



Grok Magic: Turning IT Problems into Possibilities

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The thought process of modern development

Learn to use these new tools and concepts



Agenda

What is Grok and it's Top 10 Features

What about the Hardware and Software

The Business Case for Grok

The Grok Interface

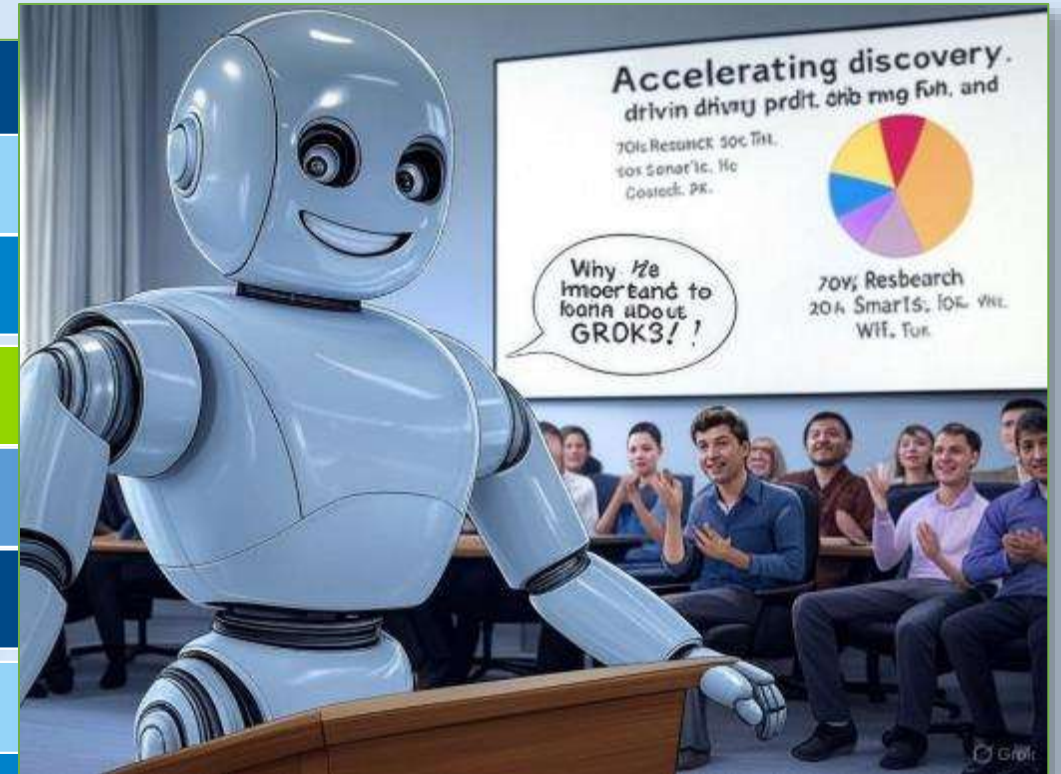
How to use Grok – Prompting Basics

DeepSearch – Real-Time Insights

Think Mode – Problem Solving

Grok Imagine – Image & Video Creation July 2025

Q&A



What is Grok? (Beginner-Friendly Introduction)

Grok, developed by xAI (founded by Elon Musk in 2023), is an AI assistant launched in February 2025, GROK3 February 2025, GROK 4 July 2025

Purpose: Helps businesses and IT teams solve problems, save money, and make faster decisions.

Key Features: Real-time reasoning, DeepSearch (scans web/X data), Think Mode (step-by-step problem-solving), and Aurora (graphics creation).

Nontechnical Explanation: "Grok is your witty sidekick—like JARVIS from Iron Man—that pulls real-time data, solves puzzles step-by-step, and whips up visuals to supercharge your team.

The Top 10 features of Grok

Real-Time Data Access - up-to-date information is a primary draw

DeepSearch Mode - scours the web and X, synthesizing detailed summaries

Think Mode - complex problem-solving

Grok Imagine: Hyperrealistic images and short videos (up to 6 seconds) from text—launched July 2025.

Image Understanding (Grok Vision) – Now handles video clips for dynamic analysis, like spotting trends in customer demo footage and upload files to ask about objects, signs, or documents

The Top 10 features of Grok

Code Assistance - Supports 20+ languages, including Python and JavaScript, RPG for IBM i —debugs legacy code 40% faster per xAI benchmarks."

Document Summarization - upload documents or conversations for Grok to summarize

Conversational Tone with Humor -Grok's witty, rebellious tone, often compared to The Hitchhiker's Guide to the Galaxy

Multimodal Capabilities - ability to handle Text, images, videos, and soon voice for hands-free IT troubleshooting.

Grok Studio for Collaboration - collaborative tasks like writing, coding, and app-building

The Company

xAI is an American artificial intelligence (AI) company founded by Elon Musk on March 9, 2023. It's Mission to "understand the true nature of the universe" and accelerate human scientific discovery.

xAI acquired X in an all-stock deal announced on March 28, 2025. The merger valued xAI at \$80 billion and X at \$33 billion, with a total enterprise value for X of \$45 billion, including \$12 billion in debt

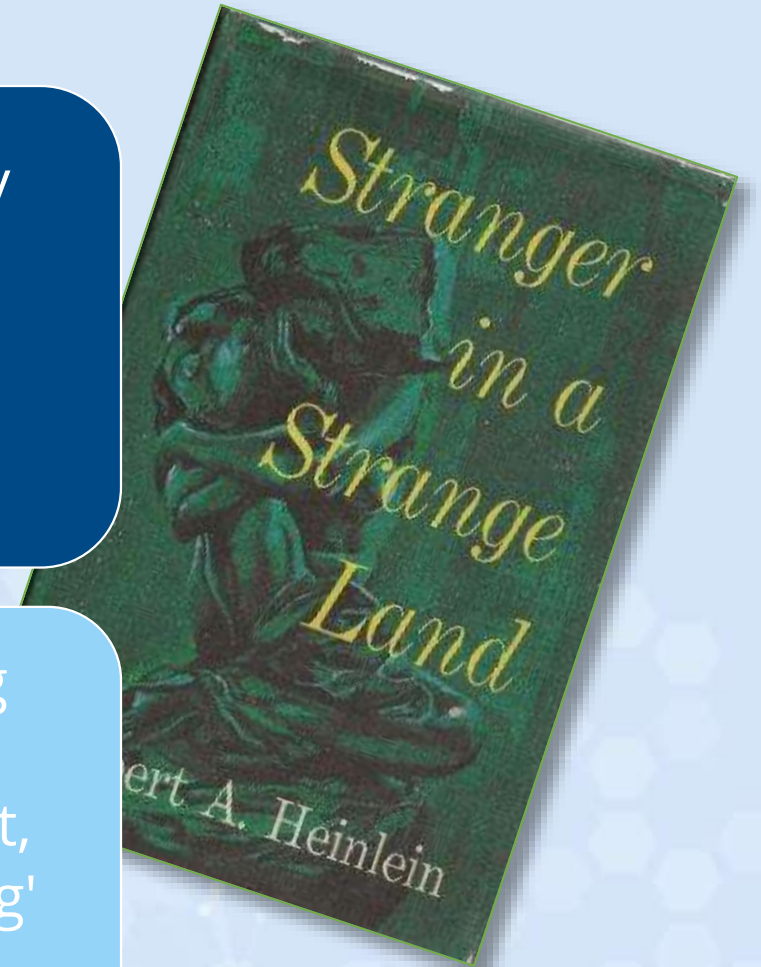
Post-acquisition, Grok now seamlessly integrates X's real-time social data for sharper business insights, like monitoring competitor sentiment live.



Stranger in a Strangeland

Stranger in a Strange Land is a 1961 science fiction novel by the American author Robert A. Heinlein. It tells the story of Valentine Michael Smith, a human who comes to Earth in early adulthood after being born on the planet Mars and raised by Martians

Grok3, released in February 2025. Grok is noted for topping LLM leaderboards, offering advanced reasoning, real-time research (via DeepSearch), and multimodal capabilities (text, images, soon voice). Grok 4 (July 2025) adds 'sentient-feeling' reasoning.



Stranger in a Strangeland

Meaning of "Grok"

The term "Grok" means to deeply and intuitively understand something, often with a sense of empathy or complete comprehension. It implies not just knowing something superficially but grasping it profoundly, as if becoming one with the concept or idea.



How to Estimate Savings - Grok's Disclaimer

Our savings estimates are projections for mid-sized firms (\$20M-\$50M revenue) based on industry benchmarks and Grok 3's performance advantages.

Industry Benchmarks: We use McKinsey (2025) data: 7-20% savings from AI, amplified by Grok 4's 15x compute edge.

Grok's Advantage: Grok 3's 10-15x compute edge over predecessors (per xAI tests) enables faster and more accurate insights, amplifying these savings.

Example Calculation (Supply Chain): A \$20M firm saves 4% (\$800K) on supply chain by cutting delays 50% with Grok 4's video analysis.

Source: "xAI Q3 2025 performance reports.

The Business Case for Grok

Saves Money: Up to \$3M annually in areas like supply chain and market research.

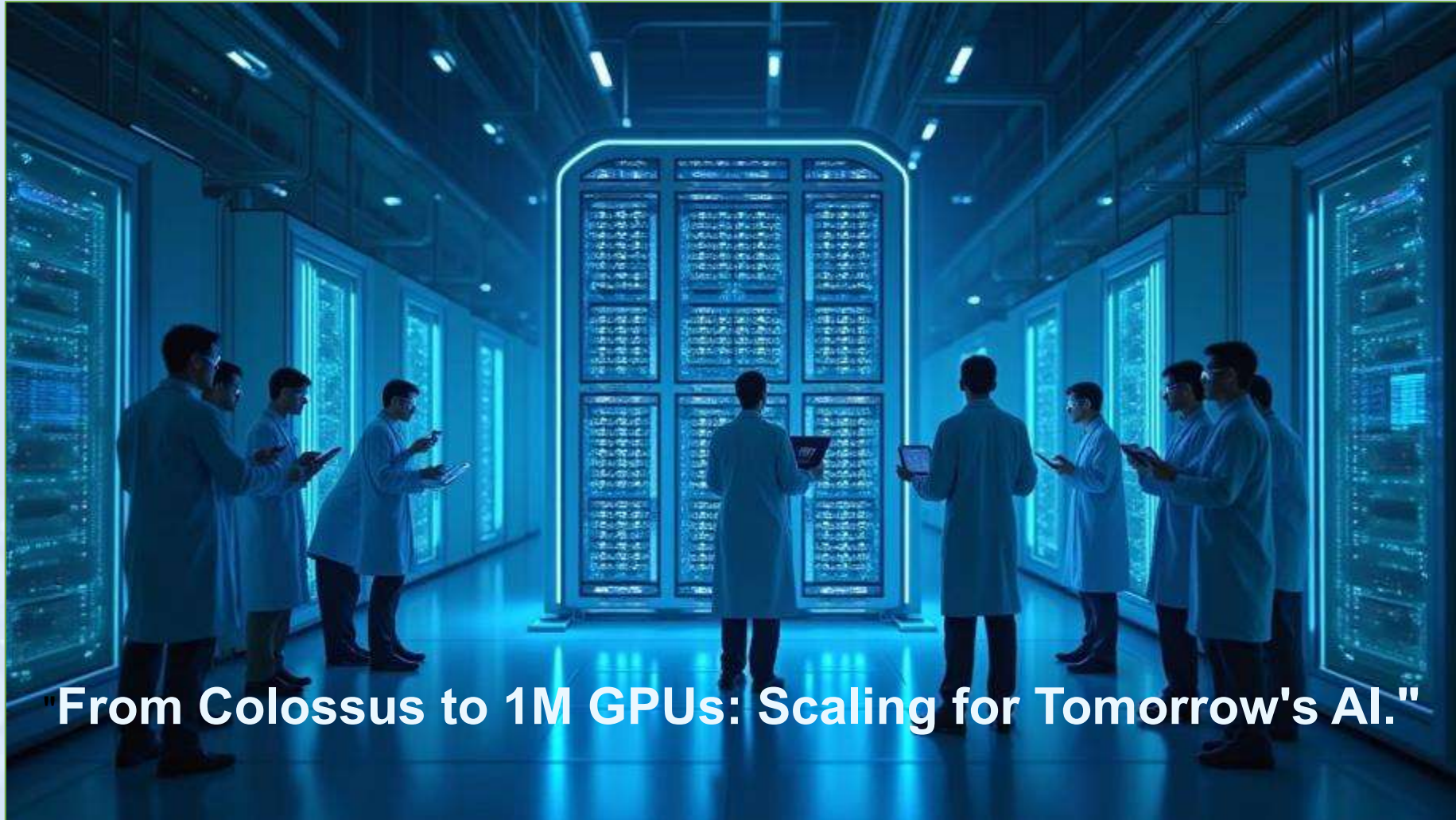
Boosts Efficiency: 40%-60% faster decisions for tasks like supply chain optimization and customer support.

Drives Revenue: Up to \$1.5M in sales growth by spotting trends and improving customer satisfaction.

Cost-Effective: Starts at \$22/month (Grok 3 free tier limited); SuperGrok/Premium+ unlocks Grok 4.

2025 ROI: 700-900% over 3 years, per Forrester."

Powering Grok: Hardware That Delivers



"From Colossus to 1M GPUs: Scaling for Tomorrow's AI."

The Colossus Advantage

Hardware That Means Business

- **Location:** Memphis, TN—xAI's profit engine
- **Growth:** "Built in 122 days (world record, now expanding to Colossus 2 (Sept. 2025)).
- **Scale:** 200,000 Nvidia H100 GPUs, with roadmap to 1M GPUs by mid-2026
- **Speed:** "100+ exaFLOPs post-expansion
- **Impact:** Handles 20M+ queries/day for instant ROI
- **Grok 4's edge:** 2x faster than rivals like GPT-5 previews.

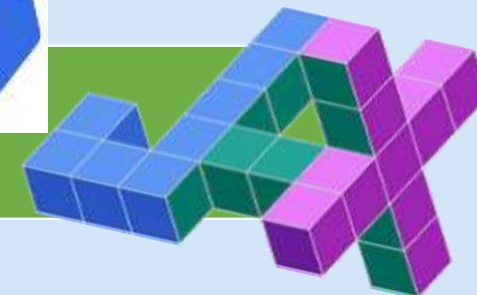
Hardware Specs for Success

Title: Inside the Money Machine

- Named after Navy Rear Admiral Grace Hopper
- GPUs: H100s—4 petaFLOPs each, 200K total
- **Networking:** 400 Gbps, no delays in data flow
- **Cooling:** Liquid system, 250 MW, runs 24/7
- **Future-Proof:** Upgrading to H200/Blackwell GPUs (Q4 2025) for 6 petaFLOPs each—future-proof for Grok 5 (2026)
- **Powers real-time** video processing without lag.
- **Uptime:** 99.9%—no downtime, no lost revenue



Software Built for Profit



The Brains Behind the Gains

- xAI Stack:
- **Kubernetes:** Manages resources for max efficiency
- **Rust:** Fast, reliable—30% better than rivals
- **JAX:** Doubles compute power for quicker wins
- **Real-Time:** X + web data keeps you current
- **Scale:** 20M+ daily queries enterprise-ready with API access
- **Grok 4 adds** native tool-calling (e.g., auto-run code snippets) 30% faster IT workflows."

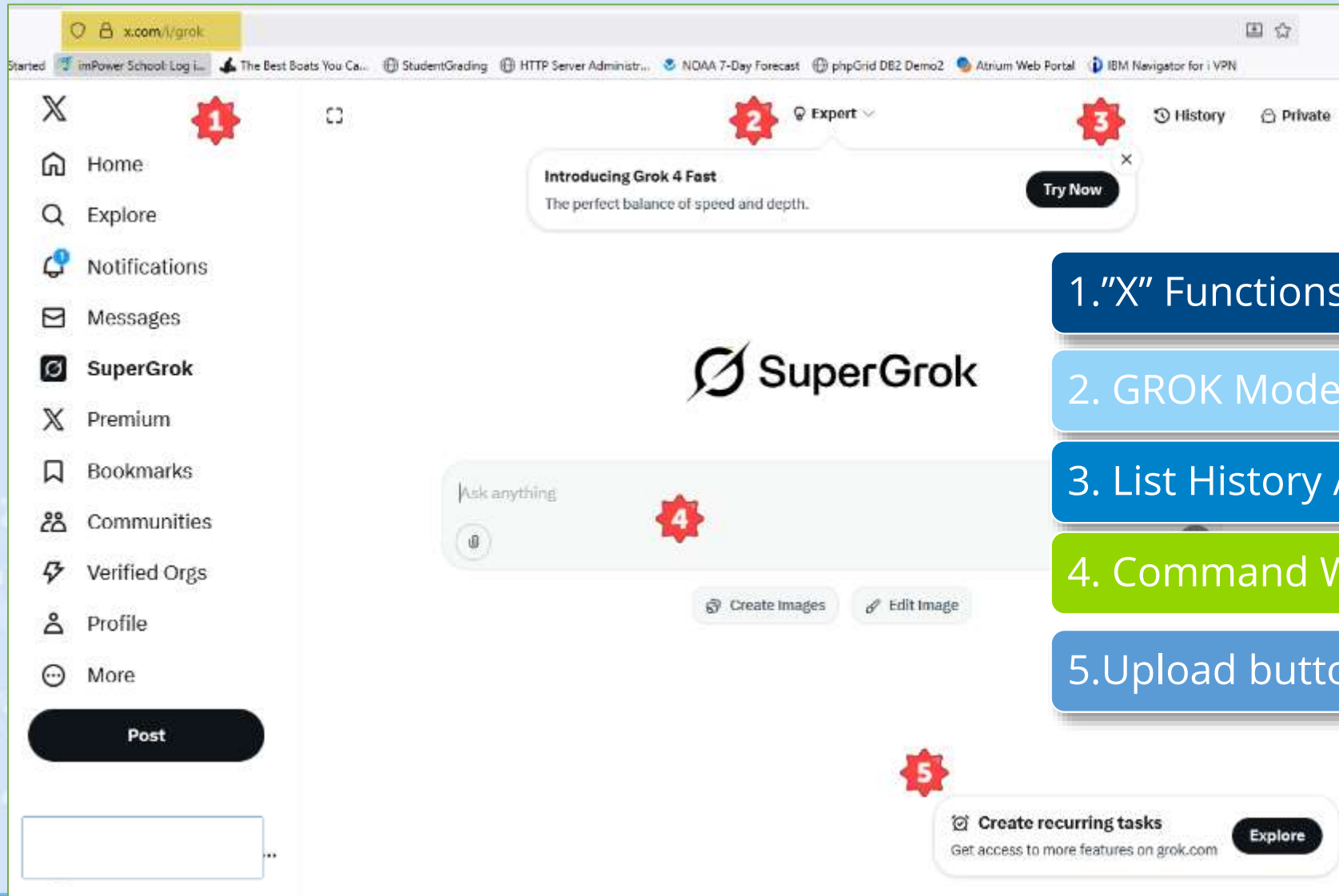


Grok's Knowledge Base

Grok's knowledge is continuously refreshed:.

- Updates occur regularly, potentially daily or more frequently, unlike models with static knowledge bases that may be outdated by a year or more.
- Grok4 is designed to provide **real-time information** and has no specific knowledge cutoff date.
- DeepSearch pulls live data—e.g., today's X trends or news."
- Grok4 enhances with video/live stream integration for instant insights."

Grok Web Interface (x.com)



1. "X" Functions

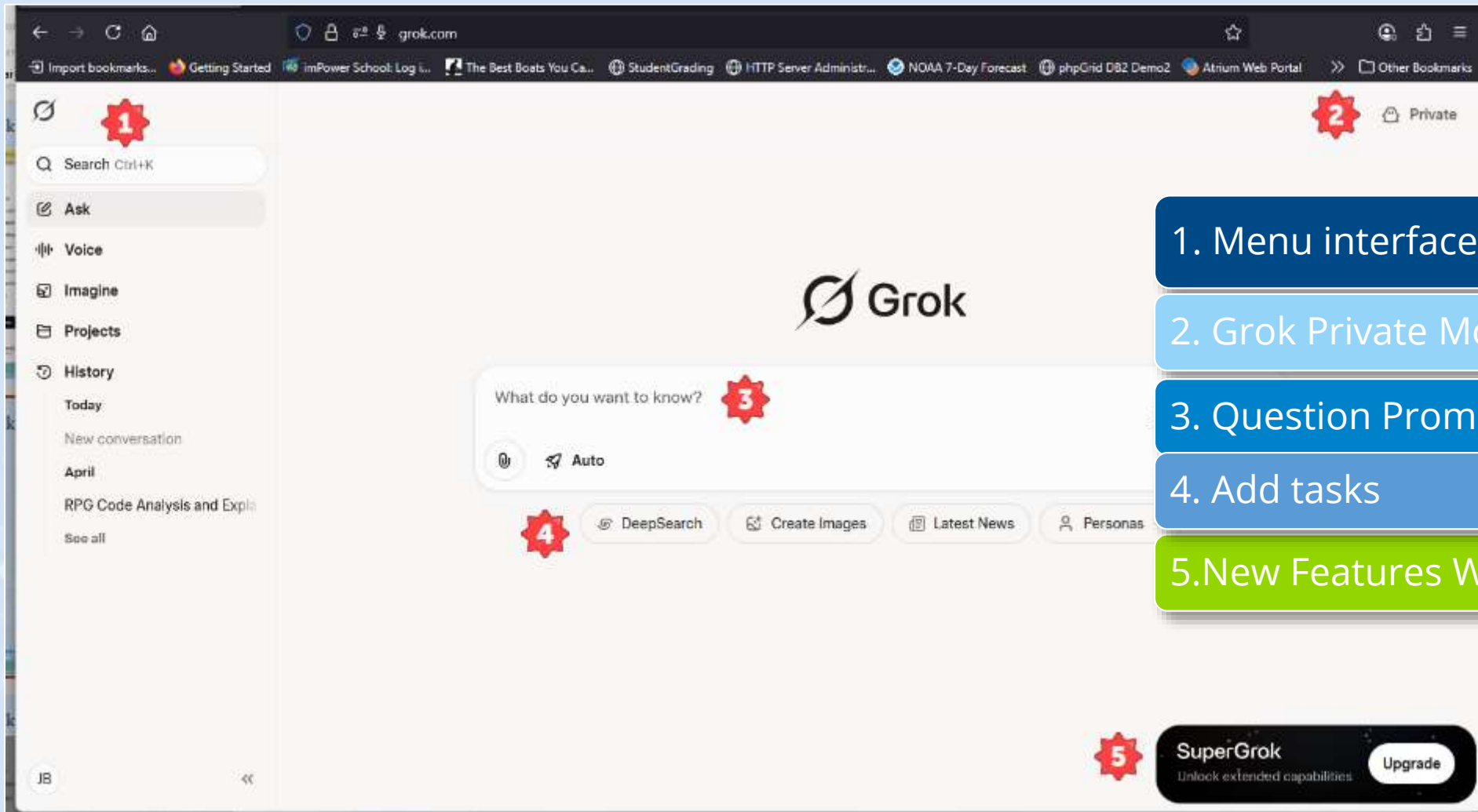
2. GROK Modes

3. List History / Private conversation

4. Command Window

5. Upload button & Direct links

Grok Web Interface (GROK.com)



1. Menu interface view from Grok

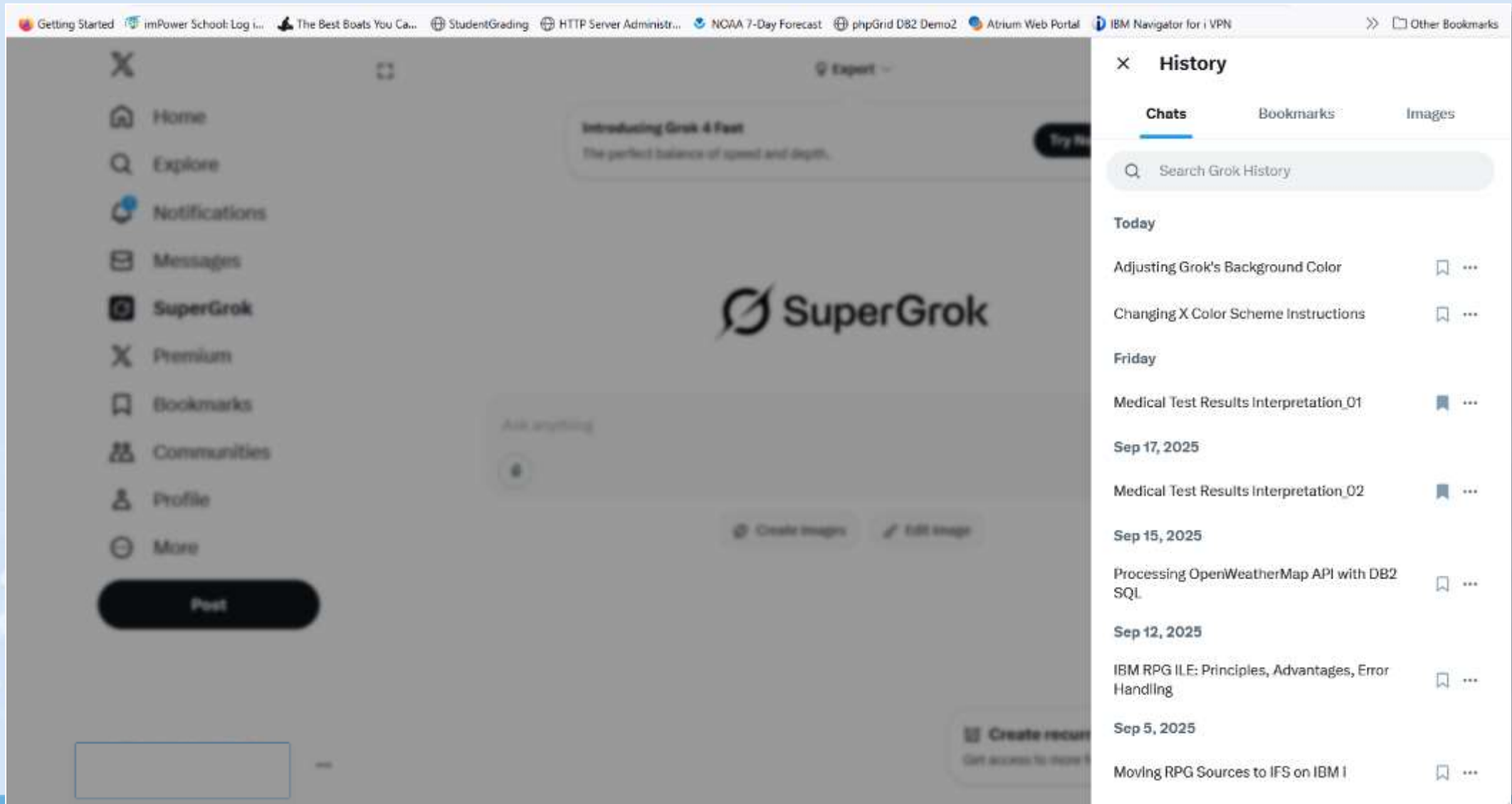
2. Grok Private Mode

3. Question Prompt Windows

4. Add tasks

5. New Features Window

Grok Web Interface



How to Use Grok – Prompting Basics



Prompting Basics – Getting Started with Grok

What is a Prompt? A question or instruction you give Grok to get answers or insights.

Prompt Order: Start broad to get an overview, then get specific to dig deeper.

Nontechnical Explanation: “Prompting is like giving Grok a task—be clear and specific to get the best results.”

- **Access Grok:** Log into the Grok platform (e.g., via xAI’s website or app).
- **Enter a Prompt:** Type your question or instruction in the chat interface.
- **Select Mode:** Auto for quick hits, Expert for deep dives (Grok 4 exclusive).
- **Review the Output:** Grok will respond in seconds—read the answer and ask follow-up questions if needed.
- **Refine Your Prompt:** If the answer isn’t clear, rephrase your prompt to be more specific.

Keys to Successful Prompting

Be Clear and Specific

- **Why:** Clear prompts reduce ambiguity, helping the AI understand exactly what you want.
- **How:** Use precise language and include relevant details. Avoid vague terms or assumptions.
- **Example:** Instead of "Tell me about cyber attacks," say, "List the types of cyberattacks attacks in the US from Sept. 01 to Nov. 14, 2025, with examples."

Provide Context

- **Why:** Context helps the AI tailor its response to your needs, especially for complex or niche topics.
- **How:** Mention the purpose, audience, or specific constraints (e.g., time frame, location).
- **Example:** "I'm researching recent US cyber threats for a report. List five cyber attack types from the last 30 days with brief descriptions."

Keys to Successful Prompting

Use Structured Formats

- **Why:** Structured prompts guide the AI to organize its response clearly, making it easier to read or act on.
- **How:** Request lists, tables, or step-by-step answers when appropriate.
- **Example:** "Provide a table of five cyber attacks in the US from the last 30 days, including date, type, and organization affected."

Keys to Successful Prompting

Describe the Depth, Tone & Use required

- **Why:** Specifying tone (e.g., formal, casual) and depth (e.g., brief, detailed) aligns the response with your expectations.
- **How:** Explicitly state the tone or level of detail needed.
- **Examples:**
 - **Depth** - "Give a concise, formal overview of ransomware attacks in the US over the last 30 days, focusing on impacts."
 - **Tone** - Explain quantum computing like I'm a busy CEO—humorous and under 200 words.
 - **Use** – Format for use with Word or CSV application

Keys to Successful Prompting

Iterate and Refine

- **Why:** If the response isn't perfect, refining your prompt based on the output improves results.
- **How:** Clarify unclear parts, add missing details, or adjust scope in follow-up prompts.
- **Example:** If the AI lists only three attack types, follow up with, "Add two more cyber attack types from the same period with sources."

These basics will enhance the accuracy and relevance of responses,

- Test your prompts with small variations to see what yields the best results,
- Avoid overloading with too many requests at once to maintain focus.

Prompting for IT Teams

IT-focused prompts help solve technical problems like cybersecurity threats or code debugging.

Benefit: Reduces downtime by 30%, saving up to \$750K annually, and prevents breaches, saving up to \$700K.

How-To:

- **Identify Your IT Problem:** Choose a specific issue (e.g., a cybersecurity threat or code error).
- **Craft a Clear Prompt:** Be precise about what you need.
- **Enter the Prompt:** Debug this RPG snippet for IBM i: [paste code]—suggest modular fixes..
- **Analyze the Output:** Review Grok's response for actionable insights.
- **Act on the Insights:** Use the output to address the issue.
- **Follow Up if Needed:** Ask for more details if necessary.

Prompting for Business Teams

Business-focused prompts help with market research and customer insights.

Benefit: Spots trends 60% faster, driving up to \$1.5M in sales growth, via Grok 4 video analysis of market clips.

How-To:

- **Define Your Business Goal:** Identify what you need (e.g., market trends or customer feedback analysis).
- **Write a Specific Prompt:** Include key details like time frame or focus area.
- **Enter the Prompt:** Type it into Grok 4's chat interface.
- **Review the Output:** Look for actionable insights.
- **Take Action:** Use the insights to inform decisions.
- **Follow Up for Details:** Ask for more specifics if needed.

Expert – Real-Time Insights



Processing modes

Auto: Automatically selects Fast or Expert mode based on query needs.
Benefits: Adapts automatically, balancing speed and depth for efficient answers.

Fast: Provides quick responses with minimal processing.
Benefits: Ideal for urgent queries, delivering instant answers.

Expert: Performs deeper thinking and thorough analysis.
Benefits: Perfect for complex questions, offering quality insights.

Grok 4 Fast: Grok 4 emphasizing fast performance. ; Grok 5 Preview (2026 beta)." Add: "Expert now includes video search for richer insights. Benefits: Combines advanced features with fast responses for early testing.

Using Grok for IT and Business

How-To:

- **Choose Your Research Need:** Decide what data you need (e.g., IT threats or competitor data).
- **Craft a DeepSearch Prompt:** Be specific about the data source and time frame.
- **Enter the Prompt:** Type it into Grok.
- **Analyze the Output:** Look for trends, sources, and actionable insights.
- **Follow Up for More Details:** Ask for specifics if needed.
- **Apply the Insights:** Use the data to make decisions.

Using Grok for IT and Business – Research

1. Grok Prompt

2. Response

3. Web Pages

⚡ Fast ▾

1

does the US government produce a report summarizing the types and numbers of cyber attacks against us companies every year

The U.S. government does not produce a single, comprehensive annual report specifically summarizing the types and numbers of cyberattacks against U.S. companies. However, various government agencies, such as the Federal Bureau of Investigation (FBI) through its Internet Crime Complaint Center (IC3), the Cybersecurity and Infrastructure Security Agency (CISA), and the Government Accountability Office (GAO), collect and publish data on cyberattacks, including those affecting private companies. These reports often include statistics on incidents, types of attacks (e.g., ransomware, phishing), and financial impacts, but they are not exclusively focused on companies and may cover government entities as well.

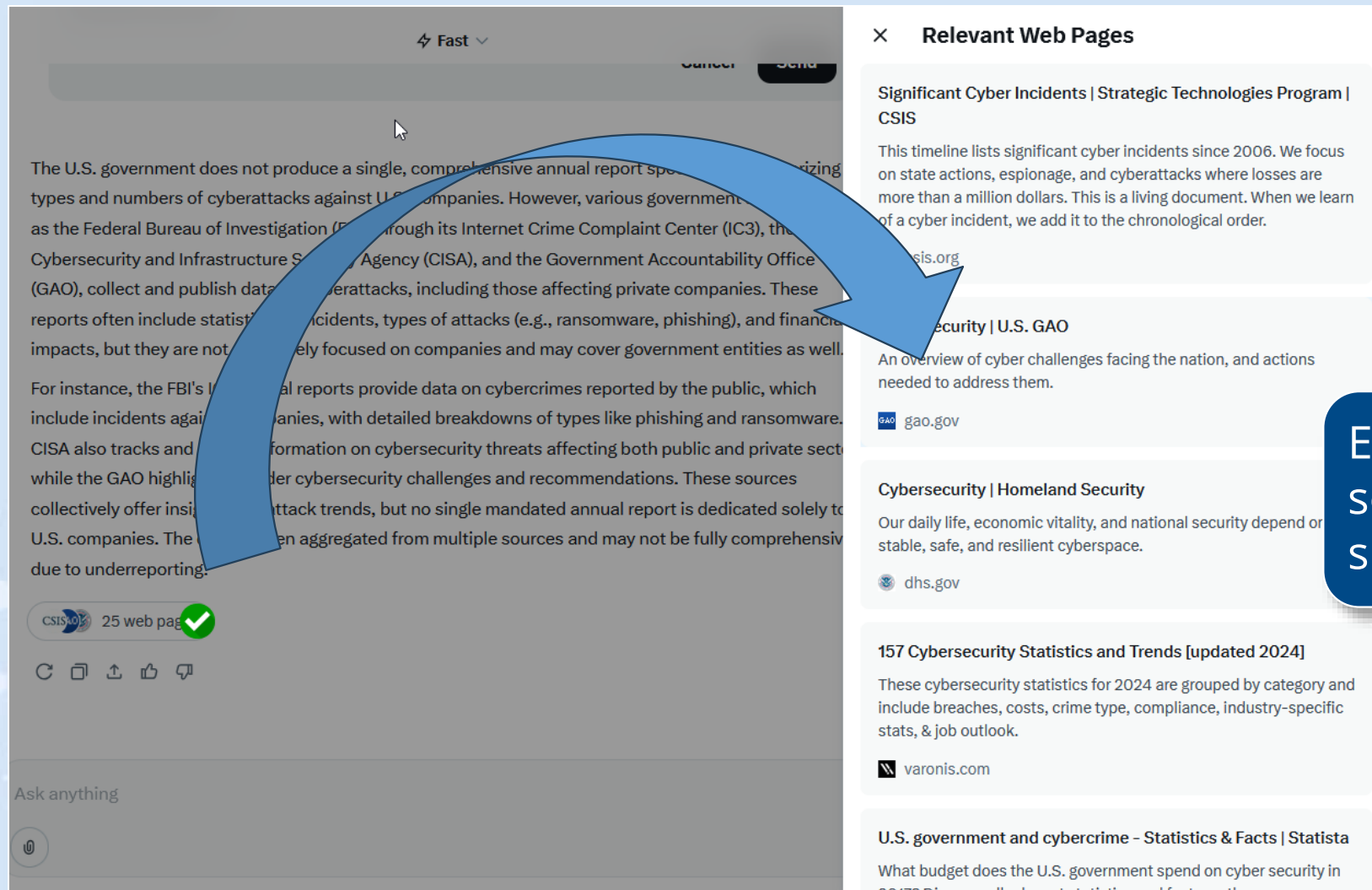
For instance, the FBI's IC3 annual reports provide data on cybercrimes reported by the public, which include incidents against companies, with detailed breakdowns of types like phishing and ransomware. CISA also tracks and shares information on cybersecurity threats affecting both public and private sectors, while the GAO highlights broader cybersecurity challenges and recommendations. These sources collectively offer insights into attack trends, but no single mandated annual report is dedicated solely to U.S. companies. The data is often aggregated from multiple sources and may not be fully comprehensive due to underreporting.

CSISAO 25 web pages

2

↻ 📄 ⬆️ 👍 🗨️

Using Grok for IT and Business – Research



The screenshot displays the Grok AI interface. On the left, a search result snippet is visible, discussing the U.S. government's lack of a single, comprehensive annual report on cyberattacks. A large blue arrow points from this snippet to a panel on the right titled "Relevant Web Pages". This panel lists several sources:

- Significant Cyber Incidents | Strategic Technologies Program | CSIS**
This timeline lists significant cyber incidents since 2006. We focus on state actions, espionage, and cyberattacks where losses are more than a million dollars. This is a living document. When we learn of a cyber incident, we add it to the chronological order.
csis.org
- Cybersecurity | U.S. GAO**
An overview of cyber challenges facing the nation, and actions needed to address them.
gao.gov
- Cybersecurity | Homeland Security**
Our daily life, economic vitality, and national security depend on a stable, safe, and resilient cyberspace.
dhs.gov
- 157 Cybersecurity Statistics and Trends [updated 2024]**
These cybersecurity statistics for 2024 are grouped by category and include breaches, costs, crime type, compliance, industry-specific stats, & job outlook.
varonis.com
- U.S. government and cybercrime - Statistics & Facts | Statista**
What budget does the U.S. government spend on cyber security in 2023?

At the bottom left of the interface, a status bar indicates "25 web pages" with a green checkmark icon. Below this, there are icons for refresh, copy, share, like, and a chat bubble. The bottom of the interface features a text input field labeled "Ask anything" and a microphone icon.

Easily see the webpages searched with content summaries

Using Grok for IT and Business – Marketing

1

Expert

2

Create a report that outlines a comprehensive joint marketing plan for Great Lakes Yacht Sales (GLYS) and Kenosha Community Sailing Center (KCSC) in Kenosha, Wisconsin, focusing on outreach to the local community. The plan emphasizes GLYS's slip rentals and boat sales, and KCSC's sailing lessons and rentals (including kayaks, paddle boards, and pedal boats), while explicitly avoiding references to Kenosha Yacht Club and Southport Marina. Include an implementation plan for 2026 sailing season starting in November 2025

Thought for 45s

3

Comprehensive Joint Marketing Plan for Great Lakes Yacht Sales and Kenosha Community Sailing Center

Executive Summary

This joint marketing plan outlines a collaborative strategy between Great Lakes Yacht Sales (GLYS) and

Quick Answer

1. Select Expert

2. Submitted Prompt - Editable

3. Expand "Thought for 45 secs"

4. Next Page

Using Grok for IT and Business – Marketing

 Expert 

 Thought for 45s 

Planning the report

- The report needs a comprehensive joint marketing plan for Great Lakes Yacht Sales and Kenosha Community Sailing Center.
- Focus on outreach to the local Kenosha community, emphasizing GLYS's slip rentals and boat sales.
- Include an implementation plan starting November 2025 for the 2026 sailing season.
- Let's search for more details on GLYS and KCSC to make the plan realistic.

 Searched for "Great Lakes Yacht Sales Kenosha Wisconsin"

 glysync.com  facebook.com  boattrader.com  yelp.com

 Searched for "Kenosha Community Sailing Center"

 kenoshasailing.org  facebook.com  visitkenosha.com  travelwisconsin.com

- Both companies share the same address at 443 50th Street, Kenosha, WI, suggesting they're co-located.

Exploring website details

- Maybe browsing their websites will give more insights into services and events.

 Browsed glysync.com

 Quick Answer 

Think Mode (Expert) - Step-by-Step System Design.



Using GROK for IT system design

How-To:

- **Identify Your Problem:** Choose a specific challenge (e.g., system optimization for IT, design for new system).
- **Craft a Mode Prompt:** Ask for a step-by-step solution.
- **Enter the Prompt:** Type it into Grok.
- **Follow the Steps:** Review Grok's reasoning and implement each step.
- **Verify the Solution:** Check if the solution works and ask for adjustments if needed.

Using Expert Mode for System Design

Grok 3

1

"Design a DB2 database schema for an e-commerce platform that supports products, users, orders, and reviews. Explain the tables, relationships, and indexes needed for scalability to handle millions of users."

Thought for 1m 46s

2

Expand for details

Below is a detailed design for a DB2 database schema tailored for an e-commerce platform that supports products, users, orders, and reviews. This schema is crafted to ensure scalability for millions of users by defining appropriate tables, relationships, and indexes. I'll explain each component clearly and concisely.

3

Tables

The schema consists of five core tables to manage users, products, orders, order details, and reviews. Each table includes columns suited for an e-commerce platform, with data types compatible with IBM DB2.

1. Users Table

- **Purpose:** Stores user account information for authentication and tracking.
- **Columns:**
 - `user_id` (BIGINT, Primary Key): Unique identifier for each user.
 - `username` (VARCHAR(50), Unique): User's chosen username.
 - `email` (VARCHAR(100), Unique): User's email address.
 - `password_hash` (VARCHAR(255)): Hashed password for security.
 - `created_at` (TIMESTAMP): Account creation timestamp.

Ask anything

DeepSearch

Think

Edit Image

1. Previously Entered Prompt (editable)

2. Expand to see thought process

3. Detailed Results

Grok – Graphics Creation (Previously Aurora)

*Fun
Stuff!!*



Grok Imagine: xAI's image/video generator

Is an advanced AI image generation model developed by xAI, integrated into the Grok chatbot on the X platform.

- **Photorealistic Image Creation:** Imagine excels at generating highly realistic images from text prompts, trained on billions of internet examples for a deep understanding of visual details.
- **Multimodal Capabilities:** It supports text-to-image and image-to-image editing, allowing users to create or modify images by describing desired changes, such as adding elements to existing visuals.
- **Minimal Restrictions:** Has fewer content limitations compared to other models, generating images of public figures and copyrighted characters, avoids producing explicit nudity.
- **Latest:** Now creates 6-sec animated clips (July 2025); supports NSFW 'Spicy Mode' for Premium+ (Aug 2025). Fewer restrictions, but no explicit content.

Grok Imagine: xAI's image/video generator

Current Modes:

- **Normal:** Polished, high-quality results.
- **Fun:** Playful or humorous effects.
- **Custom:** Detailed prompt-based fine-tuning.
- **Spicy:** Adult-oriented or bold creativity (Premium+ users only).

Current Key Capabilities:

- **Text-to-Image/Video:** Generate from descriptive prompts.
- **Image-to-Image/Video:** Edit or animate existing images.
- **Video-to-Video:** Remix or enhance footage with new styles.
- **Voice-Synced Video:** Added in v0.9 for better audio-visual alignment.
- **Multimodal Inputs:** Use text, images, or voice for outputs.
- **Resolution and Speed:** High-res images (e.g., 4K videos possible); generation in 30 sec or less.
- **Restrictions:** Minimal content limits compared to rivals but avoids explicit nudity; "Spicy" mode for edgier (non-explicit) content.

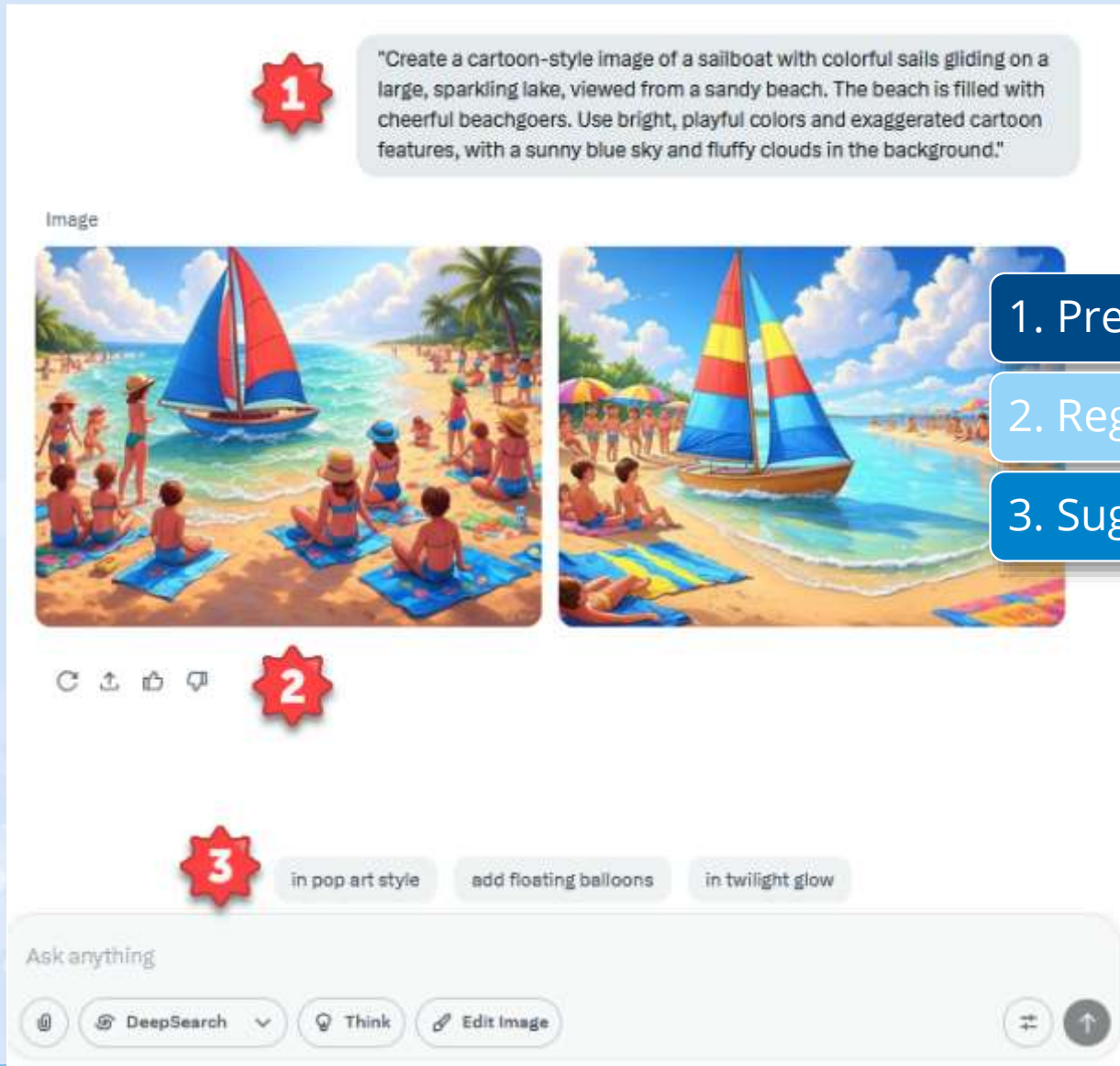
Grok – Graphics Creation:

How-To:

- **Define Your Visual Need:** Decide what graphic you need (e.g., a marketing banner). **Craft an Aurora Prompt:** Describe the image and style.
- **Enter the Prompt:** Type it into Grok. - *in fun mode using spicy style a create a graphic showing the IBM i ruling over a data centers computer room with full of servers*
- **Review the Image:** Check the generated image for quality.
- **Edit the Image:** Ask for changes if needed.
- **Use the Image:** Download the image and use it in your materials.



Grok – Graphics Creation Sample



1. Previously Entered Prompt (editable)

2. Regenerate, Download Like or Dislike

3. Suggestions

What Styles are available?

Most Popular Styles for Business Use:

- **Photorealistic:** A detailed image of a luxury watch on a velvet background, perfect for an e-commerce product listing, showcasing every scratch-free surface.
- **Minimalistic:** A sleek, monochrome logo of a coffee cup with clean lines, ideal for a café's branding or social media profile.
- **Pop Art:** A vibrant, Warhol-style poster of a smartphone in neon colors, great for a tech ad campaign.
- **Cyberpunk:** A neon-lit cityscape with a glowing company logo, suited for a tech startup's promotional banner.
- **3D Animated:** A cheerful 3D cartoon barista waving, used for a coffee shop's animated ad.
- **Impressionistic:** A soft, Monet-like painting of a storefront, enhancing a boutique's upscale marketing.

Note: 5 Listed (14 total); additional styles are constantly added

Short Video With a Simple Prompt

Best done on your phone or tablet!

Prompt Used:

Using Grok Imagine, generate a 4-second video of a futuristic IBM i dashboard in cyberpunk style.



Short video with a extended Prompt

Imagine a rain-soaked neon night in a megacity. The camera dives through holographic billboards into a dark server room lit only by electric cyan and magenta glows. Suddenly, massive floating 5250 green-screen panels materialize — classic IBM i WRKACTJOB, WRKSYSSTS, and DSPSYSSTS displays, but rendered as translucent holographic glass with glitchy scanlines and dripping digital rain in Japanese katakana. Neon-green text scrolls at impossible speed. Holographic job queues pulse like heartbeats. Electric arcs jump between panels. The camera flies through the WRKACTJOB list as rows explode into particle effects, revealing a glowing IBM Power Systems core beneath. Subtle VHS distortion, chromatic aberration, and a low synthwave bass thrum. Ends with a final glitch revealing the iconic IBM i logo formed from pure neon circuitry

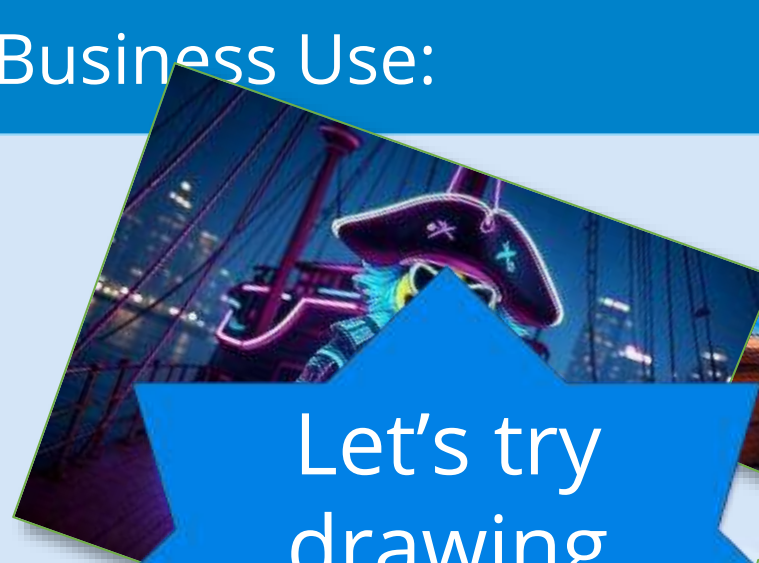
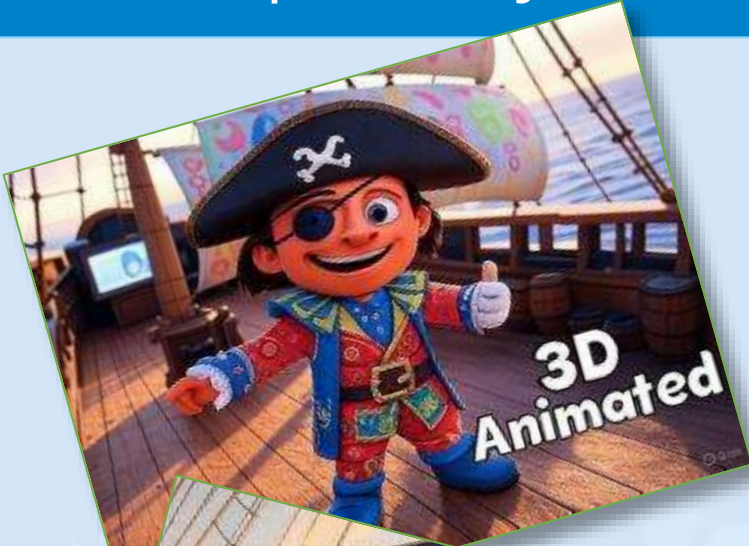


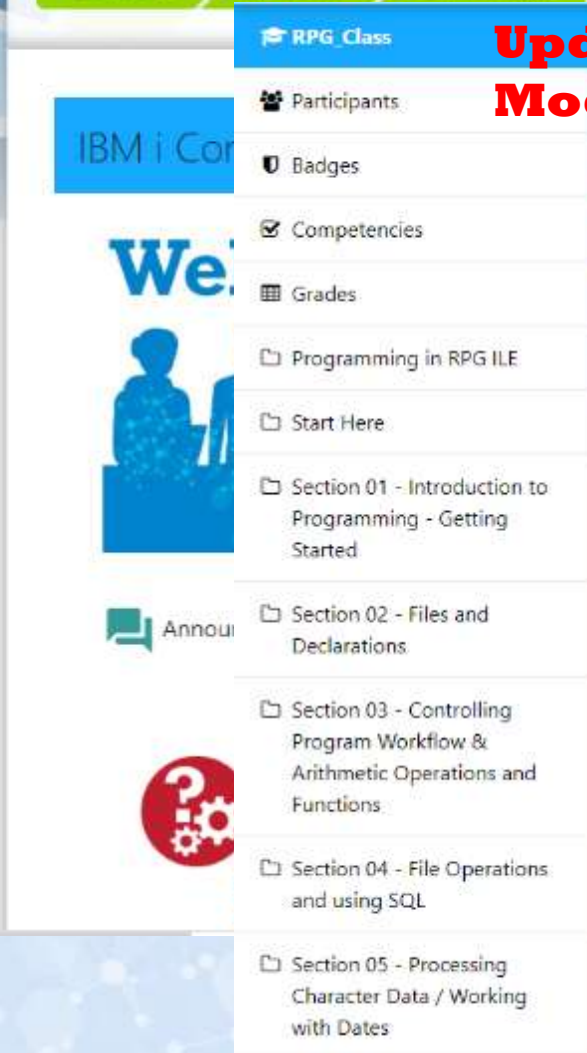
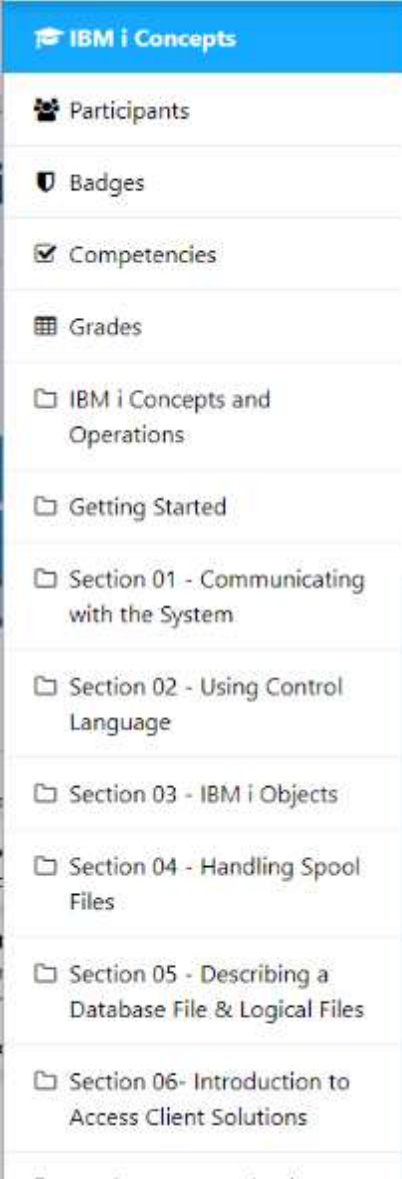
Quick Comparison GROK vs Claude

Feature	Grok 4 (xAI)	Claude 3.7 (Anthropic)	Winner for Business/IT Users
Latest Model	Grok 4 (July 2025)	Claude 3.7 Opus/Sonnet (Oct 2025)	Slight edge Grok
Pricing / Access	Free limited • Full: X Premium+ (~\$16-22/mo)	Free limited • Pro/Team \$20+/mo	Grok cheaper
Real-Time Data	Native DeepSearch + full X firehose	Web search (slower, filtered)	Grok clearly better
Censorship	Minimal, truth-seeking	Heavy safety layer, often refuses	Grok (less restricted)
Image/Video Generation	Grok Imagine – images + short videos	None	Grok only option
Coding Ability	Excellent, fast, real-world code	Top benchmark, great explanations	Near tie (Claude slight edge on pure logic)
Context Window	128k tokens	200k tokens	Claude
Speed	Extremely fast (Colossus cluster)	Fast	Grok
Personality	Witty, fun, sarcastic	Polite, corporate	Grok (more engaging)
Best For	Real-time insights, creatives, social monitoring, fast iteration	Regulated industries, long documents, pure reasoning	Grok for most mid-size businesses

What Styles are available?

Most Popular Styles for Business Use:





Updated Workshop Modern IDE's & RPG Modular Programming

Programming in ILE RPG

Dashboard > My courses > RPG_Class

Programming in RPG ILE

Your progress

Welcome!

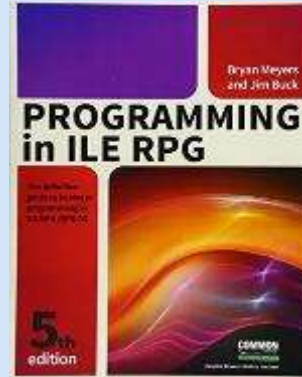


Announcements

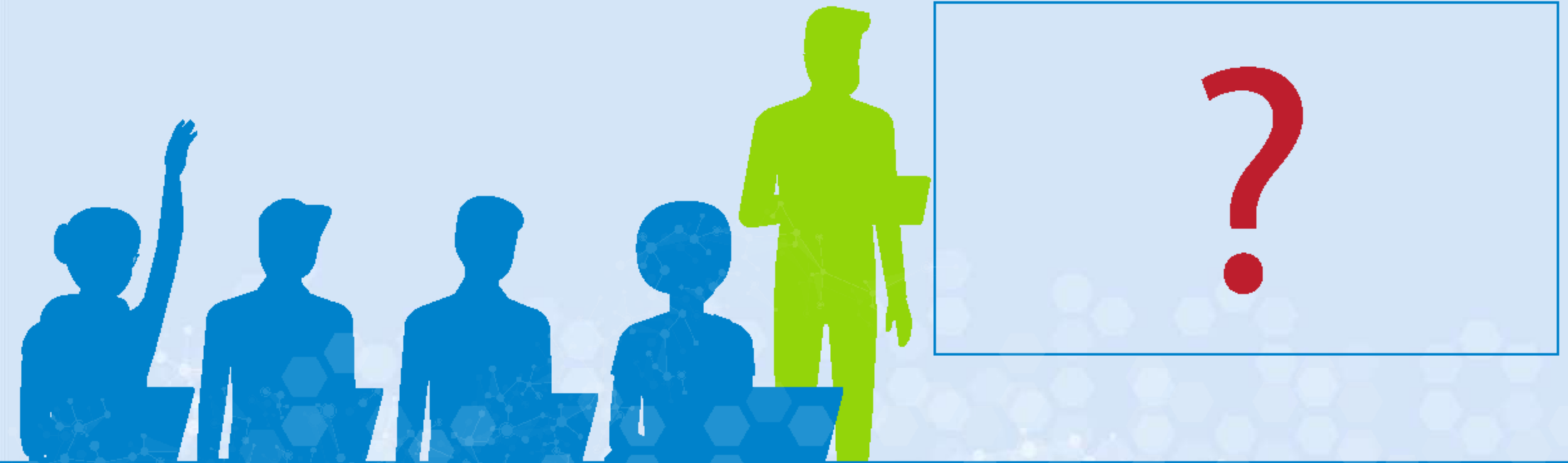
General news and announcements



How To Course



Complete online Classes
Based on my textbooks
Includes numerous Videos,
Quizzes, Sample programs & and program assignments



Any Questions or Comments?