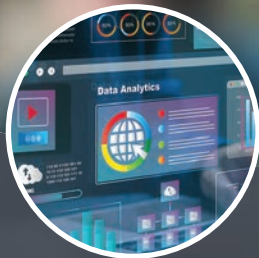




2024 WICPA ACCOUNTING TECHNOLOGY CONFERENCE

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Get ready to embrace innovation and stay ahead in the dynamic world of accounting, finance and tax

TUESDAY, DEC. 10 | WICPA OFFICE & WICPA CPE LIVESTREAM

2024 WICPA ACCOUNTING TECHNOLOGY CONFERENCE

MATERIALS AT A GLANCE

The following materials are from the morning sessions of the 2024 WICPA Accounting Technology Conference held on Tuesday, Dec. 10, including:

- AI Revolution: Unleashing Opportunities & Navigating the New Frontier
- ChatGPT Deep Dive
- Using ChatGPT With Excel

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A person is working at a desk. In the foreground, there is a laptop, a calculator, and a pair of glasses. In the background, a person's hands are visible, one holding a pen and the other holding a piece of paper. The scene is brightly lit, suggesting a professional office environment.

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Ensure a healthy business climate for CPAs and the clients you serve.



Strengthen the voice and visibility of the WICPA and its members.



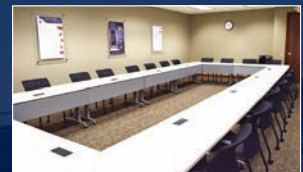
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8:10 – 9:10 a.m.

AI Revolution: Unleashing Opportunities & Navigating the New Frontier

John Higgins, CPA, CITP, *Strategic Technology Advisor,*
Higgins Advisory, LLC

AI Revolution: Unleashing Opportunities and Navigating the New Frontier



Set your browser to
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and Q & A

Presented By
John H. Higgins, CPA.CITP
Rochester, Michigan

Learning Goals



- Establish a foundational understanding of AI technology
- Identify opportunities for CPAs to leverage the power of AI
- Recognize the risks of AI and how to mitigate them

Set your browser to
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and Q & A

John H. Higgins, CPA.CITP

Strategic Technology Advisor



john@higginsadvisoryllc.com

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Nationally recognized thought leader, advisor, author and speaker on CPA technology

Strategic technology advisor to the profession w/ 35+ years of experience

Founded and sold two CPA technology advisory startups

Former National Mid-market Technology Partner - BDO

CPA Practice advisor Top 25 Thought Leader for the CPA profession

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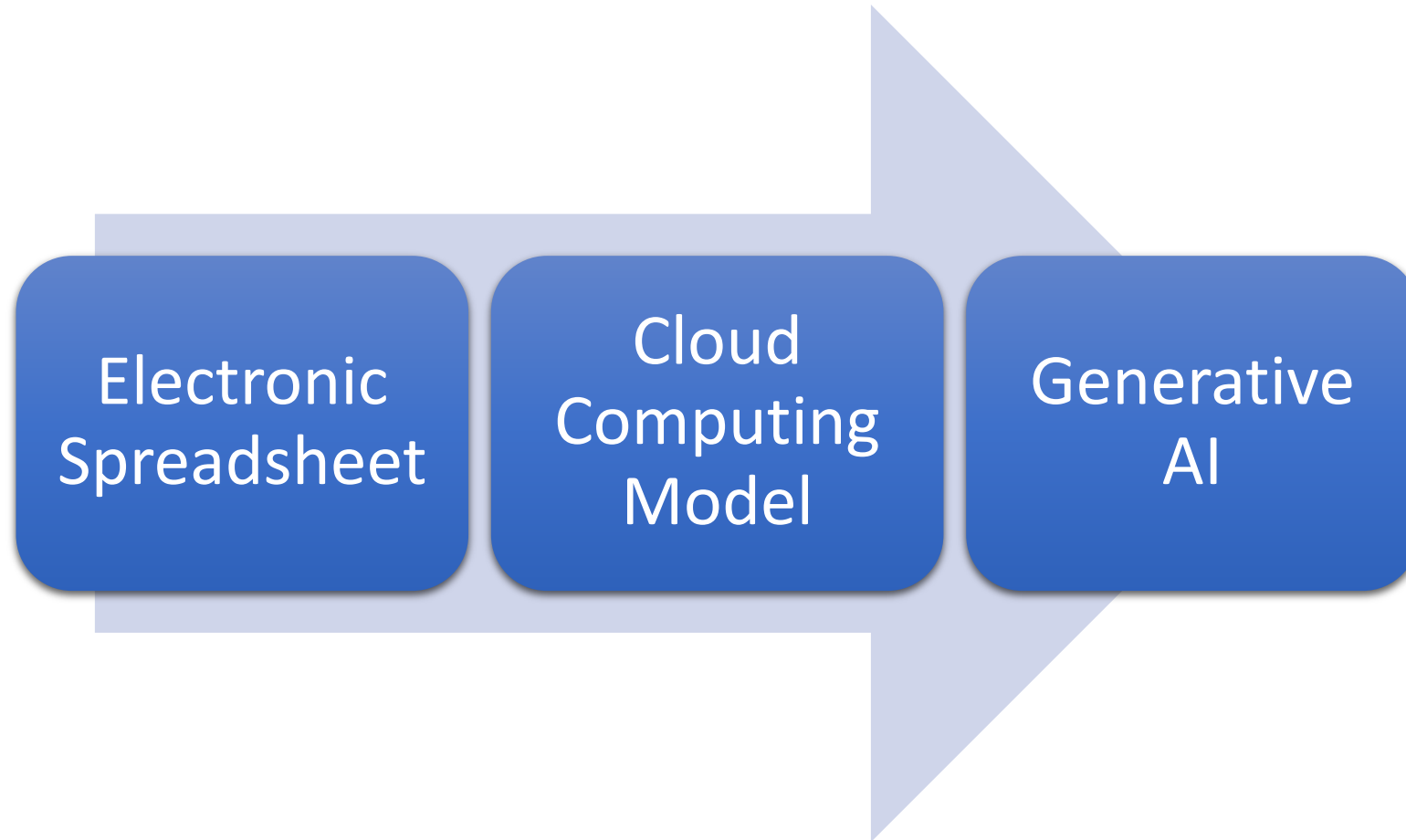
Past Chair of the Michigan Association of CPAs

Passionate advocate for the CPA profession!

Presentation Outline

- Why is this important?
- The state of AI technology today
- Executive level review of how it works
- Generative AI examples for CPAs and CFOs
- A word of caution
- Deploying AI strategically within your organization
- What is next for AI

The Big Three CPA Technology Revolutions



WHY IS THIS IMPORTANT?



“AI will probably most likely lead to the end of the world, but in the meantime, there'll be great companies.”

Sam Altman
CEO, OpenAI

“The most important thing to know about AI, it is the first technology in history that can make decisions by itself and can create new ideas by itself.”

Yuval Noah Harari
Best Selling Author - Sapiens

“Robots will be able to do everything better than us. I am not sure exactly what to do about this. This is really the scariest problem to me.”

Elon Musk

Founder, Tesla & SpaceX

“Artificial intelligence is like electricity; it has application everywhere”

Andrew Ng
Co-founder Google Brain



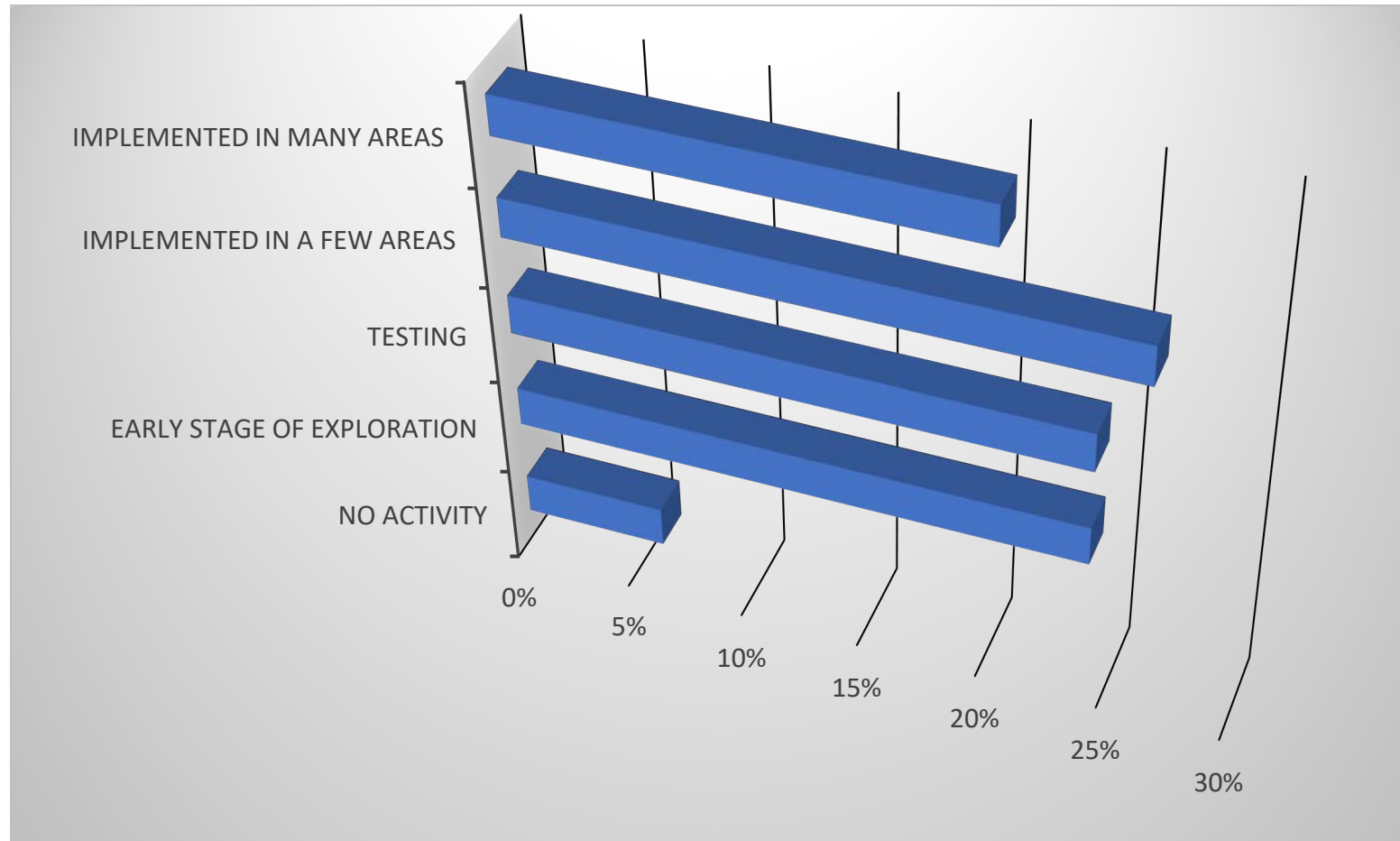
Generative AI for Everyone

Corporate Adoption of Generative AI

- 70% of companies surveyed say their companies have tested or implemented generative AI.
- 70% of CEOs surveyed worldwide said generative AI will significantly change the way their company creates, delivers and captures value.

Source: PwC 2024 Digital Trends in Operations Survey

Corporate Adoption of Generative AI



Source: PwC 2024
Digital Trends in
Operations Survey

Nvidia Stock Chart

NVIDIA Corp

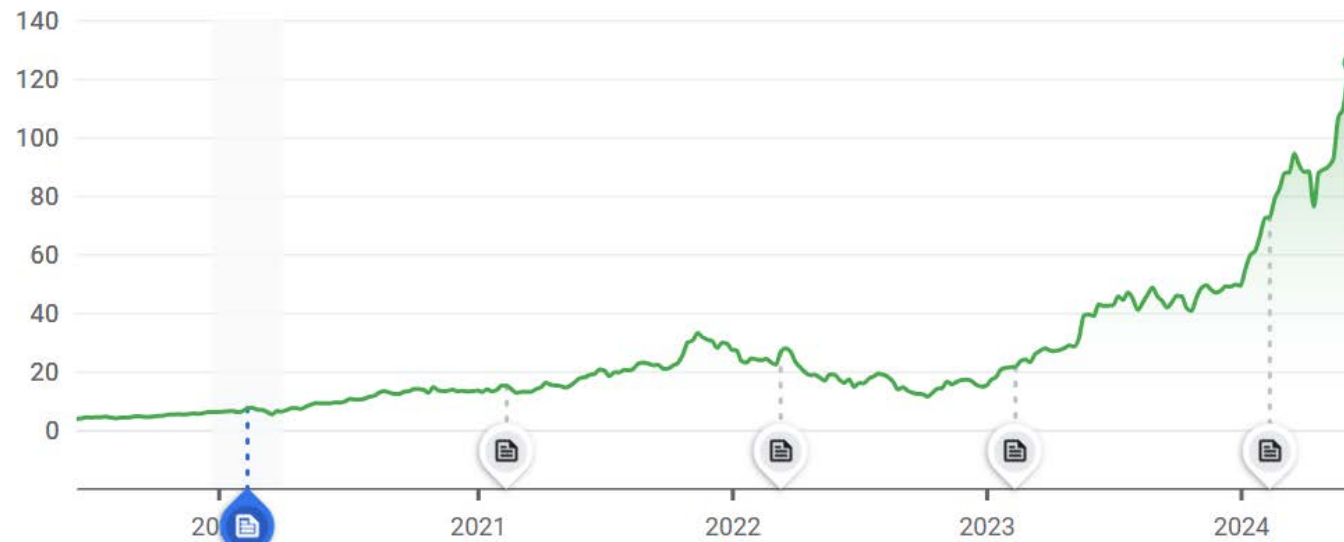
\$125.20 ↑ 3,358.56% +121.58 5Y

After Hours: **\$126.49** (↑1.03%) +1.29

Closed: Jun 12, 7:59:57 PM UTC-4 · USD · NASDAQ · Disclaimer

1D 5D 1M 6M YTD 1Y 5Y MAX

Key events



Apple Stock Chart

Apple Inc

\$213.07 ↑ 14.38% +26.79 1M

After Hours: **\$214.20** (↑ 0.53%) +1.13

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1D 5D 1M 6M YTD 1Y 5Y MAX

Key events >



Oracle Stock Chart

Oracle Corp

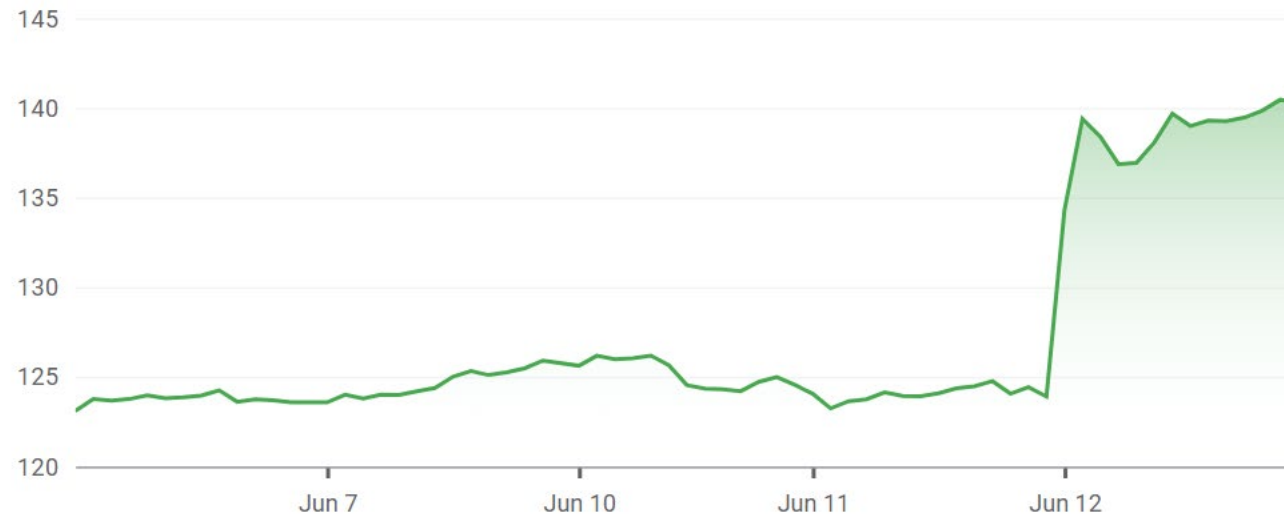
\$140.38 ↑ 14.06% +17.30 5D

After Hours: **\$141.07** (↑ 0.49%) +0.69

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1D 5D 1M 6M YTD 1Y 5Y MAX

Key events >



PwC Inks Mega Deal with OpenAI

- Largest user of ChatGPT w/ 100,000 users
- First reseller of ChatGPT
- 950 of top 1,000 clients engaging with generative AI
- PwC announced in 2023 a \$1 billion dollar commitment to generative AI training and tools over a three-year period

It is important!

THE STATE OF AI TECHNOLOGY TODAY



The Three Levels of AI

Narrow AI aka Weak AI	General AI aka Strong AI	Super AI aka Artificial Super Intelligence
<ul style="list-style-type: none">• Only form of AI that exists today• Limited to a defined task• Chatbots• ChatGPT	<ul style="list-style-type: none">• AGI – Artificial General Intelligence• Exists in theory only• Can accomplish new tasks without human training• Intellectually on par with humans• Current predictions are around 2030	<ul style="list-style-type: none">• Exists in theory only• Think / reason / learn / make judgements• Cognitive abilities surpassing human beings• Understand human feelings and feel emotions• Develop own beliefs and desires• No consensus prediction on arrival timeline

Current Day Examples

- [Amelia](#)
- [ChatGPT](#)
- [HeyGen](#)
- [Figure 01](#)
- [Neuralink](#)

EXECUTIVE LEVEL REVIEW OF HOW IT WORKS



Live Content Slide

When playing as a slideshow, this slide will display live content

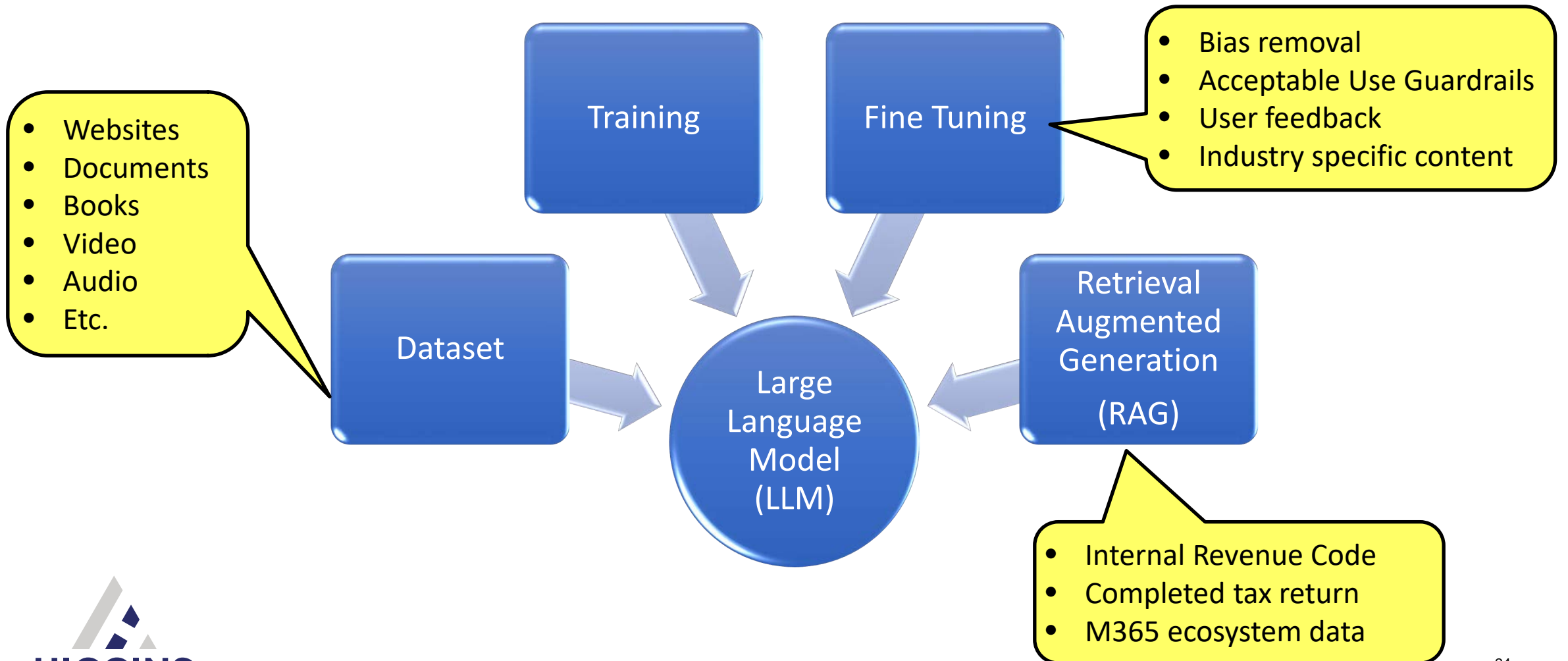
Poll: What is your experience with generative AI, e.g. ChatGPT, Google Gemini, etc.?

A Simple Generative AI demo

- ***Prompt:*** What is AGI?
- ***Response:*** AGI stands for Artificial General Intelligence.
- ***Prompt:*** In the context of income taxes.
- ***Response:*** In the context of *income taxes*, AGI refers to *Adjusted Gross Income*.



Building Large Language Models



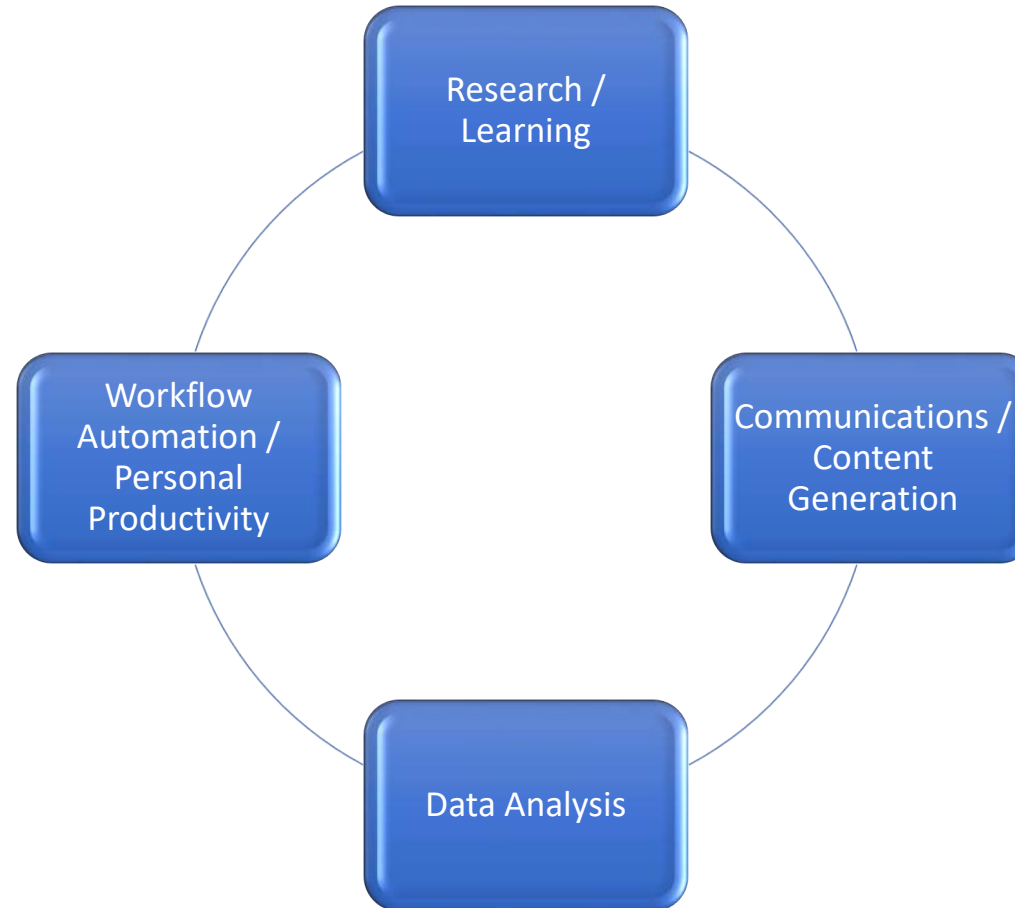
Popular Generative AI Apps

- [ChatGPT \(OpenAI\)](#)
- [Gemini \(Google\)](#)
- [Llama \(Meta\)](#)
- [Copilot \(Microsoft\)](#)
- [Claude \(Anthropic\)](#)
- [Perplexity](#)
- [xAI \(Elon Musk\)](#)

GENERATIVE AI EXAMPLES FOR CPAs & CFOs



ChatGPT Applications for CPAs



Ten Generative AI Productivity Boosters for CPAs & CFOs

- Jump start writing tasks
- Brainstorming
- Recap / document meetings
- Analyze / summarize documents
- Analyze / summarize spreadsheets
- Create Excel macros
- Staff training
- Create PowerPoint presentations
- Supplement client advisory services
- Improve written communications

Research Example – Cash Control Policy

- ✓ Recommend policies for maintaining control over cash in a small business.
- ✓ Regenerate at the 7th grade level with specific instructions.



View results in ChatGPT

AI Agents – The Next AI Frontier

- Autonomously perform tasks or solve problems
- Can learn, analyze and make decisions
- Use to automate repetitive or complex tasks



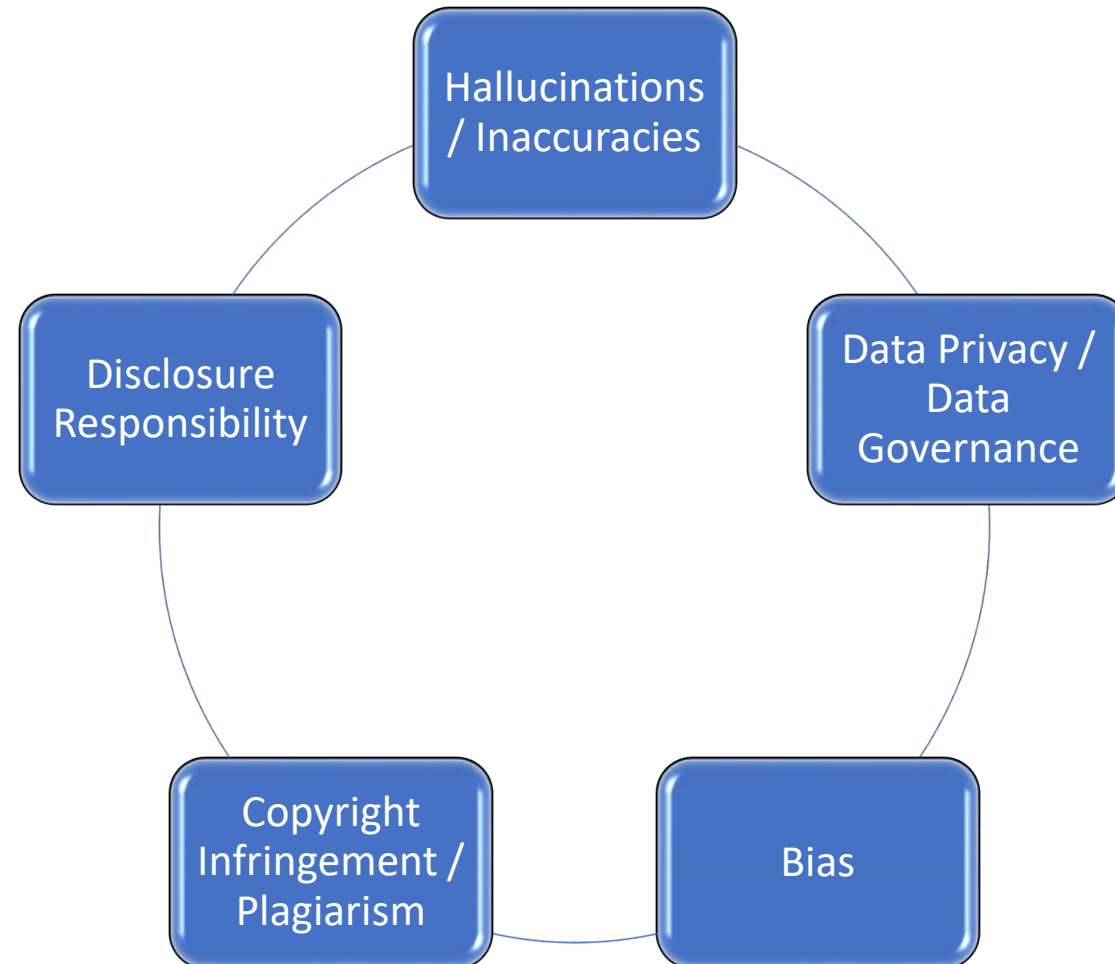
AI Agent Applications

- Monitor transactions and flag anomalies
- Review contracts for key terms
- Reconcile bank statements to ledgers
- Categorize credit card expenses
- Update tax rates and rules and apply to client data

A WORD OF CAUTION



Issues to Beware of With Generative AI



Tips for Safe Usage of AI

- Establish an AI usage policy **w/ education**
- Verify generated output commensurate with reliance
- Anonymize personal & confidential data
- Review output for biases

DEPLOYING AI STRATEGICALLY WITHIN YOUR ORGANIZATION



Building Your AI Strategy

Form an AI strategy team

Develop an internal AI knowledge base

Identify and execute specific and manageable AI initiatives

Establish an AI usage policy

Educate your staff

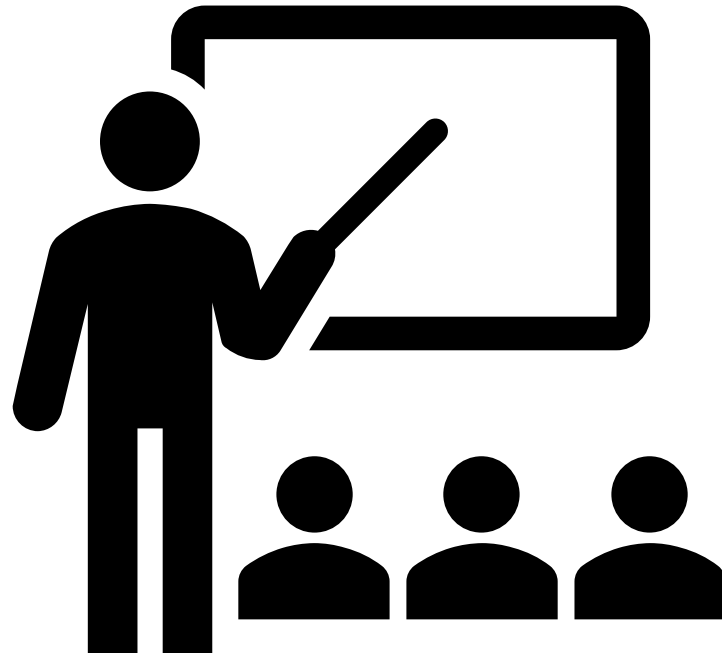
WHAT'S NEXT FOR AI



What is next for AI?

- Stargate from OpenAI & Microsoft - \$100 billion supercomputer
- Agents – Execute specific actions
- Proliferation of private LLMs / SLMs
- Humanoid robots

WRAP-UP



In Summary

- ChatGPT (generative AI) ignited a watershed transformation in information processing
- There is an abundance of applications to leverage the power of generative AI in accounting, auditing and tax services
- We are very early in this transformation and the transformation will happen at an unprecedented pace

Thank you!!!

Let's connect on LinkedIn →



9:20 – 10:40 a.m.

ChatGPT Deep Dive

John Higgins, CPA, CITP, Strategic Technology Advisor,
Higgins Advisory, LLC

ChatGPT Deep Dive



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Presented By
John H. Higgins, CPA.CITP
Rochester, Michigan



Learning Goals

- Understand the origins of generative AI
- Learn how to use the power of ChatGPT
- Recognize practical ChatGPT applications for CPAs & CFOs

Set your browser to

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For interactive polling and Q & A

Presentation Outline

- [Overview of Artificial Intelligence in Business Today](#)
- [Introduction to ChatGPT](#)
- [Using ChatGPT as Your AI Assistant](#)
- [Let's Brainstorm Your Own Ideas for ChatGPT Prompts](#)
- [A Word of Caution](#)
- [Get Ready for Microsoft Copilot](#)
- [In Summary](#)
- [Glossary - Generative AI Technology](#)

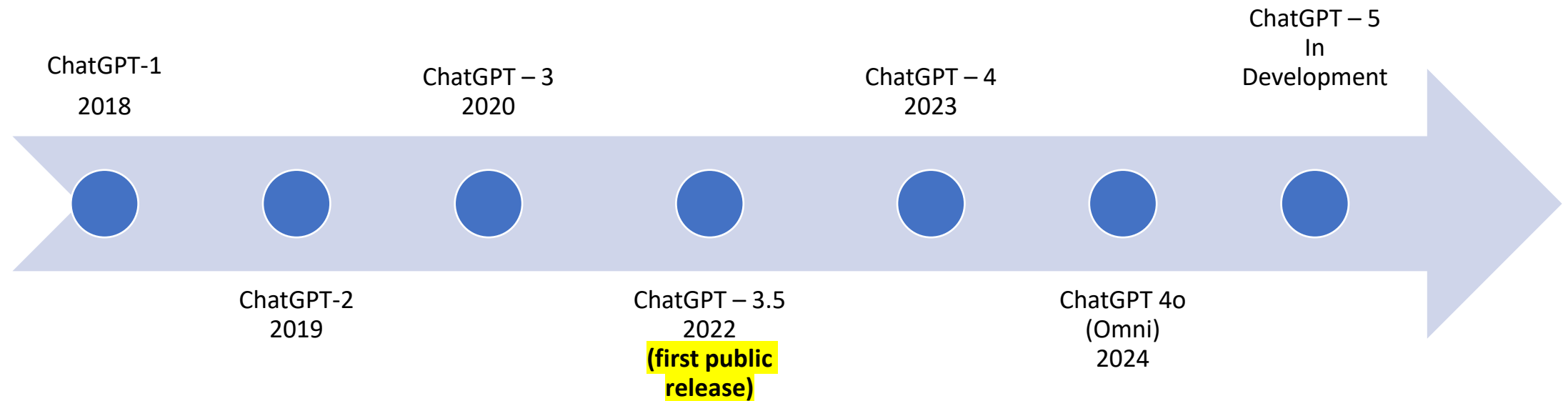
INTRODUCTION TO CHATGPT



What is ChatGPT?

- ChatGPT (Generative Pre-trained Transformer)
- Fastest growing app in history
 - Launched November 30, 2022
 - 100 million users within two months
 - Over 200 million currently active users
- Free and premium versions available
- Browser / Mobile / Desktop apps

History of ChatGPT Releases



Live Content Slide

When playing as a slideshow, this slide will display live content

Poll: What is your experience with ChatGPT?

ChatGPT Screenshot

GPTs

Chat History

Subscription upgrade

The screenshot shows the left sidebar of the ChatGPT interface. At the top, there is a search bar and a dropdown menu labeled 'ChatGPT 4o'. Below this, there are several GPTs listed: 'ChatGPT', 'Global Construct Pro', 'Diagrams: Show Me | ...', and 'Explore GPTs'. A section titled 'Yesterday' contains several chat titles, including 'U of M Financial Highlights', 'Financial Planner Website', 'Financial Planning Interview', 'Secure Act Key Points', and 'Estate Tax IRC Sections'. Below this is a section titled 'Previous 30 Days' with more chat titles like 'Bluetooth Connection Setup', 'Top 10 Endowment Balances', 'Bake Chocolate Treats!', 'Nvidia Ratios Analysis 2023 Q...', 'Product Margin Comparison Chart', 'Tax Minimization Strategies', 'Cost Transactions Summary: Cate...', 'Staff Accountant Recruitment: Por...', 'Construction Accounting Standard...', 'Construction Finance ChatGPT', 'Precio A...', 'Constru...', and 'Costing Report: Airport Expansion'. At the bottom of the sidebar, there is a button labeled 'Add Team workspace' with the subtext 'Collaborate on a Team plan'.

File Upload

Shareable link

Account Information

File Upload

Prompt

Generated output

New prompt entry



To calculate the Quick Ratio, Current Ratio, and Debt to Equity Ratio for each year presented in Nvidia's 2023 Annual Report, we'll use the relevant financial data extracted from the document.

Data Extracted:

1. **Current Assets for 2023 and 2022:** \$23,073 million and \$28,829 million respectively .
2. **Current Liabilities for 2023 and 2022:** \$6,563 million and \$4,335 million respectively .
3. **Total Liabilities for 2023 and 2022:** \$19,081 million and \$17,575 million respectively .
4. **Total Shareholders' Equity for 2023 and 2022:** \$22,101 million and \$26,612 million respectively .
5. **Inventories for 2023 and 2022:** \$5,159 million and \$2,605 million respectively .

Formulas:

- **Quick Ratio** = (Current Assets - Inventories) / Current Liabilities
- **Current Ratio** = Current Assets / Current Liabilities
- **Debt to Equity Ratio** = Total Liabilities / Total Shareholders' Equity

Calculations:

For 2023:

- Quick Ratio = $(\$23,073M - \$5,159M) / \$6,563M$
- Current Ratio = $\$23,073M / \$6,563M$
- Debt to Equity Ratio = $\$19,081M / \$22,101M$

Message ChatGPT

ChatGPT can make mistakes. Check important info.

ChatGPT Prompt Example

Explain the differences between an LLP, LLC and C corporation form of entity in a bulleted list, with pros and cons of each, for a small business entrepreneur



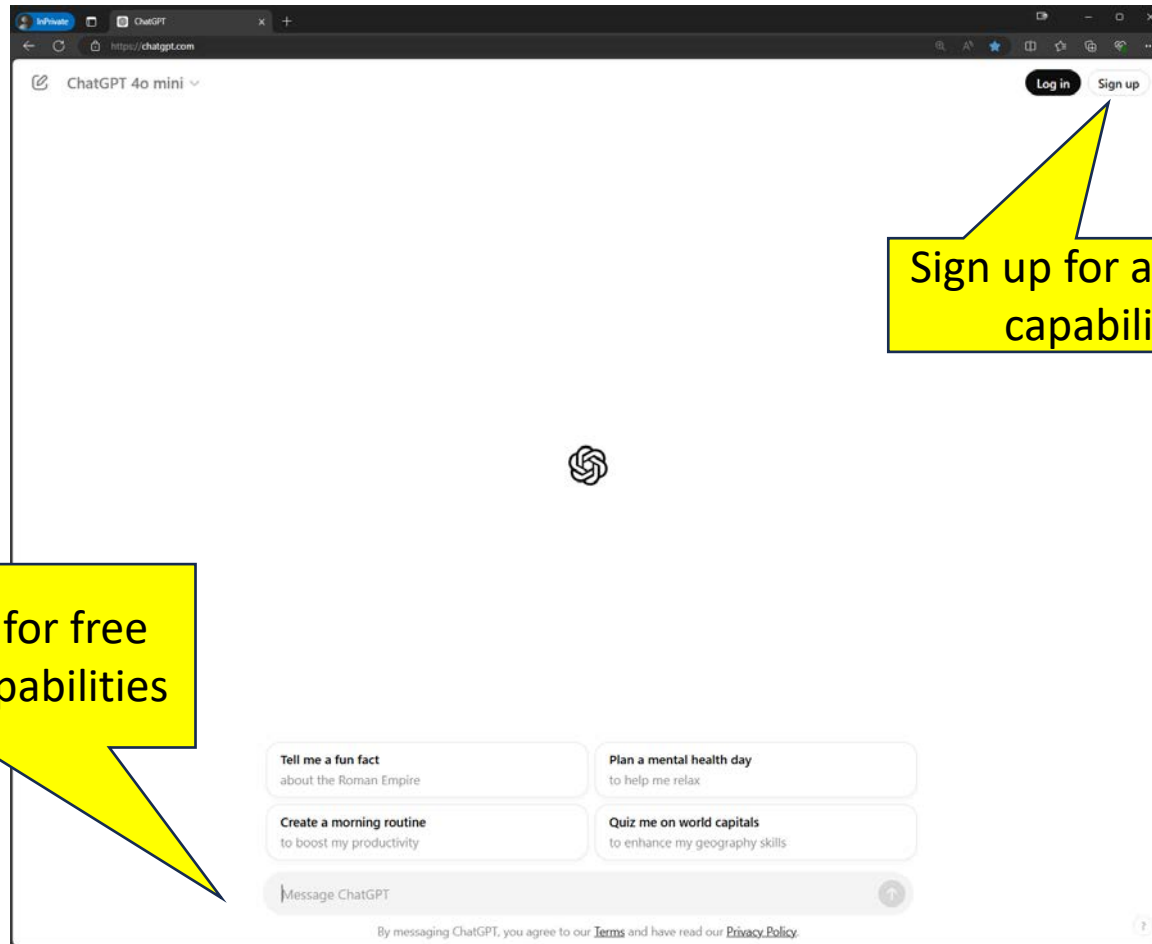
View results in ChatGPT

Getting Started with ChatGPT

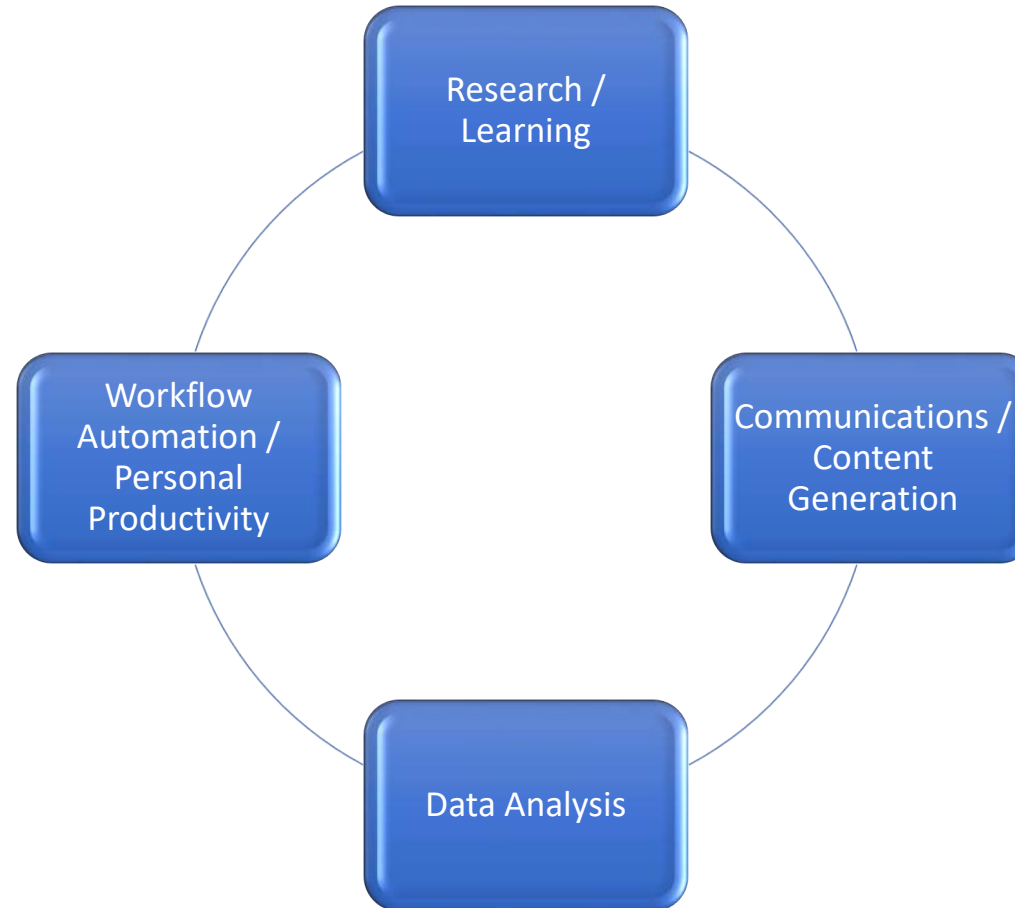
<https://chatgpt.com>

Chat instantly for free with limited capabilities

Sign up for advanced capabilities



ChatGPT Applications for CPAs



Prompt Example – Communication

Job Description

- Write an engaging job description for an online ad to recruit a staff accountant. This is a hybrid position located in Michigan. Our primary software applications are SAP, Salesforce and Concur.



View results in ChatGPT

Prompt Example – Workflow Automation

Excel Formulas & Formatting

- Create an Excel formula to calculate the monthly payment on a 30-year mortgage for \$400,000 at a 7% interest rate
- Generate a payment amortization schedule in tabular format

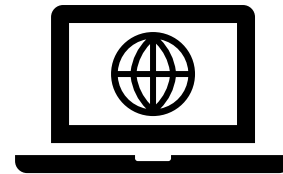


View results in ChatGPT

Prompt Example – Workflow Automation

Excel Macro

Create an excel macro to print the amortization schedule through the requested payment date



View results in ChatGPT

Prompt Example – Data Analysis

PDF File Content Analysis

- Calculate the quick ratio, current ratio and debt to equity ratio for each of the years presented in the report.
- Identify the senior executives in 2023 and their effective compensation.



View results in ChatGPT

ChatGPT Data Analysis Prompt Example

Analyze this Excel sales history file.

A	B	C	D	E	F	G	H	I	J	K	L	M	N	O	P
Cust#	Customer Name	Location	Region	Country	Group	Product Name	Product Category	Order date	Order Quantity	Unit Price	Total Product Cost	Sales Amount	Tax Amt	Freight	Size
35560	Kelli L Xu	110	Germany	Germany	Europe	Classic Vest, L	Vests	11/8/2011	1	63.5	23.749	63.5	5.08	1.5875	L
22760	Donald Chandra	120	United Kingdom	United Kingdom	Europe	Classic Vest, L	Vests	8/31/2011	1	63.5	23.749	63.5	5.08	1.5875	L
20560	Dale Shen	100	France	France	Europe	Classic Vest, L	Vests	3/17/2011	1	63.5	23.749	63.5	5.08	1.5875	L
44870	Preston Rodriguez	160	Northwest	United States	North America	Classic Vest, L	Vests	12/19/2010	1	63.5	23.749	63.5	5.08	1.5875	L
18630	Christian A Thomas	160	Northwest	United States	North America	Classic Vest, L	Vests	11/6/2010	1	63.5	23.749	63.5	5.08	1.5875	L
33150	Jose J Hall	130	Canada	Canada	North America	Classic Vest, L	Vests	10/22/2010	1	63.5	23.749	63.5	5.08	1.5875	L
21080	Darrell Goel	100	France	France	Europe	Classic Vest, M	Vests	12/5/2011	1	63.5	23.749	63.5	5.08	1.5875	M
43610	Nicole J Williams	160	Northwest	United States	North America	Classic Vest, M	Vests	11/7/2011	1	63.5	23.749	63.5	5.08	1.5875	M
24570	Erick E Gonzalez	110	Germany	Germany	Europe	Classic Vest, M	Vests	10/10/2011	1	63.5	23.749	63.5	5.08	1.5875	M
43910	Olivia K Cox	100	France	France	Europe	Classic Vest, M	Vests	4/8/2011	1	63.5	23.749	63.5	5.08	1.5875	M
40240	Marissa Price	130	Canada	Canada	North America	Classic Vest, M	Vests	3/24/2011	1	63.5	23.749	63.5	5.08	1.5875	M
52430	Tyler C Lewis	160	Northwest	United States	North America	Classic Vest, M	Vests	3/12/2011	1	63.5	23.749	63.5	5.08	1.5875	M
17460	Carrie D Ruiz	130	Canada	Canada	North America	Classic Vest, M	Vests	2/8/2011	1	63.5	23.749	63.5	5.08	1.5875	M
26260	Gary G Serrano	100	France	France	Europe	Classic Vest, M	Vests	1/15/2011	1	63.5	23.749	63.5	5.08	1.5875	M
26440	Gerald Alonso	110	Germany	Germany	Europe	Classic Vest, M	Vests	12/1/2010	1	63.5	23.749	63.5	5.08	1.5875	M
36020	Kenneth Raje	120	United Kingdom	United Kingdom	Europe	Classic Vest, M	Vests	11/27/2010	1	63.5	23.749	63.5	5.08	1.5875	M
37880	Levi J Suri	110	Germany	Germany	Europe	Classic Vest, M	Vests	8/12/2010	1	63.5	23.749	63.5	5.08	1.5875	M
12830	Andrew T Wedge	130	Canada	Canada	North America	Classic Vest, M	Vests	5/2/2010	1	63.5	23.749	63.5	5.08	1.5875	M



View results in ChatGPT

LET'S BRAINSTORM YOUR OWN IDEAS FOR CHATGPT PROMPTS!



Live Content Slide

When playing as a slideshow, this slide will display live content

Poll: What ideas do you have for ways you can utilize ChatGPT in your daily work?

Customize Your ChatGPT

Customize ChatGPT

Custom Instructions ⓘ

What would you like ChatGPT to know about you to provide better responses?

Founder and CEO of Higgins Advisory, LLC.
Nationally recognized as a technology thought leader for the CPA profession.
In depth expertise on Microsoft 365 ecosystem of apps.
In depth expertise on generative AI application for CPAs & CFOs

804/1500 Hide tips ⓘ

How would you like ChatGPT to respond?

Generate all responses at the 10th grade reading level.
Generate all responses in a professional tone.
Provide translation of any acronyms included in the generative text and input prompts

451/1500

GPT-4 Capabilities ⓘ

Browsing DALL-E Code

Enable for new chats

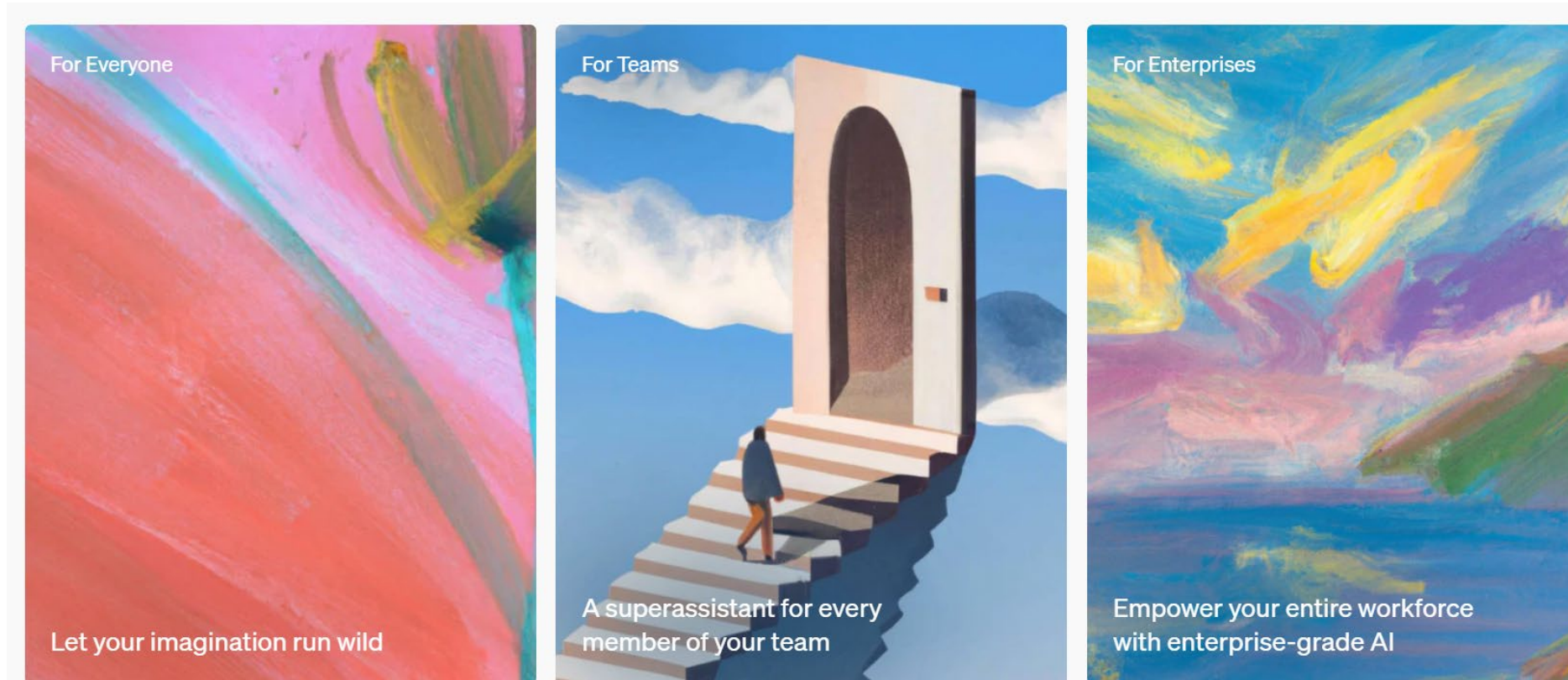
Cancel Save

Thought starters

- Where are you based?
- What do you do for work?
- What are your hobbies and interests?
- What subjects can you talk about for hours?
- What are some goals you have?

Plan a relaxing day

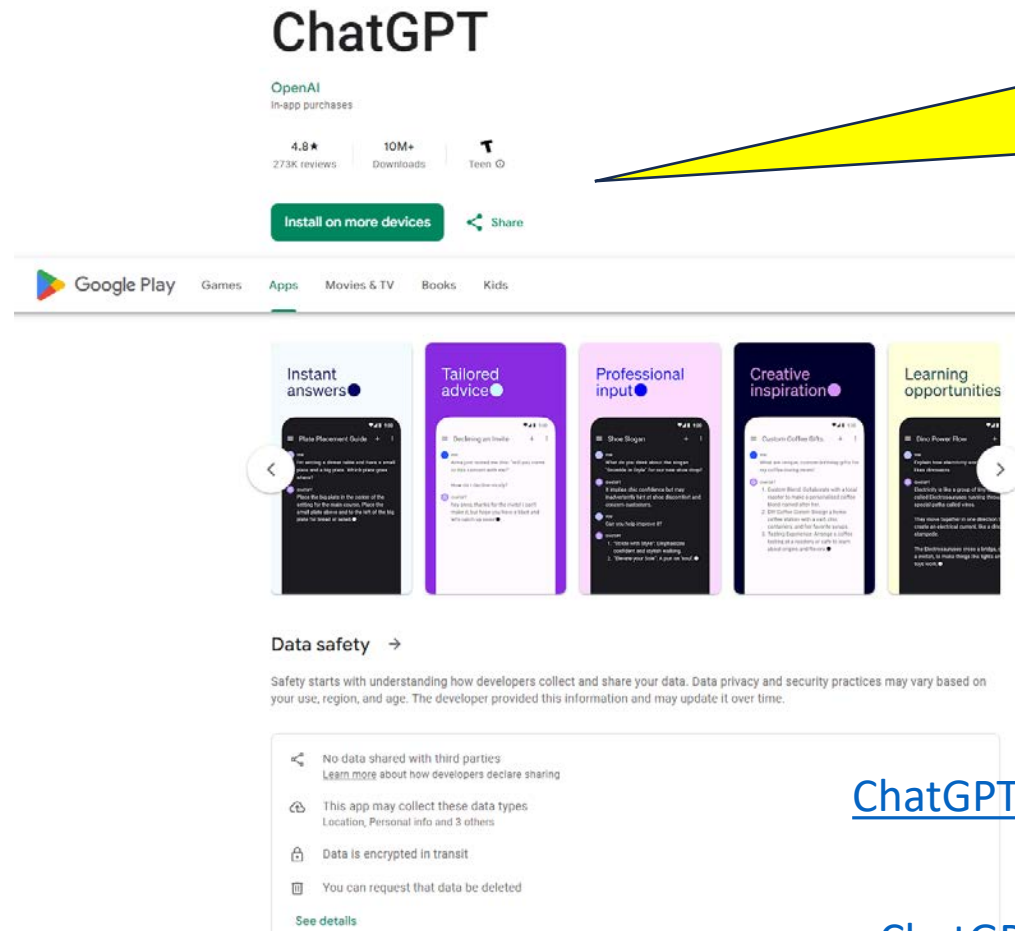
CHATGPT PRODUCT SUITE



ChatGPT Version Feature Comparison

	Free	Plus	Team	Enterprise
	Start now	Start now	Start now	Contact sales
Essentials				
Messages and interactions	Unlimited	Unlimited	Unlimited	Unlimited
Chat history	Unlimited	Unlimited	Unlimited	Unlimited
Access on web, iOS, Android	✓	✓	✓	✓

ChatGPT Mobile App

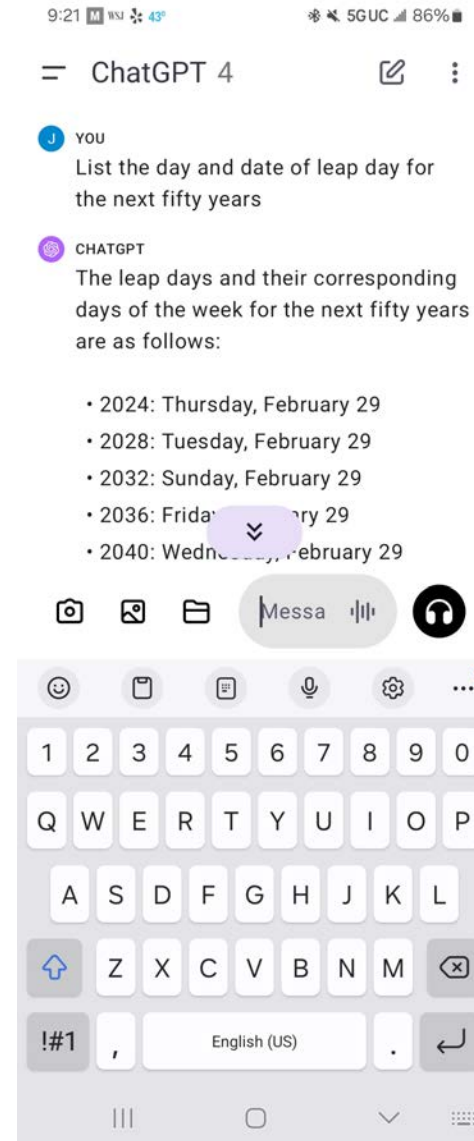


Be careful to select the authenticate ChatGPT app from OpenAI

[ChatGPT on the App Store \(apple.com\)](https://www.apple.com/chatgpt)

[ChatGPT - Apps on Google Play](https://play.google.com/store/apps/details?id=com.openai.chatgpt)

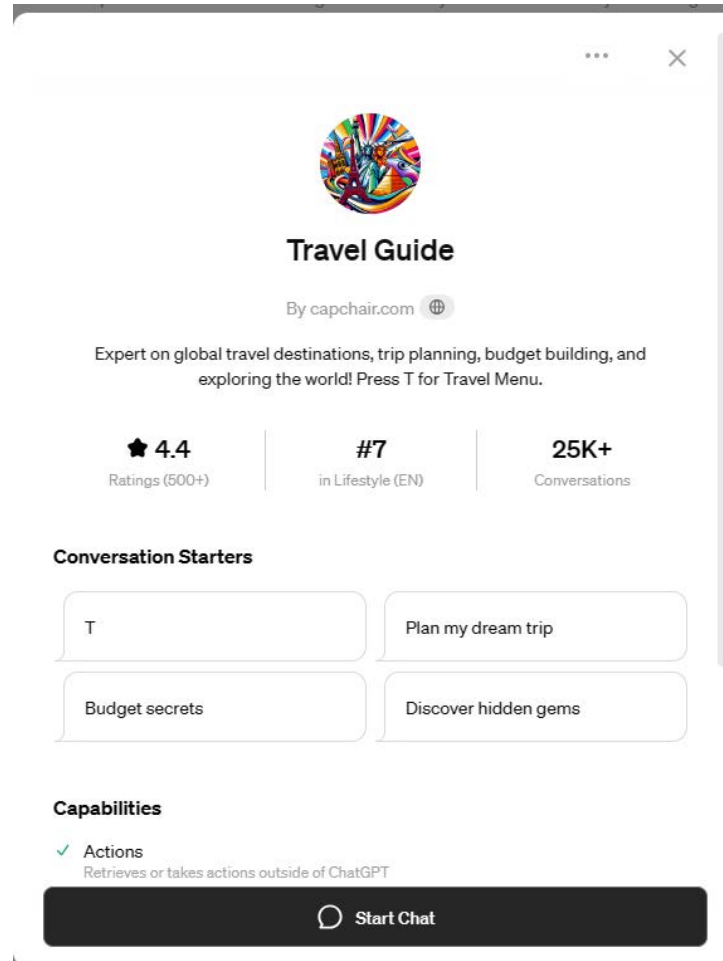
Mobile App Screenshot



GPTs – The Next Frontier

The screenshot displays the OpenAI GPTs interface. At the top right, there is a 'My GPTs' section with a '+ Create' button. The main heading is 'GPTs', followed by a subtitle: 'Discover and create custom versions of ChatGPT that combine instructions, extra knowledge, and any combination of skills.' Below this is a search bar labeled 'Search public GPTs'. A navigation bar includes 'Top Picks' (underlined), 'DALL-E', 'Writing', 'Productivity', 'Research & Analysis', 'Programming', 'Education', and 'Lifestyle'. The 'Featured' section is titled 'Curated top picks from this week' and contains four GPT cards: 'Escape the Haunt' (a red keyhole icon), 'The Designer's Mood Board' (a black circle with 'M^b'), 'Wolfram' (a red snowflake icon), and 'ElevenLabs Text To Speech' (a white circle with '||').

Travel Planning ChatGPT



The screenshot shows a ChatGPT profile for 'Travel Guide'. At the top right are three dots and a close button. The profile features a colorful circular avatar with a globe and travel icons. Below the avatar is the name 'Travel Guide' and the text 'By capchair.com' with a globe icon. A description reads: 'Expert on global travel destinations, trip planning, budget building, and exploring the world! Press T for Travel Menu.' Three statistics are displayed: a 4.4 star rating from 500+ users, a #7 ranking in the Lifestyle (EN) category, and 25K+ conversations. Under the heading 'Conversation Starters', there are four buttons: 'T', 'Plan my dream trip', 'Budget secrets', and 'Discover hidden gems'. The 'Capabilities' section shows a checkmark next to 'Actions' with the subtext 'Retrieves or takes actions outside of ChatGPT'. At the bottom is a dark 'Start Chat' button with a speech bubble icon.

Travel Planning ChatGPT Example



You

Plan a 7-day trip through the Canadian Rockies for two people with a \$3,500 budget. Include some travel by train and visiting many beautiful sites, both popular and lesser known.



Travel Guide

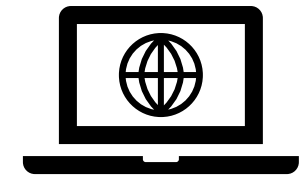
Embarking on a 7-day journey through the Canadian Rockies with a budget of \$3,500 for two people promises an adventure filled with breathtaking landscapes, serene lakes, and majestic mountains. Let's map out an itinerary that combines the romance of train travel with the thrill of exploring the Rockies' most stunning sites.

Day 1 & 2: Vancouver to Banff via Train

- **Start your adventure** in Vancouver, boarding the Rocky Mountaineer train early in the morning. This two-day journey to Banff is a scenic delight, offering panoramic views of the changing landscapes from coastal forests to the rugged peaks of the Rockies.
- **Budget:** Approximately \$1,500 for two in SilverLeaf Service, including meals. This takes a significant portion of the budget but promises an unforgettable experience.
- **Overnight:** Onboard accommodations are not available, so plan for a hotel stay in Kamloops (midway point) which can range around \$150 for a night.

Day 3: Banff National Park

- **Accommodation:** Check into a budget-friendly hotel or hostel in Banff. Expect to spend around \$150 per night.
- **Activities:** Explore Banff National Park. Visit the iconic Lake Louise and Moraine Lake. Enjoy hiking trails around the lakes for stunning views.
- **Dining:** Allocate \$70 for meals, enjoying local eateries.

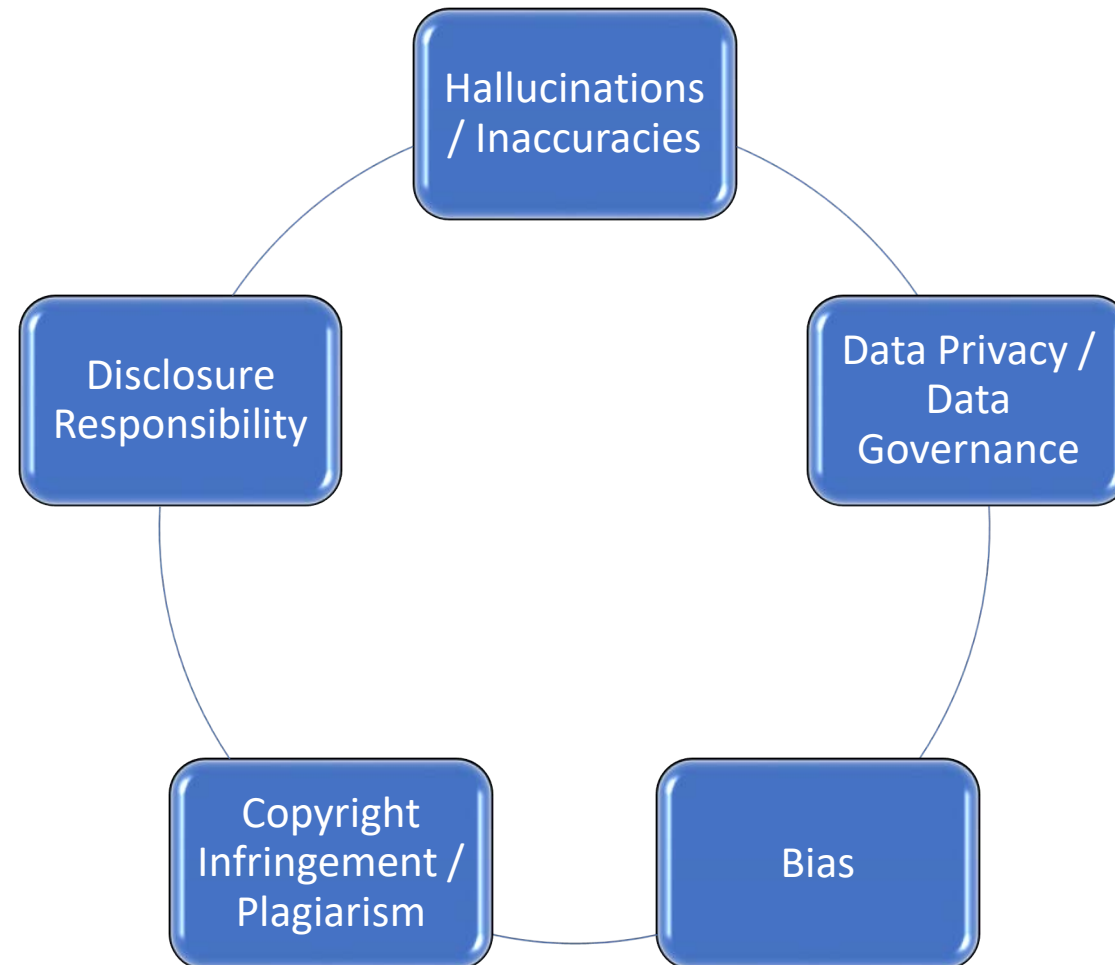


View results in ChatGPT

A WORD OF CAUTION



Issues to Beware of With Generative AI



Tips for Safe Usage of AI

- Establish an AI usage policy **w/ education**
- Verify generated output commensurate with reliance
- Anonymize personal & confidential data
- Review output for biases

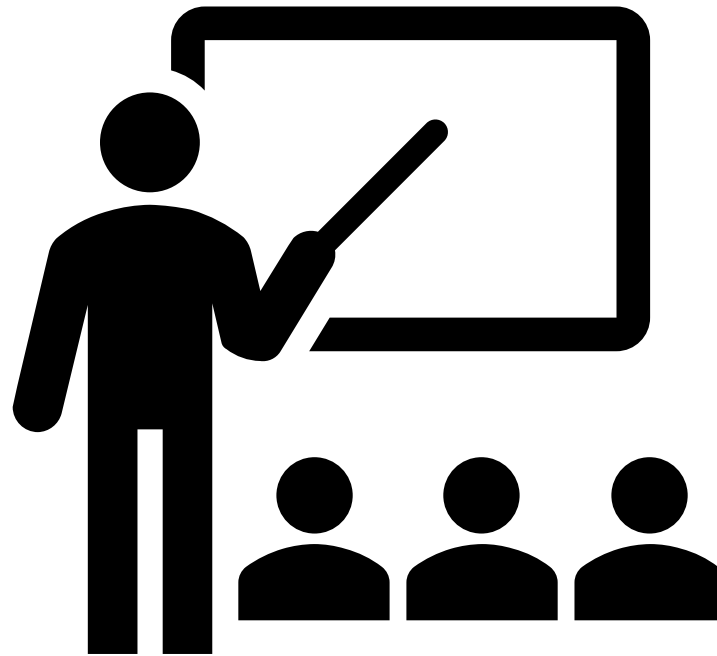
OpenAI Privacy and Usage Policy

- [OpenAI Privacy Policy](#)
- [OpenAI Usage Policy](#)



Sample ChatGPT usage policy for
an accounting practice

WRAP-UP



Live Content Slide

When playing as a slideshow, this slide will display live content

Poll: What do you think about ChatGPT?

In Summary

- You now have a solid baseline understanding of generative AI and ChatGPT
- Take advantage of what you have learned today and apply it to your daily tasks
- If you are going to use ChatGPT, invest in the premium version
- We are at the infancy of this technology

Questions ?



john@higginsadvisoryllc.com

Thank you!!!

Let's connect on LinkedIn →



10:55 a.m. – 12:10 p.m.

Using ChatGPT With Excel

Bryan Smith, CPA, CITP, CISA, *Owner, DataSmith Pro, LLC*



**Wisconsin Institute of
Certified Public Accountants**

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Using ChatGPT with Excel

Developed by Bryan L. Smith, CPA.CITP, CISA



Bryan L. Smith, CPA.CITP, CISA

- Owner DataSmithPro, LLC
- Co-founder of CPA Crossings, LLC
- Strategic technology advisor to CPAs w/ 40+ years of experience
- Nationally recognized author and presenter on CPA technology
- Extensive knowledge and experience in proper Excel design techniques as well as helping CPAs build spreadsheets that are accurate
- As a Certified Information Systems Auditor (CISA), spent a considerable amount of time auditing and validating thousands of Excel spreadsheets
- Developed various data analysis and Microsoft Power BI courses and has worked with multiple organizations to train and coach staff on proper data analysis techniques
- Masters of Science in Information Assurance (MSIA)

Go to
<https://openai.com/chatgpt>
and setup a free account

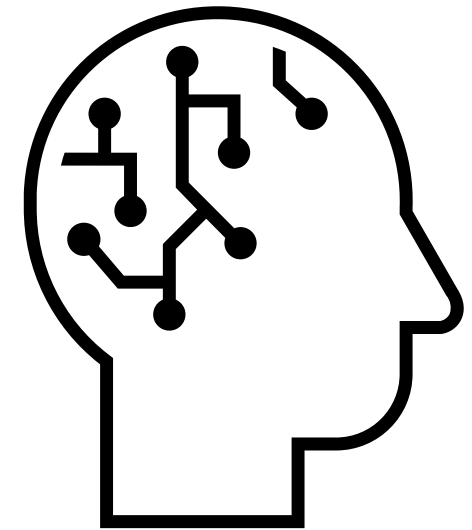


Presentation Outline

- [Introduction to ChatGPT and AI](#)
- [Best Practices for Using ChatGPT with Excel](#)
- [Use ChatGPT with Formulas](#)
- [Use ChatGPT with Excel File](#)
- [Use ChatGPT to Learn Excel](#)
- [Use ChatGPT to Automate Repetitive Tasks](#)
- [Wrap-Up](#)

Go to
<https://openai.com/chatgpt>
and setup a free account

Introduction to ChatGPT and AI



Go to
<https://openai.com/chatgpt>
and setup a free account



What is ChatGPT?

Stands for Chat Generative Pre-trained Transformer

Developed by OpenAI

ChatGPT isn't the only AI (Artificial Intelligence) application

Natural language processing AI

Think of it as a web search engine that provides a narrative response



How ChatGPT Works

You use a chat to ask the AI a question

The AI inputs the question into its pre-trained dataset

The AI formulates an answer based upon the dataset

The AI generates a response in natural human language

You ask clarification questions and the conversation continues

Things to Know About ChatGPT

ALL Generative AI (ChatBots) are evolving quickly

- New ChatBots are developed everyday
- We use ChatGPT as an example, you can use something different

The dataset only knows what it is “fed”

- If current events are not in the dataset, it won't respond with those events
- If dataset includes biases, responses may include biases
- Free ChatGPT has an older dataset than the paid ChatGPT Pro version

Apps available to detect the use of Generative AI content

What Can You Do With ChatGPT?

The list is infinite, these are just examples

Prepare yourself for a job interview

Summarize simple or complex ideas

Write text (articles, papers, reports, brochures, etc.)

Translate foreign text

Create images

Using ChatGPT

Need an account

Go to <https://openai.com/chatgpt>

Setup a free account

- You can later upgrade to the Plus version

Log into your account

Type a question

ALWAYS test the results, sometimes the AI gets it wrong

An Example of Using ChatGPT

OP write a course description for a class titled "using chatgpt with excel"



Course Title: Using ChatGPT with Excel



Course Description:

Welcome to "Using ChatGPT with Excel," an innovative and hands-on course that combines the power of artificial intelligence with the functionality of Microsoft Excel. This course is designed for students, professionals, and enthusiasts seeking to leverage the potential of ChatGPT - a cutting-edge language model - to enhance their Excel data analysis and productivity.

Course Overview:

In this dynamic course, you will embark on a transformative journey, exploring the seamless integration of ChatGPT with Excel to streamline your data processing, decision-making, and problem-solving tasks. Throughout the program, you will be guided by expert instructors who possess a deep understanding of AI technologies and Excel's diverse capabilities.

Best Practices for Using ChatGPT with Excel



Using ChatGPT with Excel

Open ChatGPT and your spreadsheet

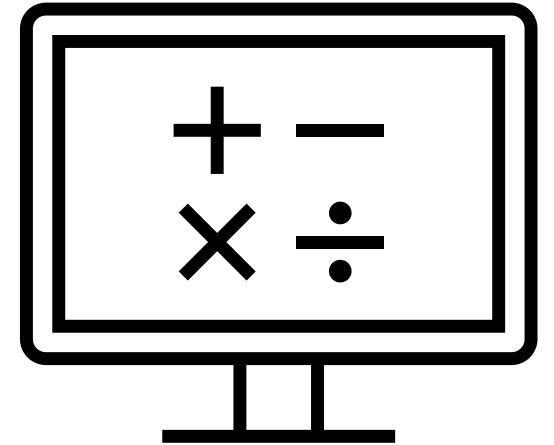
Be VERY specific when asking your question

Copy and paste response into Excel

NEVER trust the response

- Use it for training
- Be prepared to edit the response
- Validate EVERY response to confirm it is correct
- If response isn't correct continue clarifying chats

Use ChatGPT with Formulas



Simple Example

Monthly Sales 20xx					
Cust#	Customer Name	Product Name	Qty	Unit Price	Total
33930	Justin A Robinson	ML Mountain Tire	77	\$29.99	
50470	Tamara Zhu	Patch Kit/8 Patches	238	\$2.29	
43580	Nicole White	Road Tire Tube	15	\$3.99	
42860	Nancy L Sanchez	Road-250 Red, 48	5	\$2,443.35	
45800	Reginald Navarro	Sport-100 Helmet, Blue	50	\$34.99	
14170	Autumn Zhu	Touring Tire	150	\$28.99	
43580	Nicole White	LL Road Tire	110	\$21.49	
21840	Denise Mehta	Mountain-200 Black, 42	18	\$2,049.09	
50470	Tamara Zhu	Mountain-200 Silver, 42	13	\$2,319.99	
14170	Autumn Zhu	Touring Tire Tube	23	\$4.99	
45800	Reginald Navarro	Touring-1000 Blue, 46	12	\$2,384.07	
Grand Total					

Annotations:

- Create Total Formula
- Copy the Formula down
- Create Grand Total Formula

Create Total Formula - Non-Specific Question

OP

write an excel formula that multiplies qty by unit price

Non-Specific Question



In Microsoft Excel, you can create a formula to multiply the quantity (qty) by the unit price to calculate the total cost. Assuming that the quantity is in cell A1 and the unit price is in cell B1, you can use the following formula in another cell (e.g., C1) to calculate the total cost:

```
=A1 * B1
```

Here's how this formula works:

- `A1` refers to the cell containing the quantity.
- `*` is the multiplication operator.
- `B1` refers to the cell containing the unit price.

Simply enter this formula into a cell, and it will multiply the quantity by the unit price, giving you the total cost in the cell where you entered the formula (in this case, cell C1). You can copy this formula down to calculate the total cost for multiple items if needed.

Leads to Non-Specific Answer

Provides additional instruction

Create Total Formula - More-Specific Question

OP

what if qty is in column D and unit price is in column E

More-Specific Question



If the quantity (qty) is in column D, and the unit price is in column E, you can use the following Excel formula to calculate the total cost in a cell adjacent to each row of data. For example, if you want to calculate the total cost for a specific row, you can use the formula in column F:

```
'=D1 * E1'
```

Here's how this formula works:

- `'D1'` refers to the cell in column D containing the quantity for the first row of data.
- `'*'` is the multiplication operator.
- `'E1'` refers to the cell in column E containing the unit price for the first row of data.

To calculate the total cost for each row, place this formula in the cell in column F of the same row, and Excel will perform the multiplication for you. If you have multiple rows of data and want to calculate the total cost for each row, you can copy the formula down in column F to apply it to all the rows. Excel will automatically adjust the cell references for each row, so it calculates the total cost correctly for each line item.

Leads to More-Specific Answer

Provides additional instruction

Create Total Formula - Specific Question

OP

what if qty is in D4 and unit price is in E4

Specific Question



If the quantity (qty) is in cell D4, and the unit price is in cell E4, you can calculate the total cost in a different cell using the following formula:

`=D4 * E4`

Leads to a Specific Answer

Here's how this formula works:

- `'D4'` refers to the cell containing the quantity.
- `'*'` is the multiplication operator.
- `'E4'` refers to the cell containing the unit price.

Place this formula in any cell you want to calculate the total cost, and it will multiply the quantity in D4 by the unit price in E4, giving you the result in the cell where you entered the formula.

Copy & Paste to your spreadsheet
(Paste into the formula bar so you
don't get formatting)

Paste Formula into Excel

The screenshot shows an Excel spreadsheet with a table titled "Monthly Sales 20xx". The table has columns for Cust#, Customer Name, Product Name, Qty, Unit Price, and Total. The formula bar at the top shows the formula `=D4 * E4`. A green callout points to the formula bar, and another green callout points to the bottom-right corner of cell F4, indicating that the formula should be dragged down to other cells.

	A	B	C	D	E	F
1	Monthly Sales 20xx					
3	Cust#	Customer Name	Product Name	Qty	Unit Price	Total
4	33930	Justin A Robinson	ML Mountain Tire	77	\$29.99	\$2,309.23
5	50470	Tamara Zhu	Patch Kit/8 Patches	238	\$2.29	
6	43580	Nicole White	Road Tire Tube	15	\$3.99	
7	42860	Nancy L Sanchez	Road-250 Red, 48	5	\$2,443.35	
8	45800	Reginald Navarro	Sport-100 Helmet, Blue	50	\$34.99	
9	14170	Autumn Zhu	Touring Tire	150	\$28.99	
10	43580	Nicole White	LL Road Tire	110	\$21.49	
11	21840	Denise Mehta	Mountain-200 Black, 42	18	\$2,049.09	
12	50470	Tamara Zhu	Mountain-200 Silver, 42	13	\$2,319.99	
13	14170	Autumn Zhu	Touring Tire Tube	23	\$4.99	
14	45800	Reginald Navarro	Touring-1000 Blue, 46	12	\$2,384.07	
15	Grand Total					

Paste into the formula bar so you don't get formatting

Put cursor on lower right square and drag down to other cells

Create Total Formula - EVEN More-Specific Question

OP what if qty is in cells d4 through d14 and unit price is in corresponding cells e4 through e14

More-Specific Question

If you have quantities in cells D4 through D14 and corresponding unit prices in cells E4 through E14, and you want to calculate the total cost for each row, you can use an Excel formula in an adjacent column (for example, column F) to perform the calculations. Here's how you can do it:

Leads to More-Specific Answer

1. In cell F4 (or any cell in column F where you want to start calculating the total cost), enter the following formula:

```
excel Copy code  
=D4 * E4
```

Provides additional instruction

1. Press Enter. This will calculate the total cost for the first row (D4 * E4).
2. Now, select cell F4, and hover your cursor over the small square in the bottom-right corner of the selected cell (this is called the fill handle). Your cursor will turn into a small black cross.
3. Click and drag the fill handle down to fill the formula for the remaining rows (F5 through F14). Excel will automatically adjust the cell references, so it calculates the total cost for each corresponding row (D5 * E5, D6 * E6, and so on).

Now, column F will contain the total cost for each row based on the quantities in column D and unit prices in column E.

Create Total Formula - One More Question

OP

can we use an array formula

Expanded Question



Yes, you can use an array formula to calculate the total cost for each row when the quantities are in cells D4 through D14 and the unit prices are in corresponding cells E4 through E14.

You can use Excel's array formula feature to do this. Here's how:

1. In an empty column, for example, column F, select the cell where you want the results to appear. Let's say you want the results to start in cell F4.
2. Enter the following array formula:

less

Copy code

```
=SUM(D4:D14 * E4:E14)
```

1. Instead of pressing Enter, press Ctrl + Shift + Enter. This tells Excel that you are entering an array formula. If done correctly, Excel will automatically place curly braces `{}` around your formula, indicating that it's an array formula.

The array formula will calculate the product of each corresponding quantity and unit price in the specified ranges and then sum up these products to give you the total cost. The result will be displayed in cell F4. You can drag this formula down to fill the results for the entire range of rows (F5 through F14). Remember to use Ctrl + Shift + Enter for each cell when entering or editing this array formula.

Provides an explanation but it relates to older version of Excel

This does not work in Microsoft 365, where you just need to press Enter. Older version you press Ctrl+Shift+Enter

Create Total Formula - Clarifying Question

OP

how do you use this formula in microsoft 365

Clarifying Question



In Microsoft 365 (which includes Excel), you can use array formulas similarly to previous versions of Excel. Here's how to enter an array formula in Microsoft 365:

1. Select the cell where you want the array formula result to appear. Let's assume you want the results to start in cell F4.
2. Enter the following array formula in the formula bar (the bar located below the ribbon where you enter formulas):

excel

Copy code

```
=SUM(D4:D14 * E4:E14)
```

1. Instead of pressing Enter alone, you need to press Ctrl + Shift + Enter simultaneously. If you entered it correctly, Excel will automatically place curly braces `{}` around your formula in the formula bar, indicating that it's an array formula.

The array formula will calculate the product of each corresponding quantity and unit price in the specified ranges and then sum up these products to give you the total cost. The result will be displayed in cell F4. You can then drag this formula down to fill the results for the entire range of rows (F5 through F14). Remember to use Ctrl + Shift + Enter for each cell when entering or editing this array formula.

In Microsoft 365, array formulas work similarly to how they did in previous Excel versions, and the Ctrl + Shift + Enter combination is used to indicate that you're entering an array formula.

Still provides the same incorrect answer, which is why **all formulas should be validated!!**

Continue Asking Questions

- How do you use this formula in Excel 2019
- Can we use an array formula to calculate total in F4 through F14
- Can we use an array formula calculate total for each row
- This is not correct, try again
- I want the total for each cell in F4 through F14
- Can I use a dynamic array formula in Office 365

Grand Total Example

OP

what is the formula for a grand total of the totals column

Grand Total Question



To calculate the grand total of the totals column (for example, the sum of all the individual totals in column F), you can use the SUM function. If you have dynamic arrays enabled in your Office 365 version of Excel, you can simply use the SUM function on the entire column F like this:

```
=SUM(F4:F14)
```

This formula will add up all the values in cells F4 through F14, giving you the grand total of the totals column.

If you don't have dynamic arrays enabled or are working with a version of Excel that doesn't support them, you can use the SUM function with a traditional array formula:

1. Select a cell where you want the grand total to appear (for example, cell F15).
2. Enter the following formula:

excel

Copy code

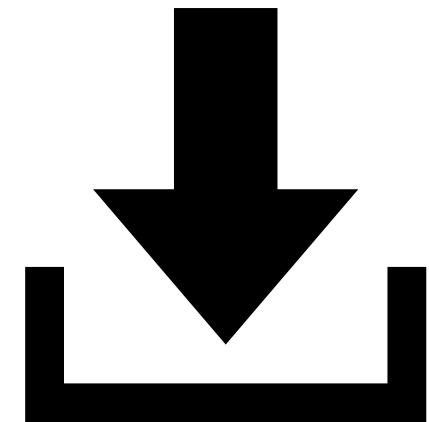
```
=SUM(F4:F14)
```

1. Instead of pressing Enter alone, press Ctrl + Shift + Enter simultaneously to indicate that you're using an array formula.

This formula will calculate the sum of all the values in cells F4 through F14, providing you with the grand total of the totals column.

Copy & Paste to your spreadsheet (Copy code allows you to paste directly into cell)

Use ChatGPT with Excel File



Formula to Confirm Consistent Calculated Column

F4 X ✓ fx =[@Qty]*[@Unit Price]

Monthly Sales 20xx					
Cust#	Customer Name	Product Name	Qty	Unit Price	Total
33930	Justin A Robinson	ML Mountain Tire	77	\$29.99	\$2,309.23
50470	Tamara Zhu	Patch Kit/8 Patches	238	\$2.29	\$545.02
43580	Nicole White			\$3.99	\$3.99
42860	Nancy L Sanchez		5	\$2,443.35	\$12,216.75
45800	Reginald Navarro		50	\$34.99	\$1,749.50
14170	Autumn Zhu	Touring Tire	150	\$28.99	\$4,348.50
43580	Nicole White	LL R	110	\$21.49	\$2,363.90
21840	Denise Mehta	Mo	18	\$2,049.09	\$36,883.62
50470	Tamara Zhu	Mo	13	\$2,319.99	\$30,159.87
14170	Autumn Zhu	Touring Tire Tube	23	\$4.99	\$114.77
45800	Reginald Navarro	Touring-1000 Blue, 46	12	\$2,384.07	\$28,608.84
Total					\$119,303.99

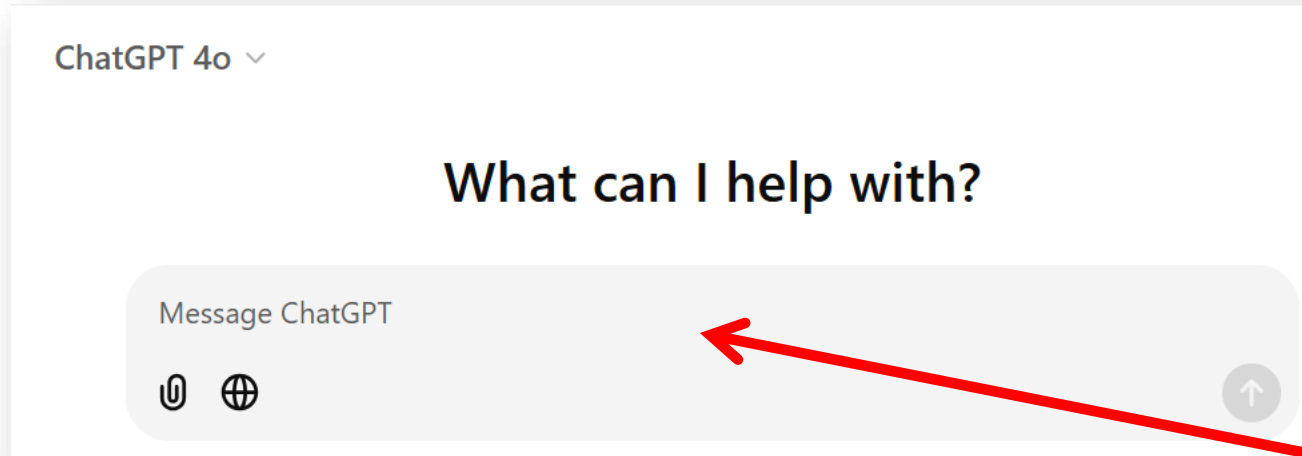
Best Practice is column calcs s/b consistent

What if someone manually enters value?

Excel Error Checking may display indicator

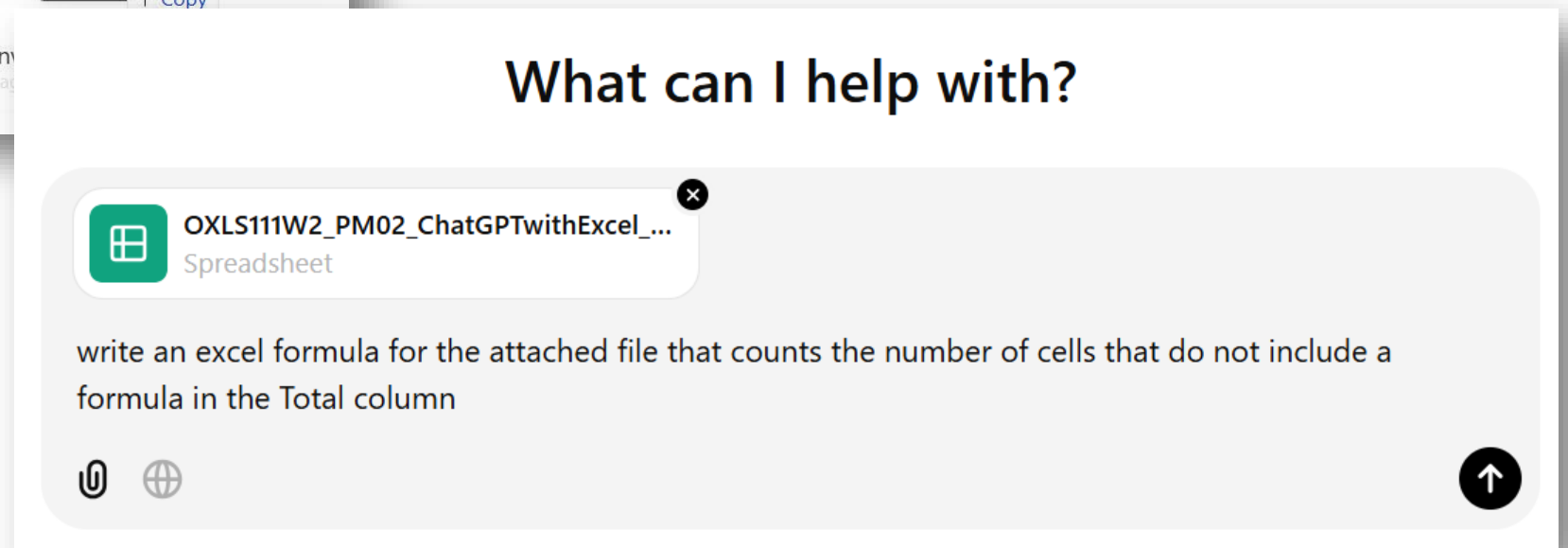
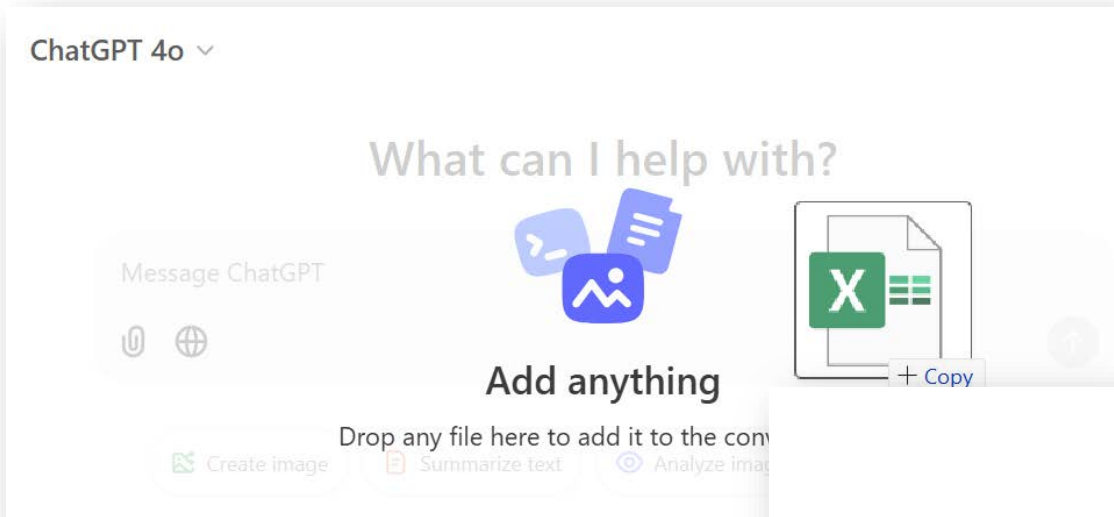
Easy to "see" on small table

Drag & Drop File into Prompt



<input type="checkbox"/>	Name	Status
<input type="checkbox"/>	Course Material	✓
<input type="checkbox"/>	OXLS111W2_PM01_ChatGPTwithExcel_...	🔄
<input checked="" type="checkbox"/>	OXLS111W2_PM02_ChatGPTwithExcel_...	✓
<input type="checkbox"/>	OXLS111W2_PPT_v2412_1.pptx	🔄
<input type="checkbox"/>	OXLS111W2_PS_v2309_2.xlsx	✓

Type Question



Result #1

write an excel formula for the attached file that counts the number of cells that do not include a formula in the Total column



The data contains a column labeled "Total" under `Unnamed: 5`. To count the number of cells in this column that **do not contain formulas**, we need to focus on whether the values in the column are constants rather than results of a formula.

Here's the Excel formula you can use, assuming the "Total" column starts at cell F3:

excel

```
=SUMPRODUCT(--(NOT(ISFORMULA(F3:F100))))
```

Result is a generic formula

Not specific enough because doesn't "see" the table

Explanation:

1. `ISFORMULA(F3:F100)` : Checks if the cells in the range F3 contain formulas.
2. `NOT(...)` : Reverses the check, identifying cells without formulas.
3. `--(...)` : Converts the boolean values (TRUE/FALSE) to 1 and 0.
4. `SUMPRODUCT(...)` : Sums up the 1s, effectively counting the non-formula cells.

Nice explanation

Let me know if you'd like the data analyzed or adjusted further! [\[-\]](#)



Rephrase Question - Result #2

What is the formula using the table and column name

Ask to use Table and Column names



If the data is formatted as an Excel Table and the "Total" column has a structured reference name (e.g., `TableName[Total]`), you can use the following formula to count cells in the "Total" column that do not contain formulas:

excel

Copy code

```
=SUMPRODUCT(--(NOT(ISFORMULA(TableName[Total]))))
```

Use generic "TableName"

Explanation:

- `TableName[Total]` : Refers to the "Total" column within the specified table.
- `ISFORMULA(...)` : Checks if the cells in the "Total" column contain formulas.
- `NOT(...)` : Reverses the check to identify non-formula cells.
- `--(...)` : Converts boolean values (TRUE/FALSE) to numeric (1/0).
- `SUMPRODUCT(...)` : Sums the 1s, counting the non-formula cells.

If you're unsure of the table name, you can click on the "Table Design" tab in Excel, where the name of the table will be displayed in the "Table Name" box. Replace `TableName` in the formula with the actual name of your table.

Explains how to replace generic TableName

A Complete Specific Question

Using the attached file and the ComplexBLANK sheet and Table1, write an excel formula for the that counts the number of cells that do not include a formula in the Total column in table1 using table name and column name

If the data in the "ComplexBLANK" sheet has been formatted as a table named `Table1` and the "Total" column is correctly labeled, the following formula can be used to count the number of cells in the `Total` column of `Table1` that do not contain formulas:

```
excel Copy code
=SUMPRODUCT(--(NOT(ISFORMULA(Table1[Total]))))
```

Explanation:

- `Table1[Total]` : Refers to the "Total" column in the `Table1` table.
- `ISFORMULA(...)` : Checks whether each cell in the column contains a formula.
- `NOT(...)` : Reverses the check to find cells without formulas.
- `--(...)` : Converts TRUE/FALSE results to 1/0.
- `SUMPRODUCT(...)` : Adds up the resulting 1s, counting the non-formula cells.

Steps to Verify:

1. **Ensure Table Exists:** Confirm that the data range in the `ComplexBLANK` sheet is formatted as a table named `Table1`.
 - To do this, click on any cell within the range and look at the "Table Design" tab in the ribbon.
2. **Check Column Name:** Ensure the column for totals is labeled as `Total` in the table header.
3. **Paste Formula:** Use the formula above in any empty cell to get the count.

Let me know if you need help setting up the table or validating its structure!

Using the attached file and the **ComplexBLANK sheet** and **Table1**, write an excel formula for the that counts the number of cells that do not include a formula in the **Total column in table1** using **table name and column name**

Don't have to create the "best" question but a "specific" question can save some steps

Paste Formula into Excel

Formula Bar: `=SUMPRODUCT(--(NOT(ISFORMULA(Table1[Total])))`

	A	B	C	D	E	F	G
1	Monthly Sales 20xx						1
3	Cust#	Customer Name	Product Name	Qty	Unit Price	Total	
4	33930	Justin A Robinson	ML Mountain Tire	77	\$29.99	\$2,309.23	
5	50470	Tamara Zhu	Patch Kit/8 Patches	238	\$2.29	\$545.02	
6	43580	Nicole White	Road Tire Tube	15	\$3.99	\$3.99	
7	42860	Nancy L Sanchez	Road-250 Red, 48	5	\$2,443.35	\$12,216.75	
8	45800	Reginald Navarro	Sport-100 Helmet, Blue	50	\$34.99	\$1,749.50	
9	14170	Autumn Zhu	Touring Tire	150	\$28.99	\$4,348.50	
10	43580	Nicole White	LL Road Tire	110	\$21.49	\$2,363.90	
11	21840	Denise Mehta	Mountain-200 Black, 42	18	\$2,049.09	\$36,883.62	
12	50470	Tamara Zhu	Mountain-200 Silver, 42	13	\$2,319.99	\$30,159.87	
13	14170	Autumn Zhu	Touring Tire Tube	23	\$4.99	\$114.77	
14	45800	Reginald Navarro	Touring-1000 Blue, 46	12	\$2,384.07	\$28,608.84	
15	Total					\$119,303.99	
16							

Add an IF Formula

Using the above formula, create an IF formula that returns a result that says "Inconsistent Formula" if result is greater than 0



If you want to combine the formula for checking cells that do not include formulas with an IF formula to return "Inconsistent Formula" when the result is greater than 0, here is the solution:

excel

Copy code

```
=IF(SUMPRODUCT(--NOT(ISFORMULA(Table1[Total]))) > 0, "Inconsistent Formula", "")
```

Explanation:

1. `SUMPRODUCT(--NOT(ISFORMULA(Table1[Total])))`: Counts the number of cells in `Table1[Total]` that do not include formulas.
2. `> 0`: Checks if the count of such cells is greater than 0.
3. `"Inconsistent Formula"`: Displays this message if the condition is true.
4. `""`: Displays a blank cell if the condition is false.

Steps:

1. Place this formula in any cell where you want the result.
2. It will evaluate whether any non-formula cells exist in the `Total` column of `Table1` and return "Inconsistent Formula" if there are any.

Let me know if you need further clarification or help applying this formula!

Using the above formula, create an IF formula that returns a result that says "Inconsistent Formula" if result is greater than 0

Copy Code

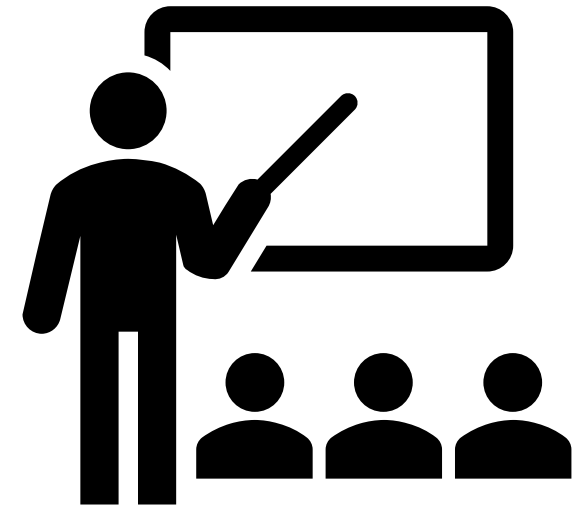
FINAL Results

H1 *fx* =IF(SUMPRODUCT(--NOT(ISFORMULA(Table2[Total]))) > 0, "Inconsistent Formula", "")

	A	B	C	D	E	F	G	H
1	Monthly Sales 20xx							1 Inconsistent Formula
3	Cust#	Customer Name	Product Name	Qty	Unit Price	Total		
4	33930	Justin A Robinson	ML Mountain Tire	77	\$29.99	\$2,309.23		
5	50470	Tamara Zhu	Patch Kit/8 Patches	238	\$2.29	\$545.02		
6	43580	Nicole White	Road Tire Tube	15	\$3.99	\$3.99		
7	42860	Nancy L Sanchez		5	\$2,443.35	\$12,216.75		
8	45800	Reginald Navarro		50	\$34.99	\$1,749.50		
9	14170	Autumn Zhu		150	\$28.99	\$4,348.50		
10	43580	Nicole White		110	\$21.49	\$2,363.90		
11	21840	Denise Mehta		18	\$2,049.09	\$36,883.62		
12	50470	Tamara Zhu		13	\$2,319.99	\$30,159.87		
13	14170	Autumn Zhu	Touring Tire Tube	23	\$4.99	\$114.77		
14	45800	Reginald Navarro	Touring-1000 Blue, 46	12	\$2,384.07	\$28,608.84		
15	Total					\$119,303.99		
16								

NOTE: Copied to new sheet, which changed the TableName, so had to change formula

Use ChatGPT to Learn Excel



How to Use ChatGPT to Learn Excel

- Explain a function
- Create data to use with a formula
- Debug a formula
- Explain a complex formula
- Explain a concept (absolute/relative reference)
- Explain a feature (pivotable)

Use ChatGPT to Explain a Function

Explain how the XLOOKUP function in Excel works

OP

Explain how the XLOOKUP function in Excel works



The XLOOKUP function in Excel is a powerful and flexible lookup function introduced in Excel 365 and Excel 2019. It is designed to find and return values from a range or array based on specified search criteria. XLOOKUP can perform both horizontal and vertical lookups and offers various options for handling errors and providing default values. Here's how the XLOOKUP function works:

Syntax:

```
css Copy code
XLOOKUP(lookup_value, lookup_array, return_array, [if_not_found], [match_mode]
```

- `lookup_value`: The value you want to find or lookup.
- `lookup_array`: The range or array containing the values you want to search through.
- `return_array`: The range or array from which you want to retrieve matching values.
- `[if_not_found]` (optional): Specifies the behavior when the `lookup_value` is not found in the `lookup_array`. You can use text, a specific value, or an expression. If omitted, XLOOKUP returns #N/A by default.
- `[match_mode]` (optional): Determines how XLOOKUP handles approximate matches. This argument can be one of the following: 0 (exact match, the default), -1 (exact match or next smaller item), or 1 (exact match or next larger item).
- `[search_mode]` (optional): Determines whether XLOOKUP searches from the first to last match or the reverse. This argument can be 1 (search from beginning to end, the default) or -1 (search from end to beginning).

Key points about how XLOOKUP works:

1. **Lookup Direction:** XLOOKUP can search both vertically and horizontally. If the `lookup_array` is a single row or column, it will search in that direction. If it's a 2D range, it can search in both directions.
2. **Return Values:** XLOOKUP can return single values, arrays of values, or spill results into multiple cells if multiple matches are found.
3. **Handling Errors:** You can specify what XLOOKUP should return when it doesn't find a match using the `[if_not_found]` argument. You can choose to return an error, a custom message, or a default value.
4. **Approximate Matches:** You can use the `[match_mode]` argument to perform approximate matches when the exact match is not found. For example, finding the nearest value that is less than or greater than the lookup value.
5. **Search Order:** The `[search_mode]` argument allows you to specify the search order - whether XLOOKUP should search from the beginning of the data to the end or vice versa.

Example:

Suppose you have a list of products in column A and their corresponding prices in column B. You want to find the price of a specific product. You can use XLOOKUP like this:

```
less Copy code
=XLOOKUP("Product A", A1:A10, B1:B10, "Product Not Found")
```

This formula searches for "Product A" in column A, and if found, it returns the corresponding price from column B. If "Product A" is not found, it returns "Product Not Found" as specified in the `[if_not_found]` argument.

Use ChatGPT to Create Data to Use With a Formula

OP can you show an example with business data

Certainly! Let's say you have a dataset containing sales information for different products, and you want to use the XLOOKUP function to find the total sales for a specific product. Here's an example using business data:

Suppose you have the following data in an Excel worksheet:

Product	Sales Amount
Product A	\$1,200
Product B	\$900
Product C	\$1,500
Product D	\$2,000
Product E	\$1,800

Now, you want to find the total sales amount for "Product C."

You can use the XLOOKUP function to do this as follows:

1. In an empty cell (let's say cell D2), enter the product you want to look up, which is "Product C."
2. In another cell (for example, cell E2), enter the following XLOOKUP formula:

```
excel Copy
=XLOOKUP(D2, A1:A5, B1:B5, "Product Not Found", 0, 1)
```

Can you show an example with business data

Copy & Paste data to a worksheet

	A	B	C	D	E
		Sales Amount			XLOOKUP Sales
1	Product			Enter Product	Amount
2	Product A	\$1,200		Product C	\$1,500
3	Product B	\$900			
4	Product C	\$1,500			
5	Product D	\$2,000			
6	Product E	\$1,800			

Copy & Paste formula to a cell, BUT array ranges are WRONG. Correct: =XLOOKUP(D2, A2:A6, B2:B6, "Product Not Found", 0, 1)

Use ChatGPT to Debug a Formula #1

OP

What is wrong with this Excel formula =XLOOKUP(D2, A2:A6, B3:B5, "Product Not Found", 0, 1)



The issue with the Excel formula you provided is that the ``lookup_array`` (A2:A6) and ``return_array`` (B3:B5) have different sizes. In an XLOOKUP formula, the ``lookup_array`` and ``return_array`` must have the same size or be consistent in size.

In your formula:

- ``A2:A6`` is a range of five cells (A2 to A6).
- ``B3:B5`` is a range of three cells (B3 to B5).

Since these two ranges have different sizes, Excel will give you a ``#N/A`` error because it cannot find a corresponding value in the ``return_array``.

To fix this, make sure that the ``lookup_array`` and ``return_array`` have the same number of elements or correspond correctly. Here's an example assuming you want to match "Product C" in cell D2 with the correct sales amount:

- If the sales amount for "Product C" is in cell B3, use the formula: ``=XLOOKUP(D2, A2:A6, B2:B6, "Product Not Found", 0, 1)``.

This formula will match "Product C" in the ``lookup_array`` (A2:A6) and return the sales amount from the corresponding cell in the ``return_array`` (B2:B6).

What is wrong with this Excel formula =XLOOKUP(D4, A2:A6, B3:B5, "Product Not Found", 0, 1)

Arrays MUST be of the SAME size and they are not

Use ChatGPT to Debug a Formula #2

OP

What is wrong with this Excel formula =XLOOKUP(D6, A2:A6)



The Excel formula you provided, `=XLOOKUP(D6, A2:A6)`, has a missing `return_array` argument. The XLOOKUP function requires three main arguments:

1. `lookup_value`: The value you want to find.
2. `lookup_array`: The range where you want to search for the value.
3. `return_array`: The range from which you want to return a corresponding value.

In your formula, you provided the `lookup_value` (D6) and the `lookup_array` (A2:A6), but you didn't specify the `return_array`. Without the `return_array`, Excel doesn't know what value to return when it finds a match in the `lookup_array`.

To fix this, you should include the `return_array` as well. For example, if you want to return a corresponding value from another column (e.g., B2:B6) when a match is found in A2:A6, you would modify your formula like this:

```
excel Copy code  
=XLOOKUP(D6, A2:A6, B2:B6)
```

In this formula, `D6` is the value you want to find, `A2:A6` is the range where you want to search for that value, and `B2:B6` is the range from which you want to return the corresponding value when a match is found in the `lookup_array`.

What is wrong with this Excel formula =XLOOKUP(D6, A2:A6)

We are missing the "return_array"

Suggests solution

Use ChatGPT to Explain a Complex Formula

OP

Explain what this Excel formula is doing =IF(ROWS(F11:F22)-SUMPRODUCT(--ISFORMULA(F11:F22))<>0,"Missing Formula","OK")



The Excel formula you provided, `=IF(ROWS(F11:F22)-SUMPRODUCT(--ISFORMULA(F11:F22))<>0,"Missing Formula","OK")`, is used to check whether there are any cells in the range F11:F22 that do not contain formulas.

Here's a breakdown of how this formula works:

1. `ROWS(F11:F22)`: This part of the formula counts the number of rows in the range F11:F22, which is 12 rows in this case (assuming F11 is the starting cell and F22 is the ending cell).
2. `ISFORMULA(F11:F22)`: The `ISFORMULA` function is used to check if each cell in the range F11:F22 contains a formula. It returns an array of TRUE and FALSE values, where TRUE indicates that the cell contains a formula, and FALSE indicates that it doesn't.
3. `--ISFORMULA(F11:F22)`: The double unary operator (`--`) is used to convert the TRUE and FALSE values into 1s and 0s. This is necessary for the SUMPRODUCT function to count the number of cells with formulas correctly.

`SUMPRODUCT(--ISFORMULA(F11:F22))`: This part of the formula calculates the sum of the

Explain what this Excel formula is doing
`=IF(ROWS(F11:F22)-SUMPRODUCT(--ISFORMULA(F11:F22))<>0,"Missing Formula","OK")`

4. `SUMPRODUCT(--ISFORMULA(F11:F22))`: This part of the formula calculates the sum of the 1s and 0s in the array created by `--ISFORMULA(F11:F22)`. Essentially, it counts the number of cells in the range F11:F22 that contain formulas.
5. `ROWS(F11:F22) - SUMPRODUCT(--ISFORMULA(F11:F22))`: This calculates the difference between the total number of rows in the range and the number of cells in the range that contain formulas. If there are any cells without formulas, this difference will be greater than zero.
6. `<>0`: This part of the formula checks if the difference calculated in the previous step is not equal to zero. If it's not equal to zero, it means there are cells in the range F11:F22 that do not contain formulas.
7. `"Missing Formula"`: If the difference is not equal to zero (i.e., there are cells without formulas), the formula returns "Missing Formula."
8. `"OK"`: If the difference is equal to zero (i.e., all cells contain formulas), the formula returns "OK."

In summary, this formula is a way to check whether there are any cells in the specified range (F11:F22) that do not contain formulas. If all cells contain formulas, it returns "OK," but if at least one cell is missing a formula, it returns "Missing Formula."

Use ChatGPT to Explain a Concept

In Excel what is the difference between absolute and relative references

OP

In Excel what is the difference between absolute and relative references



In Excel, absolute and relative references are used in formulas to determine how cell references should behave when the formula is copied or filled to other cells. They control whether the reference should stay fixed (absolute) or adjust (relative) when copied to different cells.

1. Relative Reference:

- When you use a relative reference in a formula (e.g., A1), the reference adjusts when the formula is copied to another cell.
- If you copy the formula one cell down, the reference changes to A2.
- If you copy the formula one cell to the right, the reference changes to B1.
- Relative references are indicated by the absence of a dollar sign before the column letter and row number (e.g., A1).

2. Absolute Reference:

- When you use an absolute reference in a formula (e.g., \$A\$1), the reference does not change when the formula is copied to another cell.
- If you copy the formula to another cell, whether up, down, left, or right, the reference remains \$A\$1.
- Absolute references are indicated by the presence of a dollar sign before both the column letter and row number (e.g., \$A\$1).

Mixed Reference:

... column letter and row number (e.g., \$A1).

3. Mixed Reference:

- A mixed reference fixes either the column or row but not both. You can achieve this by placing a dollar sign before either the column or row.
- For example, \$A1 is an absolute column reference and a relative row reference. If you copy this formula to another cell vertically, it will stay in column A but adjust to the new row. If you copy it horizontally, it will adjust the column but stay in row 1.
- Similarly, A\$1 is a relative column reference and an absolute row reference. It behaves the opposite way: it stays in the same row but adjusts to the new column when copied horizontally.

The choice between absolute, relative, and mixed references depends on the specific requirements of your Excel formula. Absolute references are used when you want a reference to remain constant (e.g., when referring to a fixed constant or a total in a specific cell). Relative references are used when you want the reference to adjust as you copy the formula (e.g., when calculating subtotals for different items in a column). Mixed references are useful when you want to fix either the row or column but allow the other part to adjust (e.g., when working with tables and headers).

Use ChatGPT to Explain a Feature

What is an Excel PivotTable and How can I use it

OP

What is an Excel PivotTable and How can I use it



An Excel PivotTable is a powerful data analysis and summarization tool that allows you to quickly and easily analyze large sets of data. It's particularly useful when you have a dataset with multiple columns, and you want to summarize, analyze, and extract meaningful insights from that data. Here's how you can use an Excel PivotTable:

Creating a PivotTable:

- 1. Prepare Your Data:** Ensure your data is organized in a structured format with column headers. Each column should represent a different attribute, and each row should represent a unique record.
- 2. Select Your Data Range:** Click anywhere within your dataset, Excel will automatically detect

Can you show an example of using an Excel PivotTable

OP

can you show an example of using an Excel PivotTable



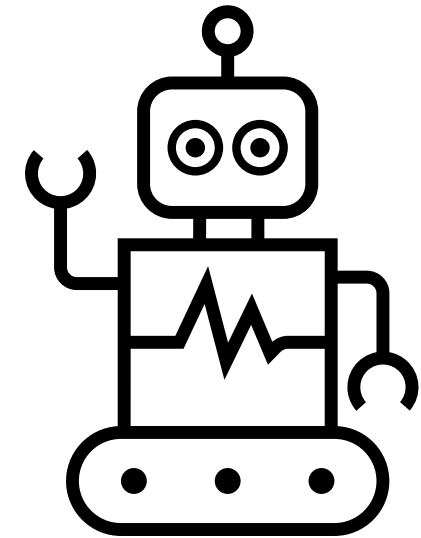
Certainly! Let's walk through an example of using an Excel PivotTable to analyze a simple sales dataset. We'll create a PivotTable to summarize sales by product and region.

Step 1: Prepare Your Data

Here's a sample dataset:

Product	Region	Sales
Product A	North	\$500
Product B	South	\$700

Use ChatGPT to Automate Repetitive Tasks



The Scenario

We have raw data that is not in the correct order



We want to:

Reorder the columns

Add a Total column

Turn it into an Excel
Table

Format the dollar
columns to the
Accounting format

Add a Grand Total
for the Total column

Data Set Example

	A	B	C	D	E	F
1	Unit Price	Qty	Customer Name	Product Name	Cust#	
2	29.99	77	Justin A Robins	ML Mountain T	33930	
3	2.29	238	Tamara Zhu	Patch Kit/8 Pat	50470	
4	3.99	15	Nicole White	Road Tire Tube	43580	
5	2443.35	5	Nancy L Sanchez	Road-250 Red,	42860	
6	34.99	50	Reginald Navarr	Sport-100 Helm	45800	
7	28.99	150	Autumn Zhu	Touring Tire	14170	
8	21.49	110	Nicole White	LL Road Tire	43580	
9	2049.09	18	Denise Mehta	Mountain-200 I	21840	
10	2319.99	13	Tamara Zhu	Mountain-200 S	50470	
11	4.99	23	Autumn Zhu	Touring Tire Tul	14170	
12	2384.07	12	Reginald Navarr	Touring-1000 B	45800	
13						
14						
15	E - A	C - B	D - C	B - D	A - E	d * e
16	Cust#	Customer Name	Product Name	Qty	Unit Price	Total
17						

Process Steps

Type out each step

As if you were doing it manually

Put each step in a separate cell

Follow each step manually

Copy & paste steps into ChatGPT

Test on a sample spreadsheet

Example of Our Instructions

G
Instructions:
Create an Excel Macro that:
Uses the AutomateTasksData sheet
Where column A is UnitPrice, column B is Qty, Column C is Customer, Column D is Product and column E is cust#
Insert AutomateTasksFinal sheet and Rearrange columns as follows: Cust#, Customer, Product, Qty, UnitPrice
Make the data into an Excel table
Add column F as a Total column where it is Qty * Unit Price
Format the UnitPrice and Total columns as Accounting
Add a Total Row for the Total Column

Paste Instructions into ChatGPT

OP

Create an Excel Macro that:

Uses the AutomateTasksData sheet

Where column A is UnitPrice, column B is Qty, Column C is Customer, Column D is Product and column E is cust#

Insert AutomateTasksFinal sheet and Rearrange columns as follows: Cust#, Customer, Product, Qty, UnitPrice

Make the data into an Excel table

Add column F as a Total column where it is Qty * Unit Price

Format the UnitPrice and Total columns as Accounting

Add a Total Row for the Total Column



You can create an Excel Macro to automate these tasks using VBA (Visual Basic for Applications). Here's a step-by-step guide to creating the macro:

1. Press `ALT` + `F11` to open the Visual Basic for Applications (VBA) editor in Excel.
2. In the VBA editor, click on "Insert" > "Module" to insert a new module.
3. Copy and paste the following VBA code into the module:

vba

Copy code

```
Sub AutomateTasksMacro()
```

```
' Define source and destination worksheet
```

Pasted into Excel and Ran Macro - End Result #1

	A	B	C	D	E	F
1	Cust#	Customer Name	Product Name	Qty	Unit Price	Total
2	33930	Justin A Robinson	ML Mountain Tire	77	\$ 29.99	\$ 2,309.23
3	50470	Tamara Zhu	Patch Kit/8 Patche	238	\$ 2.29	\$ 545.02
4	43580	Nicole White	Road Tire Tube	15	\$ 3.99	\$ 59.85
5	42860	Nancy L Sanchez	Road-250 Red, 48	5	\$ 2,443.35	\$ 12,216.75
6	45800	Reginald Navarro	Sport-100 Helmet,	50	\$ 34.99	\$ 1,749.50
7	14170	Autumn Zhu	Touring Tire	150	\$ 28.99	\$ 4,348.50
8	43580	Nicole White	LL Road Tire	110	\$ 21.49	\$ 2,363.90
9	21840	Denise Mehta	Mountain-200 Bla	18	\$ 2,049.09	\$ 36,883.62
10	50470	Tamara Zhu	Mountain-200 Silv	13	\$ 2,319.99	\$ 30,159.87
11	14170	Autumn Zhu	Touring Tire Tube	23	\$ 4.99	\$ 114.77
12	45800	Reginald Navarro	Touring-1000 Blue	12	\$ 2,384.07	\$ 28,608.84
13					Total	\$ 119,359.85
14						

Looks pretty good but I noticed the Total Row is not an Excel Table Total Row

Clarifying Question for Attempt #2

OP

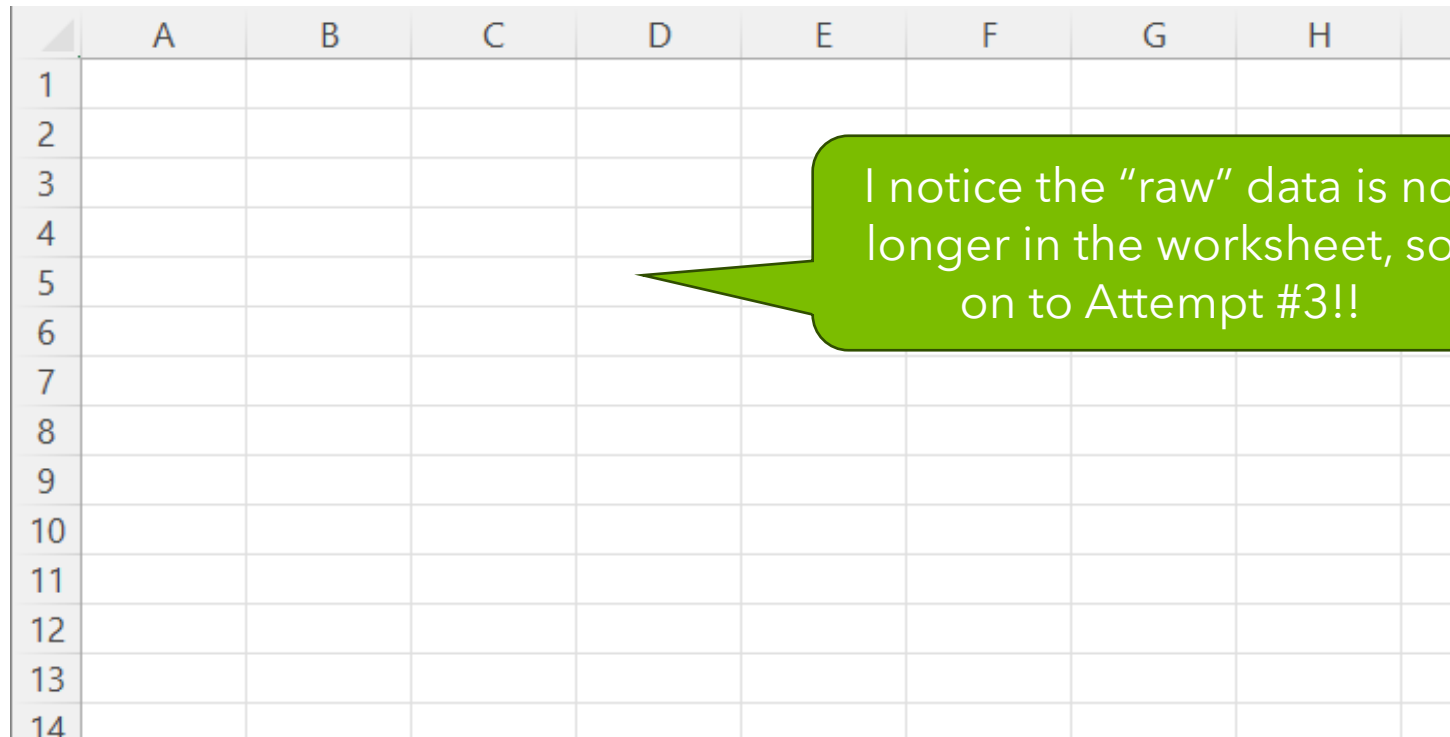
Try again but make the Total Row an Excel Table total row



Certainly, you can use Excel's built-in table features to create a Total Row. Here's the updated code:

```
vba Copy code  
  
Sub AutomateTasksMacro()  
    ' Define source and destination worksheets  
    Dim srcWs As Worksheet  
    Dim destWs As Worksheet  
    Set srcWs = ThisWorkbook.Sheets("AutomateTasksData")  
    Set destWs = ThisWorkbook.Sheets.Add  
    destWs.Name = "AutomateTasksFinal"
```

Then?



An Excel spreadsheet grid with columns A through H and rows 1 through 14. A green callout bubble with a white border is positioned over the grid, pointing to the area between columns D and E and rows 4 and 5. The bubble contains the text: "I notice the 'raw' data is no longer in the worksheet, so on to Attempt #3!!".

	A	B	C	D	E	F	G	H
1								
2								
3								
4								
5								
6								
7								
8								
9								
10								
11								
12								
13								
14								

Pasted into Excel and Ran Macro - End Result #10

	A	B	C	D	E	F	G
1	Cust#	Customer Name	Product Name	Qty	Unit Price	Total	
2	33930	Justin A Robinson	ML Mountain Tire	77	\$ 29.99	\$ 2,309.23	
3	50470	Tamara Zhu	Patch Kit/8 Patches	238	\$ 2.29	\$ 545.02	
4	43580	Nicole White	Road Tire Tube	15	\$ 3.99	\$ 59.85	
5	42860	Nancy L Sanchez	Road-250 Red, 48	5	\$ 2,443.35	\$ 12,216.75	
6	45800	Reginald Navarro	Sport-100 Helmet, Blue	50	\$ 34.99	\$ 1,749.50	
7	14170	Autumn Zhu	Touring Tire	150	\$ 28.99	\$ 4,348.50	
8	43580	Nicole White	LL Road Tire	110	\$ 21.49	\$ 2,363.90	
9	21840	Denise Mehta	Mountain-200 Black, 42	18	\$ 2,049.09	\$ 36,883.62	
10	50470	Tamara Zhu	Mountain-200 Silver, 42	13	\$ 2,319.99	\$ 30,159.87	
11	14170	Autumn Zhu	Touring Tire Tube	23	\$ 4.99	\$ 114.77	
12	45800	Reginald Navarro	Touring-1000 Blue, 46	12	\$ 2,384.07	\$ 28,608.84	
13						\$ 119,359.85	
14							

I continued to have issues and had to start over and continue with clarifying questions until I got the answer I was looking for.

Wrap-Up



Presentation Wrap-Up

ChatGPT or any Generative AI tool is a power tool to use "with" Excel

Provide very specific instructions

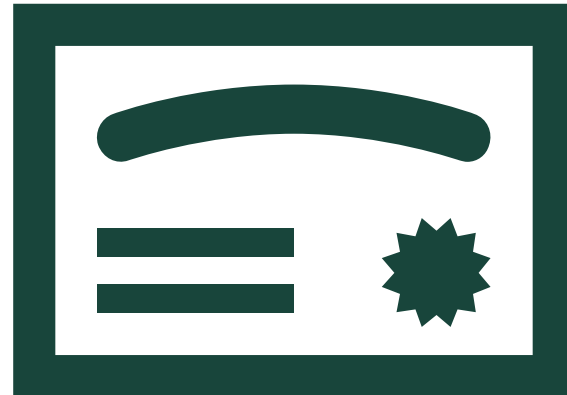
Always thoroughly test the response

A few of the use cases for ChatGPT and Excel are:

- Creating formulas
- Learning Excel
- Automate repetitive tasks

Questions?





Thank You!!



Bryan L. Smith, CPA.CITP, CISA



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ONE FINAL NOTE