

DAY 1

What Is Prompt Engineering?

Prompt Engineering is the art and science of crafting effective inputs (called prompts) that guide AI systems—like ChatGPT or Claude—to generate relevant, accurate, and useful responses. Instead of giving vague commands, prompt engineers design clear, structured instructions so the AI knows exactly what's expected.

Why Does It Matters?

In today's AI-driven world, prompt engineering is the bridge between human intention and machine output. Whether you're using ChatGPT, Claude, or any other language model, how you ask determines what you get. A strong prompt can unlock powerful insights, while a weak one can lead to vague, irrelevant, or misleading results.

Here's why it matters:

- ❖ Get Better Results
- ❖ Save Time & Cost
- ❖ Boost Productivity & Creativity
- ❖ Essential for AI-First Careers
- ❖ Gain Control Over Output
- ❖ Supercharge AI Tools

Real-World Use Cases

1. Healthcare - Generate patient-friendly summaries of complex medical reports.
2. Finance - Draft quarterly investment memos or stock-analysis bulletins.
3. E-Commerce - Write product description.
4. Marketing Research - Analyze social-media sentiment and propose brand strategies.

5. Legal - Produce concise clauses or explain legalese in plain English.

6. Education - Summarize topics, generate quizzes.

7. Chatbots - Create smart interactions.

Anatomy of a Great Prompt

Every robust prompt includes:

- ❖ Objective - What outcome are you seeking?
- ❖ Context - provides background info or data snippets.
- ❖ Structure - Desired format (bullets, short paragraphs, tables).
- ❖ Limits - Word count, tone, style guidelines.
- ❖ Voice - Persona or expertise level (e.g., “You are a UX researcher…”).
- ❖ Clear - Easy to understand; avoid ambiguity.
- ❖ Specific - Focused and goal-oriented.

Prompt Writing Formula

[Instruction] + [Context] + [Format] + [Constraints] + [=][Role]

Example:

“As a UX researcher, draft three user-testing tasks for a mobile shopping app. Use bullet points and keep each under ten words.”

Types Of Prompt Engineering

1. Instructional Prompts: Directly tell the AI what to do.

Example: “List five eco-friendly habits for remote workers.”

2. Role-Based Prompts: Assign a person or voice to the AI

Example: “You are a financial advisor. Recommend a conservative retirement portfolio.”

3. Few-Shot Prompts: Give 1-2 examples of the task and ask the AI to continue.

Example: Q: Define 'blockchain.' A: A distributed digital ledger.

Q: Define a 'smart contract.' A: Self-executing code on a blockchain.

Q: Capital of Japan? A: Tokyo.

4.Zero - Shot Prompts: Give a task without any examples.

Example: "Compose a limerick about a weekend road trip."

5.Chain-of-Thought Prompts: Ask the AI to reason step-by-step.

Example: "If a bookstore sold 120 books at \$8 each and then gave a 10% discount, what's the total revenue? Show your work."

6.Constraint-Based Prompts: Add rules like word count, tone, or style.

Example: "Write a tweet about our summer sale under 15 words, using a fun tone."

7.Reframing Prompts: Improve vague prompts by adding clarity and focus.

Example: Vague: "Explain nutrition."

Refined: "Outline three key benefits of a plant-based diet in under 75 words."

Prompt Makeover- Before vs After

Before: "Write something on project management."

After: "You are an Agile coach. Summarize three sprint-planning best practices in bullet form (max 50 words)."

Activity-Prompt Master Challenge

Task:

1.Choose a task:

-Write an apology email for a late delivery

-Generate a blog intro for "Morning Routines for Students"

-Create a quiz on World War II

-Explain AI to a 6th grader

2. Write a prompt for it.

3. Ask ChatGPT:

"Please rate this prompt out of 10 based on clarity, specificity, and effectiveness. Then explain why."

4. Refine your prompt based on the feedback.

Optional Bonus:

Ask ChatGPT to rewrite your prompt and compare the result!

Write an apology email for a late delivery

Prompt: You are a delivery person. Write an apology email for late delivery in a professional and concise manner.

Prompt Rating: 9/10

Refined Prompt:

"As a delivery person, write a professional and concise apology email for a late delivery."

Figure 1.1: Prompt Rating with Refined Prompt

Common Prompt Mistakes:

Overly Broad – "Tell me about technology."

Missing Context – "Generate a summary." (Summary of what?)

No Constraints – AI output runs on indefinitely.

Mixed Instructions – Asking for a long essay and five bullet points in one go.

TIP: Be specific. Give structure. Add purpose.

Pro Prompting Tips

- ❖ Break complex tasks into step-by-step bullets.
- ❖ Specify tone (e.g., “use conversational language”).
- ❖ Give sample output to align formatting.
- ❖ Use numbered constraints (“1. ... 2. ... 3. ...”).
- ❖ Iterate: ask the AI to critique its own draft and refine.

Chat Gpt is only as good as your instructions.

Tools for Prompt Engineers

GitHub Copilot – Code and doc suggestions.

AI21 Studio – Advanced language-model playground.

PromptBase – Marketplace for high-quality prompts.

OpenAI Playground – Advanced testing for prompts.

ChatGPT – General AI assistant.

FlowGPT – Discover community-built prompts.

LearnPrompting.org – Free resources to master prompting.

Prompt Engineering as a Career Skill

Professionals who master prompting can excel as:

- * AI Integration Specialists
- * Content Automation Engineers
- * Digital Product Managers
- * Research Analysts

* Conversational UX Designers

It bridges creative writing, domain expertise, and technical insight.

Key Takeaways

* Prompts Are Interfaces treat them like code: precise and testable.

*Structure + Constraints ensure predictable outputs.

*Seven Techniques let you tailor AI for any task.

*Practice & Feedback seek model ratings and iterate.

*Prompting Is a Marketable Skill in every AI-driven field.

Final thought: The better you prompt, the more reliable and valuable the AI becomes.