

## PROMPT DESIGN AND EXPERIMENTATION

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### ✓ A. BASIC PROMPT CREATION

#### OBJECTIVES

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TEXT summerization

code genration

creative thinking

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## TEXT SUMMRAIZATION PROMPTS

### PROMPT 1

prompt input : The story revolves around a boastful hare and a slow tortoise who engage in a race. One day, the tortoise accepts the hare's challenge to race, much to the hare's amusement.

The Hare and the Tortoise The race begins, and the hare quickly takes a significant lead. Overconfident hare decides to take a nap, believing he has plenty of time to win. Meanwhile, the tortoise continues at his steady pace, slowly but surely making his way toward the finish line. When the hare wakes up, he realises the tortoise is close to winning. Despite his fast sprint, the hare arrives too late, and the tortoise crosses the finish line first. this is story of hare and tortoise,

summarize this story and explain the moral of the story

### OUTPUT 1

Certainly! Here's a summary and moral explanation for the story you shared:

Summary: The story is about a boastful hare and a slow but steady tortoise who decide to race. The hare quickly speeds ahead and, confident of winning, takes a nap during the race. Meanwhile, the tortoise moves steadily without stopping. When the hare wakes up, he rushes to catch up but is too late. The tortoise wins the race by being consistent and persistent.

Moral of the Story: The moral is "Slow and steady wins the race." It teaches us that overconfidence and carelessness can lead to failure, while patience, determination, and consistent effort bring success, even if progress seems slow.

Would you like this in a more formal style or simplified for kids?

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### OBSERVATION

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## - What Worked

### 1. Clear Prompt with Purpose

Your prompt was clear and goal-oriented:

This direct instruction helped guide the model to give you a structured output with two clear parts: a summary and a moral.

### 2. Good Structure in Output

The response followed a logical structure: This kind of structure is useful for educational, reflective, or classroom settings.

### 3. Accurate Interpretation

The AI correctly interpreted the story and moral:

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## - What Didn't Work / Could Be Improved

### 1. Prompt Could Use Punctuation and Clarity

### 2. Missed Opportunity for Personalization or Style Choice

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## - Why These Things Mattered

1. Prompt clarity = better focus and fewer misunderstandings.

2. Tone/style guidance = more personalized or context-fitting responses.

3. Redundancy-free writing = more professional or publish-ready results.

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## PROMPT 2

prompt input : summarize the 2025 budget and mention 5 points that beneficial for the middle class of india?

## OUTPUT2

Here's a refined summary of India's 2025–26 Budget with the top 5 benefits for the middle class:

**IN Budget 2025–26 – Key Highlights** Presented on February 1, 2025, Finance Minister Nirmala Sitharaman introduced budget measures aimed at boosting middle-class welfare and stimulating consumption-led growth [pib.gov.in](https://pib.gov.in) +8 [indiabudget.gov.in](https://indiabudget.gov.in) +8 [reuters.com](https://reuters.com) +8 [livemint.com](https://livemint.com) +7 [apnews.com](https://apnews.com) +7 [reuters.com](https://reuters.com) +7 .

- Top 5 Budget Benefits for India's Middle Class No Income Tax up to ₹12 Lakh (₹12.75 Lakh for Salaried)

Under the new tax regime, individuals earning up to ₹12 lakh are fully exempt, and salaried persons benefit up to ₹12.75 lakh due to the ₹75,000 standard deduction [tribuneindia.com](#) +14 [pib.gov.in](#) +14 [business-standard.com](#) +14 .

- Revised Tax Slabs for New Regime

Streamlined tax slabs with lower rates up to ₹24 lakh (ranging from 0% to 30%) reduce overall tax burden and simplify the tax structure [reuters.com](#) +10 [pib.gov.in](#) +10 [ndtv.com](#) +10 [tribuneindia.com](#) +6 [ndtv.com](#) +6 [m.economictimes.com](#) +6 .

#### Significant Tax Savings Across Income Bands

A taxpayer earning ₹12 lakh saves approximately ₹80,000 annually. Earnings of ₹18 lakh and ₹25 lakh see savings of around ₹70,000 and ₹1.1 lakh respectively under the new regime [en.wikipedia.org](#) +3 [tribuneindia.com](#) +3 [moneycontrol.com](#) +3 .

#### Rationalized TDS/TCS and Filing Norms

TDS on rent raised (₹6 lakh) and senior citizen interest exemption doubled (₹1 lakh). Deadline to file revised returns extended to four years—reducing compliance hassles [en.wikipedia.org](#) +11 [en.wikipedia.org](#) +11 [ndtv.com](#) +11 .

#### Encouraging Consumption and Gig-Economy Support

By boosting disposable income, the budget aims to fuel consumer demand (benefiting FMCG, auto, real estate). Additionally, gig workers get official IDs and healthcare benefits—supporting non-traditional middle-income earners [reuters.com](#) .

## - Why It Matters for You

Higher Take-Home Pay: Exemption up to ₹12.75 lakh means more disposable income.

Simplified Taxes: Less deductions, streamlined slabs, and easier return filing.

Boost to Spending: More spending power supports sectors like retail, vehicles, and housing.

Support for Gig Workers: Non-traditional earners now have access to formal benefits.

Economic Growth Oriented: Enhanced consumption, infrastructure, and startup support aim to fuel broader economic development.

## OBSERVATION

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## - What Worked:

1. Clear and Focused Intent You clearly stated the goal – a summary + 5 specific benefits for the middle class. This gave the model a well-defined structure to follow.
  2. Specific Audience (Middle Class) That focus allowed the output to filter the budget highlights based on relevance, avoiding a generic, unfocused summary.
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## - What didn't worked:

1. Extraneous Source Mentions

Some sections are dense, especially when numbers and policy changes are stacked without visuals or lists

Breaking this into a table or quick comparison could improve readability.

2. Tone Consistency

The tone jumps between neutral-formal and slightly promotional

3. No Overall Budget Summary
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## - Why this matter:

Prompt clarity :Ensures structure and relevance of the response

Source cleanup: Removes distraction and boosts professionalism

Summary depth :Prevents missing broader context beyond middle class Audience tone : Makes it fit for purpose (student, citizen, analyst)

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# CODE GENERATION

## PROMPT 1

PROMPT INPUT :

"Write a Python function that calculates the factorial of a number using recursion. The function should take an integer n and return the factorial value. Include an example call." Here's the Python function based on your prompt:

## OUTPUT 1

```
def factorial(n):  
    """  
    Recursively calculates the factorial of a non-negative integer n.  
  
    Parameters:  
    n (int): A non-negative integer
```

```
Returns:
int: The factorial of n
"""
if n < 0:
    raise ValueError("Factorial is not defined for negative numbers.")
if n == 0 or n == 1:
    return 1
return n * factorial(n - 1)
```

### ✓ How it works:

The function checks if  $n$  is less than 0 and raises an error.

For  $n = 0$  or  $1$ , it returns 1 (base case).

Otherwise, it calls itself recursively:  $n * \text{factorial}(n - 1)$ .

Let me know if you want an iterative version, or to handle very large numbers safely. Example call `print(factorial(5))` # Output: 120

## ✓ OBSERVATION

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### What Worked:

1. Clear Prompt → Accurate Code Well-structured prompt led to correct, complete output.
  2. Readable, Validated Code Code was clean, commented, and handled invalid input.
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### Why It Worked:

1. Prompt Guided Structure Prompt details directly shaped code design.
  2. User-Friendly Design Input checks and comments made it easy to use and learn from.
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### What Didn't:

1. No Overflow Check Large inputs can cause incorrect results due to int limits.
  2. Single Approach Only No iterative version for comparison or efficiency insight.
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## PROMPT 2

pPROMPT INPUT:

"Write a C program that checks whether a given input is a palindrome. The program should accept a string from the user and determine whether it reads the same forward and backward. Include input validation, comments, and an example of how it works."

## OUTPUT 2

Here is a complete C program that checks whether a given string is a palindrome. It includes input validation, comments, and an example:

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```
#include <stdio.h>
#include <string.h>
#include <ctype.h>

// Function to remove non-alphanumeric characters and convert to lowercase
void sanitizeInput(char *str) {
    int i, j = 0;
    char temp[1000];

    for (i = 0; str[i] != '\0'; i++) {
        if (isalnum(str[i])) {
            temp[j++] = tolower(str[i]);
        }
    }
    temp[j] = '\0';
    strcpy(str, temp);
}

// Function to check if a string is a palindrome
int isPalindrome(char str[]) {
    int start = 0;
    int end = strlen(str) - 1;

    while (start < end) {
        if (str[start] != str[end]) {
            return 0; // Not a palindrome
        }
        start++;
        end--;
    }
    return 1; // Palindrome
}

int main() {
    char input[1000];

    printf("Enter a string: ");
    fgets(input, sizeof(input), stdin);

    // Remove newline character from input (if any)
    input[strcspn(input, "\n")] = '\0';

    // Validate input length
```

```
if (strlen(input) == 0) {
    printf("Invalid input: empty string.\n");
    return 1;
}

sanitizeInput(input); // Clean and normalize the input

if (isPalindrome(input)) {
    printf("The input is a palindrome.\n");
} else {
    printf("The input is NOT a palindrome.\n");
}

return 0;
}
```

### How it works:

Input: User enters a string (e.g., "Madam" or "A man, a plan, a canal, Panama").

Sanitization: Removes spaces and punctuation, converts to lowercase. Comparison: Uses two pointers (start and end) to check characters.

Output: Prints whether it is a palindrome.

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### Example Run:

Enter a string: A man, a plan, a canal, Panama The input is a palindrome.

Would you like a version that checks number palindromes or ignores case and spaces only?

## OBSERVATION

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### What worked:

1. Input Cleaning: `isalnum()` and `tolower()` made the program handle punctuation and casing effectively, ensuring accurate palindrome checks.
  2. Code Structure: Separating logic into functions with comments made the code easy to read and modify.
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### What Didn't:

1. Fixed Buffer Size: Using `char temp[1000]` limits input length; dynamic memory would be more scalable.
2. Edge Case Handling: Inputs with only symbols

## Why It Worked (Condensed):

1. Normalized Input: Cleaning and lowercasing ensured accurate, format-free comparison.
  2. Modular Design: Separate functions made the logic clear and reusable.
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## New Section

## CREATIVE THINKING


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### PROMPT1

PROMT INPUT : Pitch a movie where world under alien invasion and include reunion of avengers for our rescue

### OUTPUT 1

Sure! Here's a movie pitch that blends an alien invasion storyline with the reunion of the Avengers, packed with emotion, epic action, and global stakes:


 **MOVIE PITCH:** "AVENGERS: ECLIPSE" Genre: Sci-Fi / Action / Superhero Tone: Epic, Emotional, Dark yet Hopeful Tagline: "When the sky falls, legends rise again."

 **Plot Summary** The world is on fire — but it's not from within.

In the year 2031, Earth is struck by a sudden and silent blackout across all satellites. A mysterious eclipse occurs—one not caused by our moon, but by a colossal alien mothership. The invaders, known as the Nyxan Collective, use dark matter technology to silence Earth's defenses and begin terraforming the planet for their survival, wiping out major cities in minutes.

World governments collapse. Communication breaks down. Hope seems lost.

But in the shadows of this chaos, Nick Fury, long thought to be retired, reactivates a protocol not used since the Snap: "Project Rebirth."

 **The Avengers Reunite (and Rebuild)** The Avengers are gone — scattered, wounded, or in hiding. But one by one, they're found:

Doctor Strange senses the dark energy of the Nyxan core and leads the charge with Wong to form a mystic resistance.

Sam Wilson (Captain America) rallies global survivors, becoming the symbol of hope and humanity's last general.



Shuri, inheriting both her brother's legacy and Stark's tech, develops a hybrid Wakandan-Earth defense program.

Spider-Man (Peter Parker), hardened and more mature, emerges from exile in Europe, haunted but ready.

Bruce Banner and a surprise surviving Tony Stark AI (uploaded pre-Endgame) join forces in a desperate lab mission to develop a countermeasure.

Thor, initially distant and exiled, returns with a fleet of Asgardians and the Guardians of the Galaxy for the final stand.

The old guard and the new wave must come together — a multigenerational team forged from loss, leadership, and loyalty.

🔪 Climax The final battle unfolds across New York, Wakanda, and orbit, with portals opening across dimensions (thanks to Strange and America Chavez). Variants from the multiverse join briefly, hinting at bigger consequences. Hulk faces the Nyxan Prime, Thor shatters the alien sun-forge, and Peter leads an emotional rescue that mirrors Tony's sacrifice — but this time, nobody has to die.

🌟 Themes Legacy and rebirth

Sacrifice vs. survival

Unity in diversity

What makes Earth worth saving

🎬 Post-Credit Scene #1 A beacon sent into deep space: a voice responds in ancient Kree — "He's awake." (Cue Galactus or Kang variant foreshadowing.)

🎬 Post-Credit Scene #2 A young mutant (possibly Kamala Khan or a new X-Men hint) finds a strange shard from the alien core — it responds to her DNA.

Would you like a trailer script, character posters, or a screenplay-style scene from this movie?

## OBSERVATION

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### What Worked

Epic Structure & Emotion: The story arc successfully combines high stakes with emotional resonance, especially through legacy characters and post-Endgame callbacks.

Character Integration: Bringing together old and new Avengers was balanced and purposeful, appealing to fans across different MCU phases.

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### What Didn't Work

Overloaded Cast: Introducing too many characters and subplots (e.g., Guardians, multiverse, AI Tony) risks narrative bloat and weak character focus.

Unclear Villain Depth: The alien race (Nyxan Collective) lacked emotional or philosophical motivation, making them generic threats.

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## Why It Worked

Familiarity + Novelty: Reusing beloved characters in a fresh crisis taps into nostalgia while keeping the narrative forward-looking.

Global Scope: The worldwide and interdimensional setting justifies the Avengers' reunion and raises the cinematic stakes.

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## PROMPT 2

PROMPT INPUT: Describe a conversation between a Harry styles and a harry potter."

## OUT PUT 2

Sure! Here's a fun, imaginative conversation between Harry Styles (the pop star) and Harry Potter (the wizard), blending charm, magic, and modern pop culture:

📍 Setting: A quiet corner of a magical coffee shop in Diagon Alley, called "The Enchanted Brew."

🗣️ Conversation: "When Harry Met... Harry" Harry Styles (sipping a Butterbrew Latte): "Well, this place is wild. I thought backstage at Wembley was chaotic — but flying broomsticks? That's next level."

Harry Potter (smiling): "You get used to it. Though I must say, your fans scream louder than a banshee. I heard one of them fainted just because you waved."

Harry Styles (laughing): "That's true love, mate. But tell me — you've literally fought a dark lord. Don't you ever miss being... just Harry?"

Harry Potter (pauses): "All the time. Sometimes I wish I could just blend in, write music, maybe play a bit of guitar like you."

Harry Styles: "Trade you. You can headline Glastonbury, I'll borrow your wand for a week. Maybe charm a few vocals into pitch."

Harry Potter (grinning): "Deal — but only if I get front row seats and a signed vinyl."

Harry Styles (mock serious): "Only if you teach me how to apparate. Traffic is a nightmare."

Harry Potter: "Done. But no using it to ghost your exes."

Harry Styles (laughing): "Too late."

🌟 Final Line:

Harry Potter: "You know, for two blokes named Harry, we've had very different lives."

Harry Styles: "Maybe. But we've both survived chaos, stayed true to ourselves, and wear good coats."

Harry Potter (raises his mug): "To the Harries. Long may we confuse people."

Would you like this conversation illustrated, turned into a short comic, or rewritten in a different tone (dramatic, poetic, satirical)?

## OBSERVATION

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### What Worked

Character Voice & Tone: Both characters maintained distinct personalities — Potter was calm and witty, Styles was charming and playful, which made the dialogue believable and fun.

Clever Cultural Juxtaposition: Mixing pop stardom with magical life (e.g., touring vs. fighting Voldemort) created humor and contrast that entertained.

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### What Didn't Work

Lack of Conflict or Stakes: The conversation was casual and didn't have a deeper emotional or narrative arc, which could limit engagement.

Over-reliance on Banter: While light-hearted, it leaned too heavily on jokes and missed an opportunity for more depth or mutual curiosity.

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### Why It Worked

Creative Setup: The magical coffee shop setting was whimsical and fitting, making the crossover feel natural.

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## B . ADVANCED TECHNIQUES

Try at least 3 of the following:

- Chain-of-thought prompting
- Role prompting (e.g., "Act as a cybersecurity analyst...")
- Few-shot prompting
- Zero-shot prompting

- Instruction-tuned prompts (e.g., use clear step-by-step instructions)

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## CHAIN OF THOUGHT PROMPTING

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Chain-of-thought prompting is a prompting technique where the model is guided to generate a step-by-step reasoning process rather than jumping straight to the final answer. It's particularly useful for complex tasks that involve logic, math, or multi-step reasoning.

### PROMPT FOR CHAIN OF THOUGHT PROMPTING

I've already studied for 45 minutes, and now I feel like checking Instagram. Should I take a break or keep studying? Think step by step.

### OUTPUT

Let's think it through step by step:

1. Check Your Energy Level Are you feeling mentally exhausted or just distracted?

Tired? A short nap might help you reset.

Distracted? A quick, intentional break could be better than a nap.

2. Check Your Focus If your mind is drifting and you're reaching for Instagram, it might mean your brain needs a short rest — but not a scroll.

Scrolling usually doesn't refresh you; it often makes it harder to return to focus.

3. Use the 5-Minute Rule Commit to just 5 more minutes of studying. Often, getting back into flow will carry you further.

If after 5 minutes you're still struggling, then take a 10–20 minute nap or go for a short walk instead.

4. Set a Reward Tell yourself: "If I study for 15 more minutes, I can take a guilt-free break."

✅ Final Recommendation: Do NOT go on Instagram right now — it'll hijack your focus.

Try studying for 5 more minutes. If you're still mentally fatigued, take a 15–20 minute power nap or a walk — but set a timer so you don't oversleep.

Would you like a quick guide to power napping or a study-break timer suggestion?

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## ZERO SHOT PROMPTING

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Zero-shot prompting is when you ask the AI to perform a task without giving it any prior examples. You're trusting it to understand and respond based only on the instruction in the prompt.

### PROMPT FOR ZERO SHOT PROMPTING

Write an Instagram caption for a photo of someone coding late at night with coffee.

OUT PUT

ChatGPT said:

Fuelled by code and caffeine. 🌙 ☕ 💻

# LateNightCoding # CodeLife #DebugTillDawn #CaffeineAndCode

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## ROLE PROMPTING

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Role prompting is a technique in prompt engineering where the language model is instructed to adopt a specific role, profession, persona, or point of view. By framing the model as a particular "expert" or character, you guide its behavior, tone, and type of responses to better fit the task.

### PROMPT FOR **ROLE PROMPTING**

act as my personal assistant. I work in computer science field. create a customised time blocked daily schedule that includes my core work tasks, breaks, and personal time, making sure i stay focused and productive

OUTPUT

ChatGPT said: Updated saved memory Certainly! Here's a customized time-blocked daily schedule designed for someone in the Computer Science field—balancing deep work, meetings, learning, breaks, and personal time to maximize focus and productivity.

📅 Weekday Schedule (Sample: Monday–Friday)

Time ActivityPurpose

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6:30 AM - 7:00 AM 🧑‍🦯 Morning routine & light exercise Wake up, hydrate, stretch or walk

7:00 AM – 7:30 AM 🍳 Breakfast & prep Eat, review daily goals

7:30 AM – 9:30 AM 💻 Deep Work Block 1 Focused coding, problem-solving, debugging

9:30 AM – 9:45 AM ☕ Short Break Refresh with a walk or coffee

9:45 AM – 11:30 AM 💻 Deep Work Block 2 Architecture design, algorithm development, etc.

11:30 AM – 12:00 PM 📧 Emails & Admin Tasks Clear inbox, project updates, ticket reviews


12:00 PM – 1:00 PM 🍽️ Lunch & Relaxation Step away completely—no screens


1:00 PM – 2:00 PM 📞 Meetings / Collaboration Stand-ups, syncs, team discussions


2:00 PM – 3:30 PM 💻 Deep Work Block 3 Continue development, code review, documentation


3:30 PM – 3:45 PM ☕ Afternoon Break Light snack, meditate or stretch


3:45 PM – 4:30 PM 🧠 Learning & Upskilling Read papers, courses, AI/ML, system design topics


4:30 PM – 5:30 PM  Wrap-up & Planning Push code, review PRs, plan tomorrow

5:30 PM – 7:00 PM  Exercise / Hobbies / Errands Physical activity or personal errands

7:00 PM – 8:00 PM  Dinner Unplug, spend time with family/friends

8:00 PM – 9:00 PM  Light Learning / Reading Books, tech blogs, reflective journaling

9:00 PM – 10:00 PM  Wind Down No screens, plan next day, relax

10:00 PM  Sleep Aim for 7–8 hours of quality rest

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### Tips to Stay Focused:

Use the Pomodoro technique within deep work blocks (25:5 mins).

Mute notifications during deep work and reading time.

Keep meetings within 1–2 PM whenever possible.

Use tools like Notion, Trello, or Google Calendar for time blocking.

Would you like me to generate a weekend version, Google Calendar import, or a printable PDF of this plan?

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## conclusion

The use of advanced prompting techniques like Chain-of-Thought, Role Prompting, Zero-Shot, Few-Shot, and Instruction-Tuned prompting showcases the versatility and power of prompt engineering when applied thoughtfully. Each technique serves a distinct purpose—whether it's breaking down reasoning, guiding tone and role, generating creative content without examples, or producing consistent structured outputs. By experimenting with these methods, we can significantly enhance the quality, relevance, and clarity of AI responses, making them more aligned with specific tasks or user expectations. These techniques not only improve interaction quality but also contribute to more responsible and effective AI usage across different domains.

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