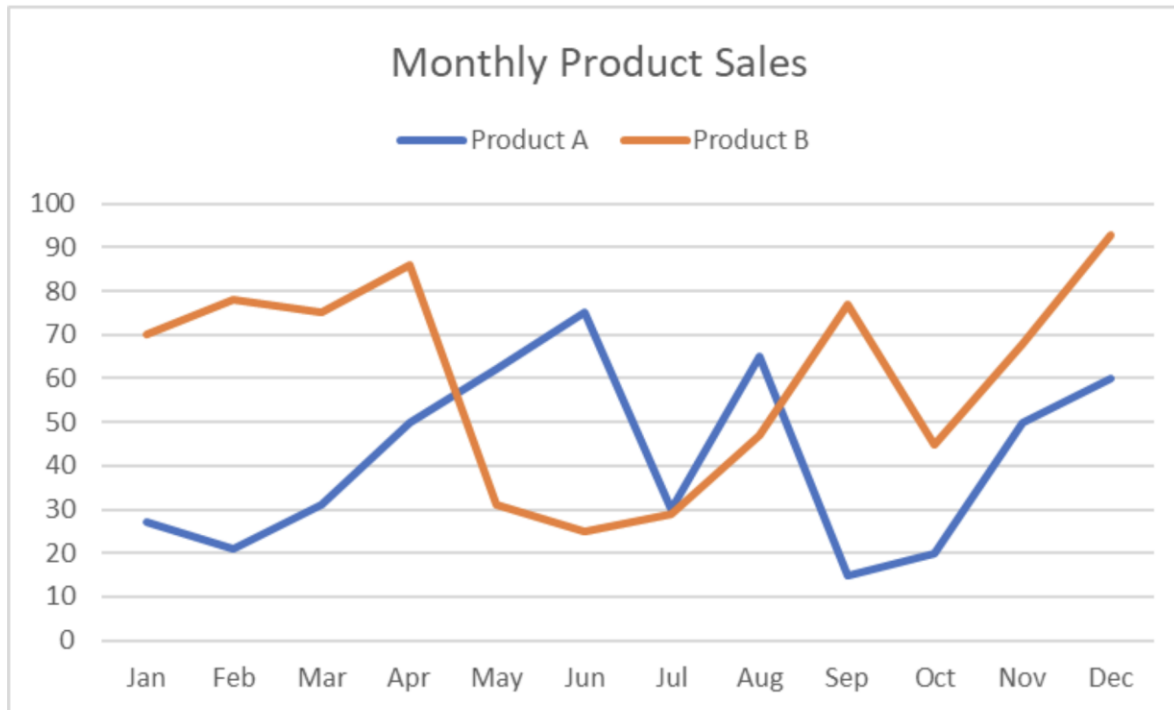


[image to prompt](https://image-to-prompt.com)

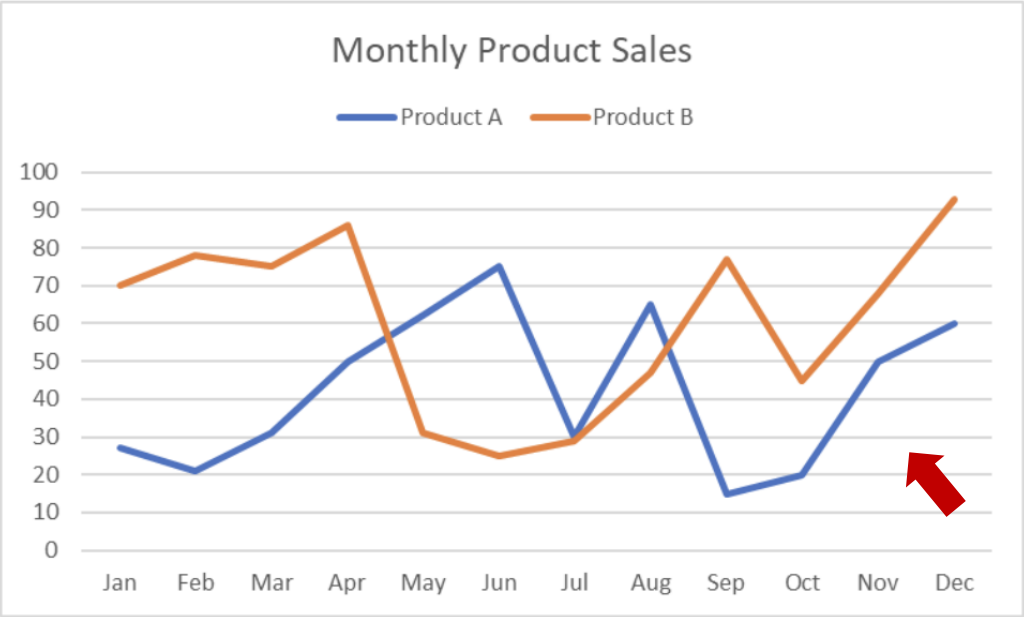
Check Alt Text Using Inspect

1. Right-click the image on the webpage and select **Inspect**.
2. In the developer tools panel, find the image's `<img>` tag in the HTML.
3. Look for the alt attribute inside the tag.
4. The text inside the quotation marks after `alt=` is the image's alt text.

Line Graph



Line Graph



p 531.81 × 23.99

◀ Previous

Next ▶

```

<div id="content" class="ic-Layout-contentMain" role="main">
  <div id="wiki_page_show">
    <div class="header-bar-outer-container">⋮</div>
    <div id="direct-share-mount-point"></div>
    <div class="show-content user_content clearfix enhanced" data-resource-type=
      "wiki_page.body" data-resource-id="171116" data-lti-page-content="true">
      ::before
      <h1 class="page-title">Watch: Module 1 Videos</h1>
      <div id="todo-date-mount-point"></div>
      <h2>⋮</h2>
      <hr style="width: 100%; height: 2px; text-align: left; margin: 0px auto; c
        olor: rgb(204, 0, 0); background-color: rgb(204, 0, 0); border-width: medi
        um; border-style: none; border-color: currentcolor;">
      <p>
         == $0
        </p>
        <p>&nbsp;</p>
        <p>&nbsp;</p>
        <p>&nbsp;</p>
        <div id="assign-to-mount-point"></div>
        <div id="choose-editor-mount-point"></div>
        ::after
      </div>
    </div>
    <div id="module_navigation_target">⋮</div>
  </div>
  <div id="right-side-wrapper" class="ic-app-main-content__secondary">⋮</div>
</div>

```

Resources

Guidelines



Galvin Library: [Alt Text & Image Description Guide](#)



Harvard: [Write helpful Alt Text to describe images](#)



Texas Tech: [Accessibility Digital Accessibility Guides](#)



UIUC : [Visual Description Tutorial](#)

Center for Learning Innovation



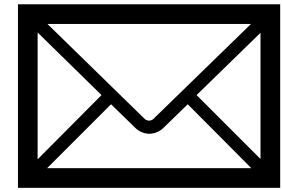
CLI Template

Around 15 types of visual templates for reference on the website.



Website

Canvas Accessibility Guidelines
More Training and Resources
Demo to add Alt text in different software



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Thanks