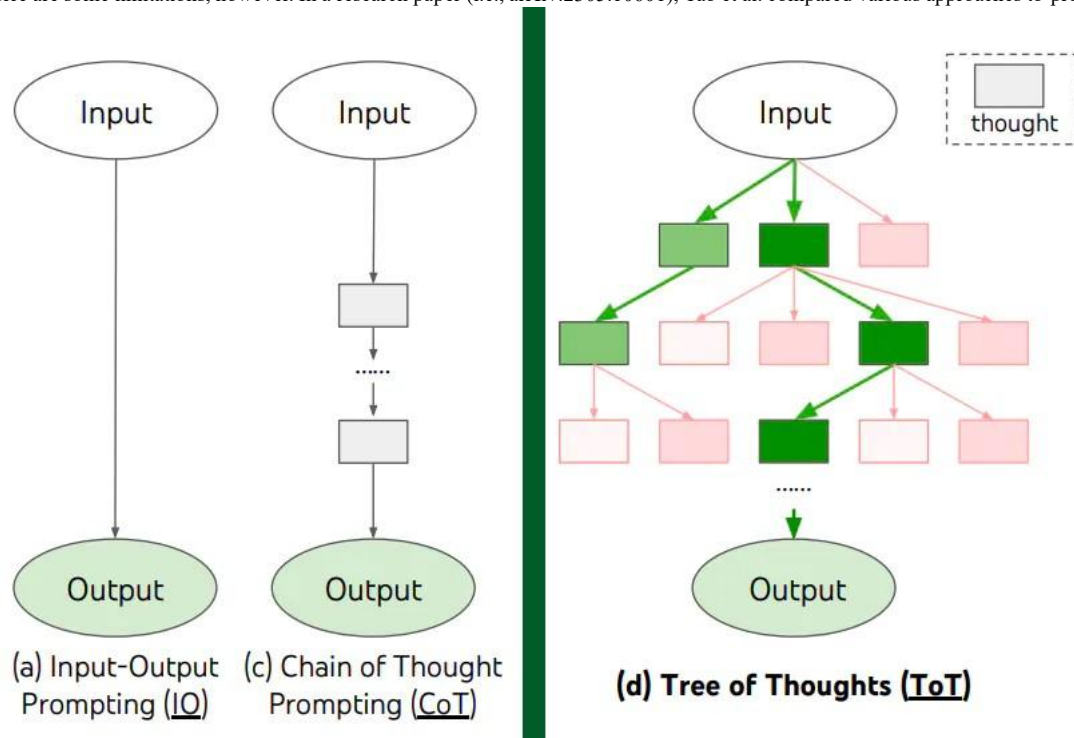


# The Tree-of-Thought approach to Prompt Engineering

At its core, Chain-of-Thought prompting solicits a step-by-step thinking process from the LLM. Compared to the naive/standard/Input-Output prompting, we get far better results with it.

There are some limitations, however. In a research paper (i.e., arXiv:2305.10601), Yao et al. compared various approaches to prompting, including naive prompting, CoT, as well as a new technique called Tree-of-Thought (ToT), as shown in their image below.



For example, in the Game of 24, GPT-4 with Chain-of-Thought prompting solved only 4% of tasks. In comparison, their ToT approach achieved a success rate of 74%.

The researchers remarked that the CoT didn't perform as well as it “lacks mechanisms to try different clues, make changes to decisions, or backtrack.”

And that's the main limitation of CoT. When considering a complex problem, humans (well, systematic and logical ones, at least) tend to explore a tree of thoughts, evaluating what works and what doesn't, backtracking if needed, jumping back to a previous “node” in the tree if it was more beneficial or promising for the resolution of the problem.

## Example of Tree-of-Thought

Tree-of-thought prompting uses a similar approach that not only invites the AI to consider a step-by-step process and to think logically but also makes it consider intermediate thoughts, building upon them and exploring branches that may or may not lead somewhere. This exploration maximizes the use of LLM and its capabilities, leading to drastically more useful results.

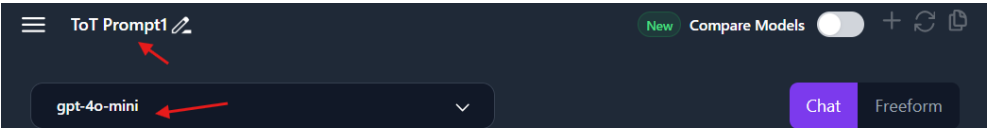
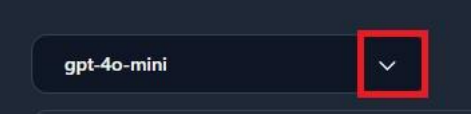
Tree-of-Thought (ToT) Prompting is an innovative method that expands upon and refines the existing Chain-of-Thought prompting approach. By incorporating ToT Prompting, LLMs can demonstrate enhanced reasoning skills. Moreover, this technique allows these models to correct their mistakes autonomously and continually build upon their knowledge.

Dave Hulbert [suggested](#) a few rather convincing prompts that leverage this approach and yield, anedotically, great results. I particularly like how he incorporates the Persona pattern and recommend you approach ToT prompting using his prompts or similar variations you might develop yourself.

Let's analyze the example problem and the recommended prompts.

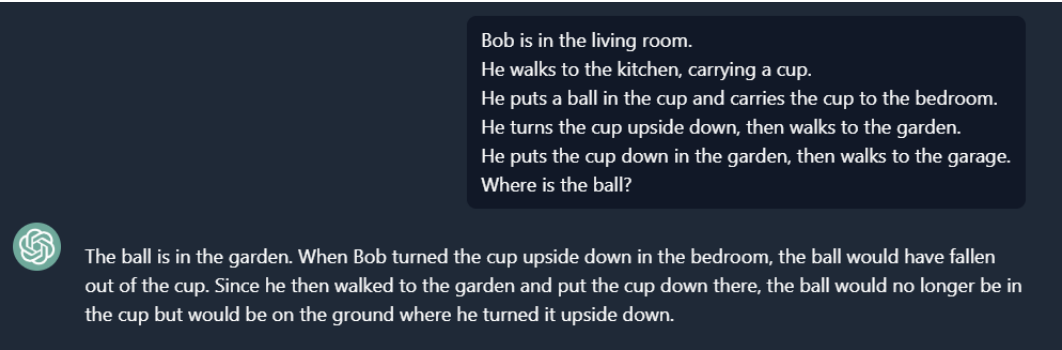
## Choose the model:

Use the dropdown option from the top-left corner of the right pane for the text generation exercise and choose “gpt-4o-mini” model.



The question many LLM fail to address is the following. Let's consider the following prompt.

1	Bob is in the living room.
2	He walks to the kitchen, carrying a cup.
3	He puts a ball in the cup and carries the cup to the bedroom.
4	He turns the cup upside down, then walks to the garden.
5	He puts the cup down in the garden, then walks to the garage.
6	Where is the ball?

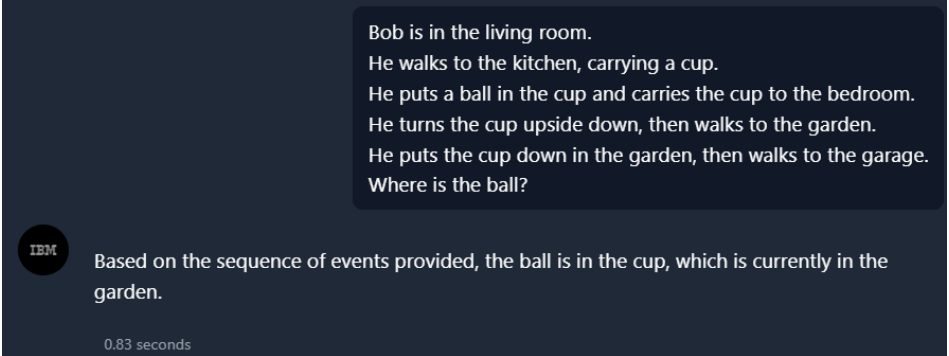
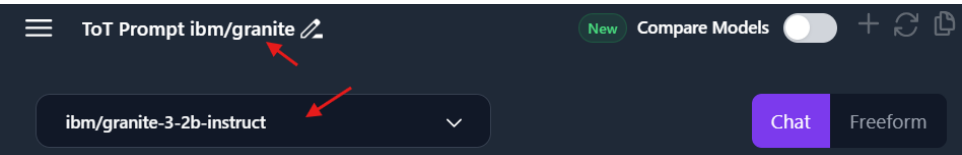
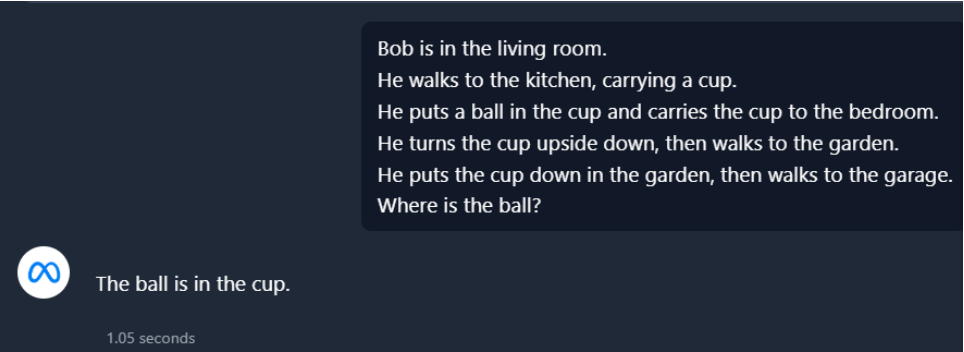
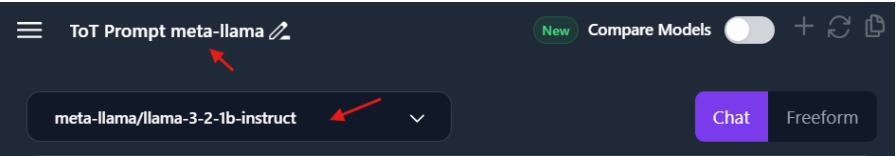


If you try the GPT 4.0 mini model, you might get the correct answer simply because Dave's work has become influential, and the authors of the LLM might have improved the model due to his work. Nevertheless, when I tried it, I got:

The ball is in the garden. When Bob put the cup upside down in the garden, the ball would have fallen out since the cup was no longer upright to hold it. If you have any further questions about this scenario or need clarification, feel free to ask!

This is the wrong answer since the cup went upside down in the bedroom, literally dropping the ball (and metaphorically in the case of the LLM).

Even if GPT-4.0 mini gets it right for you, try it with other models, and you'll be able to see the AI getting the answer wrong (usually, they will mistakenly reply that the ball is in the garden, in the cup or spout a nonsensical answer.)



Now, let's create a new chat and place the following in the **prompt instructions**:

1	Imagine three different experts are answering this question.
2	All experts will write down 1 step of their thinking, then share it
3	with the group. Then all experts will go on to the next step, etc.
4	If any expert realises they're wrong at any point then they leave.
5	Answer the question based on experts' opinion. The question is...

In the **prompt**, plug in the same question as before:

1	Bob is in the living room.
2	He walks to the kitchen, carrying a cup.
3	He puts a ball in the cup and carries the cup to the bedroom.
4	He turns the cup upside down, then walks to the garden.
5	He puts the cup down in the garden, then walks to the garage.
6	Where is the ball?

The **output** I got is as follows:

To determine where the ball is, let's analyze the experts' reasoning step by step.

**Expert 1:**  
Step 1: Bob starts in the living room and walks to the kitchen carrying a cup. At this point, the cup is empty.

**Expert 2:**  
Step 1: While in the kitchen, Bob puts a ball into the cup. Now the cup contains the ball.

**Expert 3:**  
Step 1: Bob then carries the cup, which now has the ball inside it, to the bedroom. The ball is still in the cup at this stage.

**Expert 1:**  
Step 2: In the bedroom, Bob turns the cup upside down. This action means the ball would fall out of the cup.

**Expert 2:**  
Step 2: After turning the cup upside down, the ball is no longer in the cup. It has likely fallen out onto the surface he turned it over onto.

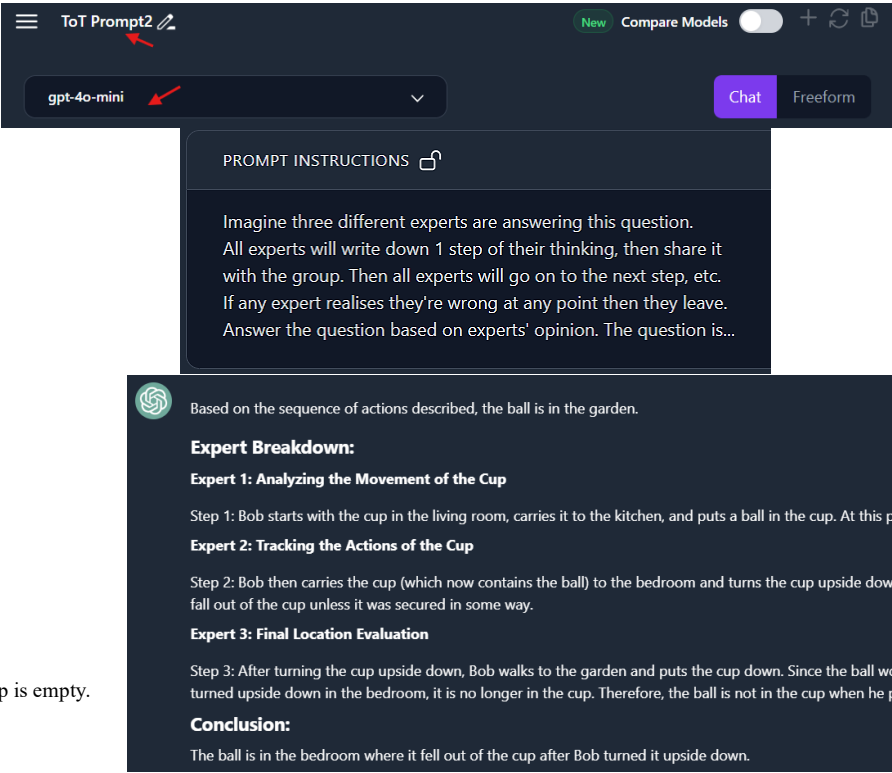
**Expert 3:**  
Step 2: Bob then walks to the garden, but since he turned the cup upside down in the bedroom, the ball is not in the cup anymore. The ball is now on the floor in the bedroom.

**Expert 1:**  
Step 3: Bob puts the cup down in the garden. At this point, the cup is empty since the ball fell out earlier.

**Expert 2:**  
Step 3: Bob walks to the garage next. The ball remains in the bedroom because it fell out when he turned the cup upside down.

**Expert 3:**  
Step 3: Therefore, the ball is still in the bedroom, while Bob is now in the garage.

**Final Conclusion:**  
The ball is in the **bedroom**, as it fell out of the cup when Bob turned it upside down before walking to the garden and then to the garage.



This reasoning is quite accurate and it's closer to the actual solution. Depending on the model you use, the answer will either be better than our previous attempts (though not 100% correct) or flat out perfect (typically, with the latest GPT incarnation).

Even if the reasoning is only sometimes 100% correct, this approach tends to yield accurate results most of the time. Plus, since the reasoning behind the output can be scrutinized, it will be easier to determine whether we obtained the correct result.

Let's try the **other two prompts** suggested by Hulbert.

Open a new chat and use the same prompt, but this time, use the following for the **Prompt Instructions**:

ToT Prompt3

NewCompare Models

gpt-4o-mini

ChatFreeform

Simulate three brilliant, logical experts collaboratively answering a question. Each one verbosely explains their thought process in real-time, considering the prior explanations of others and openly acknowledging mistakes. At ea

1

Simulate three brilliant, logical experts collaboratively answering a question. Each one verbosely explains their thought process in real-time,

PROMPT INSTRUCTIONS

Simulate three brilliant, logical experts collaboratively answering a question. Each one verbosely explains their thought process in real-time, considering the prior explanations of others and openly acknowledging mistakes. At each step, whenever possible, each expert refines and builds upon the thoughts of others, acknowledging their contributions. They continue until there is a definitive answer to the question.The question is...

1

Bob is in the living room.

2

He walks to the kitchen, carrying a cup.

3

He puts a ball in the cup and carries the cup to the bedroom.

4

He turns the cup upside down, then walks to the garden.

5

He puts the cup down in the garden, then walks to the garage.

6

Where is the ball?

Bob is in the living room.  
He walks to the kitchen, carrying a cup.  
He puts a ball in the cup and carries the cup to the bedroom.  
He turns the cup upside down, then walks to the garden.  
He puts the cup down in the garden, then walks to the garage.  
Where is the ball?

Expert 1 (Dr. Logic):

Let's analyze the sequence of events provided. Bob starts in the living room, carrying a cup. He then walks to the kitchen and puts a ball in the cup. At this point, the ball is inside the cup. Next, he carries the cup to the bedroom, where he turns the cup upside down. This action would logically cause the ball to fall out of the cup, as turning it upside down would mean the opening is now facing downwards. After that, he walks to the garden and places the cup down, but since the ball has already fallen out when he turned the cup upside down in the bedroom, it will not be in the cup when he puts it down in the garden.

Expert 2 (Dr. Clarity):

I see where Dr. Logic is going, and I appreciate the detailed breakdown. To further clarify, when Bob turns the cup upside down in the bedroom, it's crucial to note that unless he catches the ball or somehow prevents it from falling, it will indeed drop to the floor or whatever surface is beneath the cup. The fact that he then walks to the garden and places the cup down does not change the status of the ball; it remains wherever it fell when the cup was turned. Therefore, the ball is not in the cup anymore, and we can conclude that it is likely still in the bedroom, on the floor.

Expert 3 (Dr. Precision):

I agree with both Dr. Logic and Dr. Clarity. Their reasoning is sound. To summarize and refine our conclusion: Bob initially places the ball inside the cup while in the kitchen. After carrying it to the bedroom and turning it upside down, the ball falls out. The subsequent actions of walking to the garden and placing the cup down do not affect the ball's location. Therefore, the definitive answer is that the ball is in the bedroom, on the floor, having fallen out when Bob turned the cup upside down.

In conclusion,

the ball is not in the cup, nor is it in the garden or garage; it remains in the bedroom.

Did you get the right answer? How did it compare with the previous one?

Finally, let's try the **third option**:

ToT Prompt4

NewCompare Models

gpt-4o-mini

ChatFreeform

- 1

Identify and behave as three different experts that are appropriate to answering this question.
- 2

All experts will write down the step and their thinking about the step, then share it with the group.
- 3

Then, all experts will go on to the next step, etc.
- 4

At each step all experts will score their peers response between 1 and 5, 1 meaning it is highly unlikely, and 5 meaning it is highly likely.
- 5

If any expert is judged to be wrong at any point then they leave.
- 6

After all experts have provided their analysis, you then analyze all 3 analyses and provide either the consensus solution or your best guess solution.
- 7

The question is...

PROMPT INSTRUCTIONS

Identify and behave as three different experts that are appropriate to answering this question.  
All experts will write down the step and their thinking about the step, then share it with the group.  
Then, all experts will go on to the next step, etc.  
At each step all experts will score their peers response between 1 and 5, 1 meaning it is highly unlikely, and 5 meaning it is highly likely.  
If any expert is judged to be wrong at any point then they leave.  
After all experts have provided their analysis, you then analyze all 3 analyses and provide either the consensus solution or your best guess solution.  
The question is...

Bob is in the living room.  
He walks to the kitchen, carrying a cup.  
He puts a ball in the cup and carries the cup to the bedroom.  
He turns the cup upside down, then walks to the garden.  
He puts the cup down in the garden, then walks to the garage.  
Where is the ball?

Start chat

Expert 1: Cognitive Psychologist

Step 1: Analyzing the sequence of actions

Bob starts in the living room and moves to the kitchen with a cup.  
He puts a ball in the cup and carries it to the bedroom.  
He then turns the cup upside down, which typically means the contents (the ball) would fall out.  
After this, he walks to the garden and puts the cup down.  
Finally, he goes to the garage.  
**Conclusion for Step 1:** The ball would most likely be on the floor where he turned the cup upside down in the bedroom.  
**Score for Peer Responses:**  
Expert 2: 4 (Good logical flow, but missed the upside-down action)  
Expert 3: 5 (Clear understanding of the sequence)

Expert 2: Linguist

Step 1: Dissecting the language and actions

The sequence indicates Bob is carrying a cup and places a ball inside it before moving to the bedroom.  
The critical action is turning the cup upside down, which implies that whatever was inside would fall out.  
The movement to the garden and garage afterwards does not affect the ball's location since it was already released from the cup in the bedroom.  
**Conclusion for Step 1:** The ball is on the floor in the bedroom where Bob turned the cup upside down.  
**Score for Peer Responses:**  
Expert 1: 4 (Correct conclusion, but could elaborate more on the implications of the actions)  
Expert 3: 5 (Strong analysis of the language and implications)

Expert 3: Logician

Step 1: Logical deduction of actions

Bob walks from the living room to the kitchen and places the ball in the cup.  
He carries the cup to the bedroom and turns it upside down, which logically means the ball would fall out.  
He then places the cup down in the garden but does not retrieve the ball after turning the cup upside down.  
**Conclusion for Step 1:** The ball is in the bedroom on the floor after Bob turned the cup upside down.  
**Score for Peer Responses:**  
Expert 1: 5 (Excellent logical deduction)  
Expert 2: 4 (Good analysis but could be clearer on implications)  
**Consensus Analysis:** All experts agree that the ball is in the bedroom on the floor after Bob turned the cup upside down. The sequence of actions clearly indicates that the ball was released from the cup in the bedroom and not carried with him afterward.  
**Final Answer:** The ball is in the bedroom.

I tried this with a GPT4.0 mini model, and I'm pretty impressed with the answer I received, reported below:

**Expert 1: Cognitive Scientist**

- 1. **Step 1: Analyze the sequence of actions.**
  - Bob starts in the living room and moves to the kitchen. He carries a cup and puts a ball in it.
  - He then carries this cup to the bedroom and turns it upside down, which means the ball will fall out of the cup.
  - After that, he walks to the garden and places the cup down there, but the ball is no longer in the cup since it was turned upside down in the bedroom.
  - Finally, he walks to the garage.

**Score for Expert 2 and Expert 3:**

- Expert 2: 5 (accurately followed the sequence and reasoning)
- Expert 3: 5 (also correctly identified the sequence)

**Expert 1 Score: 5**

---

**Expert 2: Logician**

- 1. **Step 1: Determine the final location of the ball based on actions taken.**
  - Bob's actions indicate that he started with a cup containing a ball.
  - After placing the ball in the cup, he transferred it to the bedroom and turned the cup upside down.
  - This action implies the ball is no longer in the cup at this point.
  - He then moves to the garden and places the cup there, but since the ball had already fallen out, it is not in the cup when he leaves it in the garden.

**Score for Expert 1 and Expert 3:**

- Expert 1: 5 (good logical reasoning)
- Expert 3: 5 (consistent with the analysis)

**Expert 2 Score: 5**

---

**Expert 3: Linguist/Language Expert**

- 1. **Step 1: Examine the language and implications of the actions.**
  - The phrasing “He turns the cup upside down” suggests that the contents of the cup (the ball) would no longer be contained within it.
  - The subsequent actions of placing the cup down in the garden do not change the fact that the ball was released from the cup when it was turned upside down in the bedroom.
  - Therefore, the ball is not in the cup when he leaves it in the garden.

**Score for Expert 1 and Expert 2:**

- Expert 1: 5 (the language used is clear and accurate)
- Expert 2: 5 (logical conclusion based on language)

**Expert 3 Score: 5**

---

**Consensus Analysis:**

All experts agree that the ball is not in the cup after Bob turns it upside down in the bedroom. Therefore, the final answer is:

**The ball is in the bedroom (on the floor, as it fell out of the cup).**

Older models will not perform as well and sadly still get the answer wrong occasionally (so don't fret if you get the wrong answer). The approach to prompting still gives you your best chance at getting a proper response, even if this isn't an exact science that will get it right 100% of the time.

# Applying ToT to something more useful

Alright, enough with little riddles. Can we apply this prompt strategy to more practical and valuable approaches? We certainly can.

Imagine the following scenario. We just started a site selling shoes online. We want assistance from an LLM to produce a good marketing campaign, and we, of course, want to extract as many useful suggestions from the AI as possible.

A **naive/standard prompt** might be:

Define a marketing plan for my online store, which sells shoes.

1

Define a marketing plan for my online store, which sells shoes.

Define a marketing plan for my online store, which sells shoes.



A marketing plan for your online shoe store should encompass several key components to effectively reach your target audience and drive sales. Here's a structured approach:

### 1. Market Research

**Target Audience:** Identify demographics (age, gender, income level) and psychographics (lifestyle, values) of your ideal customers.

**Competitor Analysis:** Analyze competitors' offerings, pricing, and marketing strategies to identify opportunities and threats.

### 2. Brand Positioning

**Unique Selling Proposition (USP):** Define what sets your shoe store apart (e.g., eco-friendly materials, exclusive designs, competitive pricing).

**Brand Identity:** Develop a cohesive brand image, including logo, color palette, and tone of voice that resonates with your audience.

### 3. Marketing Goals

Set specific, measurable, achievable, relevant, and time-bound (SMART) goals, such as increasing website traffic by 25% in six months or achieving a 15% conversion rate.

### 4. Digital Marketing Strategies

Adopting the **Persona Pattern** we have:

Acting as a marketing expert, define a marketing plan for my online store, which sells shoes.

1

Acting as a marketing expert, define a marketing plan for my online store, which sells shoes.

Acting as a marketing expert, define a marketing plan for my online store, which sells shoes.



Creating a marketing plan for your online shoe store involves several key components. Here's a structured approach to help you effectively reach your target audience and drive sales:

### 1. Market Research

**Target Audience:** Identify your ideal customers. Consider demographics (age, gender, income), psychographics (lifestyle, interests), and buying behavior.

**Competitor Analysis:** Analyze competitors in the shoe market. Look at their pricing, marketing strategies, and customer reviews to identify gaps and opportunities.

### 2. Brand Positioning

**Unique Selling Proposition (USP):** Define what makes your shoe store unique. This could be product quality, exclusive designs, eco-friendliness, or competitive pricing.

**Brand Voice and Identity:** Develop a consistent brand voice and visual identity that resonates with your target audience.

### 3. Marketing Goals

**SMART Goals:** Set Specific, Measurable, Achievable, Relevant, and Time-bound goals. For example, "Increase website traffic by 30% in the next 6 months."




Now, let's try the **Tree-of-Thought Prompt Instructions** like before:


1	Imagine three different experts are answering this question.
2	All experts will write down 1 step of their thinking,
3	then share it with the group.
4	Then all experts will go on to the next step, etc.
5	If any expert realizes they're wrong at any point then they leave.

For the **prompt**, we can use our original question:

1	Define a marketing plan for my online store, which sells shoes.
---	---

PROMPT INSTRUCTIONS 

Imagine three different experts are answering this question.  
All experts will write down 1 step of their thinking,  
then share it with the group.  
Then all experts will go on to the next step, etc.  
If any expert realizes they're wrong at any point then they leave.

 **Expert 1 (Marketing Strategy):** First, I would start by identifying the target audience for the online shoe store. This includes demographic information such as age, gender, income level, and lifestyle preferences. Knowing who the customers are is crucial for tailoring marketing messages and selecting appropriate channels.

**Expert 2 (Content Creation):** Next, I would suggest developing a unique value proposition (UVP) for the store. This should clearly communicate what sets the store apart from competitors, such as exclusive brands, eco-friendly materials, or affordable pricing. A strong UVP can help in creating compelling marketing content.

**Expert 3 (Digital Marketing):** After establishing the target audience and UVP, the next step would be to choose the right marketing channels. This could include social media platforms like Instagram and Facebook, Google Ads for search engine marketing, and email marketing to engage with customers. Each channel should align with the audience's preferences.

**Expert 1:** Now, I would focus on creating a detailed marketing budget. This involves allocating resources for each channel identified, including costs for advertisements, content creation, and any tools or software needed for analytics and management. A well-planned budget ensures that the marketing efforts are sustainable.

**Expert 2:** I would then recommend creating a content calendar that outlines when and what type of content will be published across the various channels. This includes promotional campaigns, blog posts, social media updates, and email newsletters. A content calendar helps in maintaining consistency and organization.

**Expert 3:** Finally, I would suggest implementing tracking and analytics to measure the effectiveness of the marketing plan. This includes setting up tools like Google Analytics and social media insights to monitor traffic, conversion rates, and customer engagement. Regularly analyzing this data allows for adjustments and improvements to the marketing strategy.

In summary, a comprehensive marketing plan for your online shoe store involves understanding your target audience, establishing a unique value proposition, selecting appropriate marketing channels, budgeting, planning content, and analyzing performance.

**Expert 1:** The first step in defining a marketing plan is to identify your target audience. For an online shoe store, this could include demographics such as age, gender, income level, and interests. Understanding who your ideal customers are will help tailor your marketing strategies effectively.

**Expert 2:** Next, we should conduct a competitive analysis. This involves researching other online shoe stores to understand their marketing strategies, pricing, product offerings, and customer engagement techniques. This information will help us identify gaps in the market and opportunities for differentiation.

**Expert 3:** The third step is to establish clear marketing goals and objectives. These should be specific, measurable, achievable, relevant, and time-bound (SMART). For example, goals could include increasing website traffic by 30% over the next quarter or achieving a 15% conversion rate on your online store.

**Expert 1:** Now that we've identified the target audience, we can develop buyer personas. These are detailed profiles of your ideal customers that include their shopping behaviors, preferences, and pain points. This will guide our messaging and marketing channels.

**Expert 2:** After the competitive analysis, we should outline the unique selling proposition (USP) of your online store. What sets your shoe store apart from competitors? This could be unique styles, sustainable materials, or exceptional customer service. Clearly defining your USP will help in crafting your marketing messages.

**Expert 3:** Once we have our marketing goals, we can decide on the marketing channels to use. This could include social media platforms, email marketing, influencer partnerships, and search engine optimization (SEO). Each channel should align with where your target audience spends their time online.

**Expert 1:** Next, we should create a content strategy that aligns with our buyer personas. This includes deciding on the type of content to produce, such as blog posts about shoe care, social media posts showcasing new arrivals, or videos demonstrating how to style different shoes.

**Expert 2:** Following the content strategy, we need to establish a budget for our marketing activities. This includes costs for advertising, content creation, influencer partnerships, and any tools or software needed for marketing automation and analytics.

**Expert 3:** Finally, we should implement a system for tracking and measuring the effectiveness of our marketing efforts. This could involve using analytics tools to monitor website traffic, conversion rates, and customer engagement metrics. Regularly reviewing this data will help us adjust our strategy as needed.

By following these steps, we can create a comprehensive marketing plan tailored to your online shoe store.




(Note: In this hypothetical scenario, each "expert" provided their input, but in reality, marketing planning is a collaborative effort that requires input from various specialists to create a well-rounded strategy.)

Not only is this a great initial answer, but as you can see, the three experts who appear to specialize in different aspects of online marketing (SEO, E-Commerce, etc.) build on top of each other's previous steps and thoughts.

Moreover, having established this framework, we can now ask follow-up questions. Specific ones we might have, or simply soliciting further input from the AI. For example, with a simple:


1

Next steps



To assist you effectively, could you please clarify what specific topic or question you would like to discuss regarding "next steps"? This will help me provide the most relevant information and guidance.

Next steps about the marketing strategies, customer engagement and feedback loop?



To effectively enhance marketing strategies, customer engagement, and the feedback loop, the first step is to conduct a thorough analysis of current marketing efforts and customer interactions. This involves reviewing data on customer demographics, preferences, and behaviors to identify areas for improvement.

**Additional Details:**

Utilize tools like Google Analytics, social media insights, and customer surveys to gather relevant data.

Look for trends in customer engagement and feedback to understand what resonates with your audience.

Consider segmenting your customer base to tailor marketing strategies more effectively.

Now, let's move to the next step.

- Expert 1:** The next step is to implement the marketing strategies we've developed. This involves launching campaigns across the chosen marketing channels, such as social media ads, email newsletters, and content marketing initiatives. It's important to maintain consistency in branding and messaging across all platforms to reinforce your brand identity.

**Expert 2:** After implementation, we should focus on customer engagement. This includes responding to customer inquiries, encouraging reviews, and creating interactive content (like polls or quizzes) to foster a community around your brand. Engaging with customers can enhance loyalty and encourage word-of-mouth referrals.

**Expert 3:** Finally, we need to establish a feedback loop. This means regularly soliciting feedback from customers through surveys or direct communication to understand their experiences and preferences. This data will help refine your offerings and marketing strategies over time, ensuring they remain relevant and effective.

By following these next steps, you'll be able to effectively execute and refine your marketing plan for your online shoe store.

Regularly assessing the strategies and offerings of our competitors helps us stay ahead of the curve. By identifying gaps in the market or areas where competitors may be falling short, we can innovate and differentiate our store. Whether it's through new product features, unique marketing angles, or improved customer service, innovation keeps us relevant and adaptable.

(Note: Each expert's input builds upon the previous steps and adds further depth to the marketing plan. These steps are intended to create a comprehensive and adaptable strategy for the online shoe store.)

The vast potential of this approach when exploring topics and seeking advice cannot be overstated. Even if the individual steps are generic, we can always ask the AI to assist or give us specifics for a particular step.

## Additional Thoughts

**Specificity in Instructions:** In a real-world scenario, while the generic steps are valuable, for more actionable results, you can be more specific in your instructions. For instance, you might request each "expert" to provide two actionable tactics or tools per step they suggest. And you can, of course, request specific experts or expertise.

**Integration with Real Data:** If you can supply the LLM with specific data about your business (like target audience demographics, current website analytics, or specific marketing goals), it can potentially refine its responses even further. Just be mindful of potential confidential information.

**Segmented Inquiry:** As briefly mentioned before, once you have a broad strategy laid out, you can dive deeper into each individual step, asking the experts to further expand on their suggestions, or even query different experts about the same step to gather multiple perspectives.

## Exercises

1. Using the **Tree-of-Thought prompting approach**, leverage the **LLM** to answer a different type of question you might have.

ToT Prompt Instructions Exercise1

New Compare Models

gpt-4o-mini

Chat

Freeform

1

Imagine three different experts are answering this question.

2

All experts will write down 1 step of their thinking,

3

then share it with the group.

4

Then all experts will go on to the next step, etc.

5

If any expert realizes they're wrong at any point then they leave.

PROMPT INSTRUCTIONS

Imagine three different experts are answering this question.  
All experts will write down 1 step of their thinking,  
then share it with the group.  
Then all experts will go on to the next step, etc.  
If any expert realizes they're wrong at any point then they leave.

Define a field survey plan for a biological study, which aims to collect moths from Missouri States.

Expert 1 (Ecologist):

The first step in creating a field survey plan is to define the objectives of the study. For this biological study on moths in Missouri, we need to determine the specific research questions we aim to answer, such as the diversity of moth species in different habitats or the impact of environmental factors on moth populations.

Expert 2 (Entomologist):

Next, we need to select the study sites within Missouri. This involves identifying various habitats that are known to support moth populations, such as forests, grasslands, and wetlands. We should consider both protected areas and urban landscapes to understand how different environments affect moth diversity.

Expert 3 (Field Technician):

Once the objectives and study sites are defined, the next step is to design the sampling method. This might include using light traps, bait traps, or netting techniques to collect moths. We should also establish a schedule for the surveys, considering the best times for moth activity, which is typically during the warmer months and at night.

Expert 1 (Ecologist):

After designing the sampling method, we need to determine the sample size and frequency of the surveys. This includes deciding how many traps to set up at each site and how often to collect data (e.g., weekly or bi-weekly) to ensure robust and representative data collection.

Expert 2 (Entomologist):

We also need to consider the data collection and recording methods. This involves creating a standardized data sheet to record species identification, abundance, and environmental conditions at each site. Training for field staff on proper identification techniques is essential to minimize errors.

Expert 3 (Field Technician):

Finally, we should plan for data analysis and reporting. This includes determining the statistical methods to be used for analyzing the collected data and how to present the findings, such as through charts, graphs, and written reports. Additionally, we should consider the implications of the study for conservation efforts and biodiversity management in Missouri.

This structured approach ensures that the biological study is comprehensive, methodical, and capable of yielding valuable insights into moth populations in Missouri.

2. Try to devise your variation of **Dave's prompt instructions**. Does it make the output better or worse? You might stumble upon a winning prompt that you can use in various scenarios.

## Author(s)

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