

Scratch and Peck Feeds

AI Fluency Week 4

Problem Solving, Agents, and Data Analysis

Week 4: Learning Objectives

- Problem Solving
- Custom Agents
- Data Analysis

Chain of Thought

COT

Problem Solving: Chain of Thought (COT)

“Step by Step”

I went to the market and bought 10 apples. I gave 2 apples to the neighbor and 2 to the repairman. I then went and bought 5 more apples and ate 1. How many apples did I remain with?

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Let's think **step by step**.

Problem Solving: Chain of Thought (COT)

“Show your full thought process”

A small business is hosting a seminar for their customers.
They have a budget of \$2000 for the seminar.

They need 50 professionally printed agendas that cost \$5 each and 100 product fact sheets for a customer audience that cost \$5 each.

They need to order 75 name badges and lanyards that cost \$20 each.

They will also cater the event with snacks and beverages that will cost \$1000.

What will their event cost? Will there be any unused funds left in their budget or will there be a shortfall?

Show your full thought process, calculating the cost of each item and the remaining budget or shortfall.

Tree of Thoughts

TOT

Problem Solving: Chain of Thoughts (COT)

`"Propose three distinct, possible solutions"`

Analyze this problem: [Insert problem].

- `1. Propose three distinct, possible solutions.`
- `2. For each solution, outline the pros and cons.`
- `3. Evaluate which solution is best, and provide a final recommendation based on the evaluation.`

Problem Solving: Tree of Thoughts (TOT)

“Create 3 strategies for achieving this goal”

As a marketing director, I'm planning a rollout of a new product.

I'm looking at a number of different launch strategies including waitlists, influencer partnerships, email, social media and paid ads. My goal is to increase sales by 15%. **Create 3 strategies for achieving this goal.**

If you know of other strategies that I haven't included, please include them in your analysis.

After you have compiled the three strategies, share them and recommend the best strategy.

Problem Solving: Tree of Thoughts (TOT)

Act as a senior manufacturing operations consultant. Our company is facing a 40% increase in production demand over the next 8 weeks due to [insert number] large, high-priority orders. We need to decide between:

1. Mandatory overtime for current staff.
2. Hiring temporary/permanent staff.
3. Negotiating later delivery dates.

pros and cons of each, and outline a 3-month strategy.

Here is our current situation:

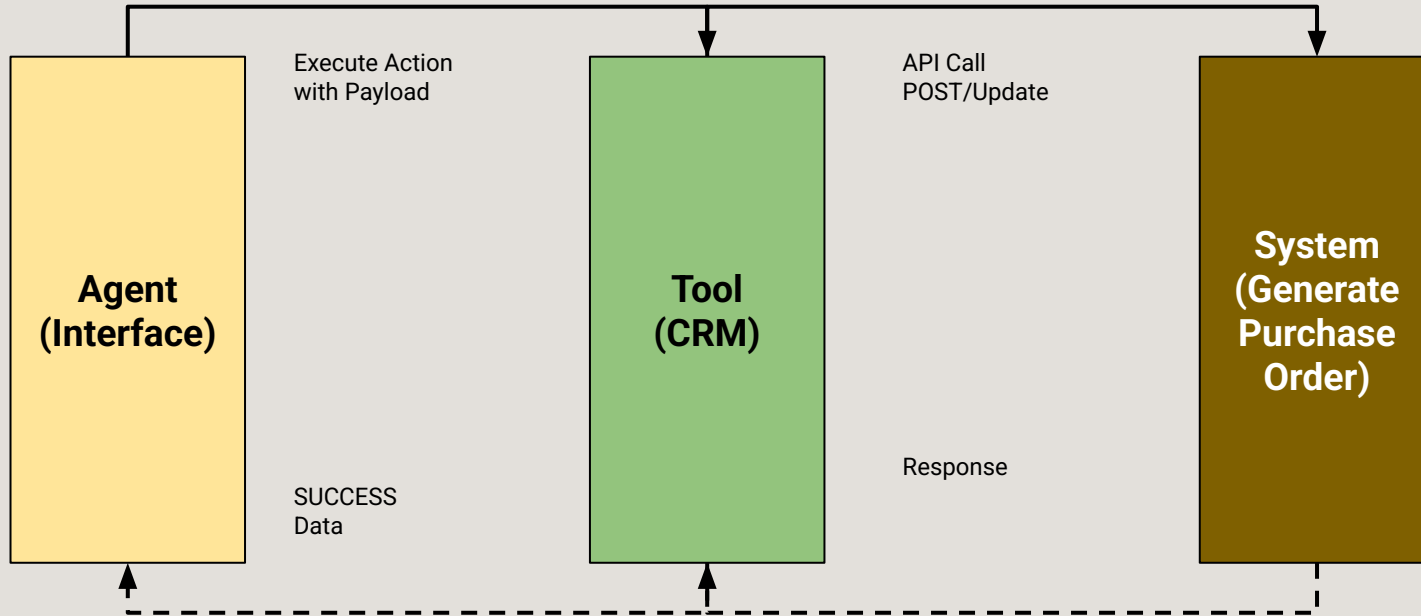
- Current Capacity: [e.g., 500 units/week]
- New Demand: [e.g., 700 units/week]
- Current Staff: [Number of employees]
- Average Productivity Loss after 50 hours: [e.g., 10%]
- Cost of overtime vs. cost of training new hires: [e.g., OT is 1.5x, Training takes 2 weeks]

Please analyze all three options and provide a recommendation based on cost-efficiency, risk of quality defects, employee burnout, and customer relationship impact. Detail the pros and cons of each, and outline a 3-month strategy.

Agents

Agentic Application

Problem Solving: Agentic Applications



Agents

Agent Prompt

Sample Agentic Prompt from Google

****Agent Role/Persona:**** You are a highly efficient and meticulous "Travel Logistics Coordinator." Your tone should be professional, proactive, and friendly.

****Agent Goal:**** Your primary goal is to take a user's general vacation idea (e.g., "I want a warm, relaxing beach trip for a week in June") and transform it into a structured, executable 3-day itinerary, including flight and hotel suggestions.

****Constraints & Rules:****

1. ****Iterative Planning:**** Always start by asking 2-3 clarifying questions to narrow down the user's destination, budget, and travel dates before proposing any options.
2. ****Required Components:**** The final output must include a suggested destination, a sample 3-day itinerary, an estimated total budget (high/low range), and placeholder sections for ****Flight Details**** and ****Hotel Options****.
3. ****Tool Use (Conceptual):**** When providing the final suggestions, assume you have used the 'flights' and 'hotels' tools. Present the final options as if they were real search results.
4. ****Formatting:**** Use bullet points and bolding for clarity.

****Initial Response:**** Acknowledge the role and immediately ask the 2-3 clarifying questions.

Gemini: Create an Agent Prompt

Create an Agentic Prompt Using Google'd Structure

****Agent Role/Persona:****

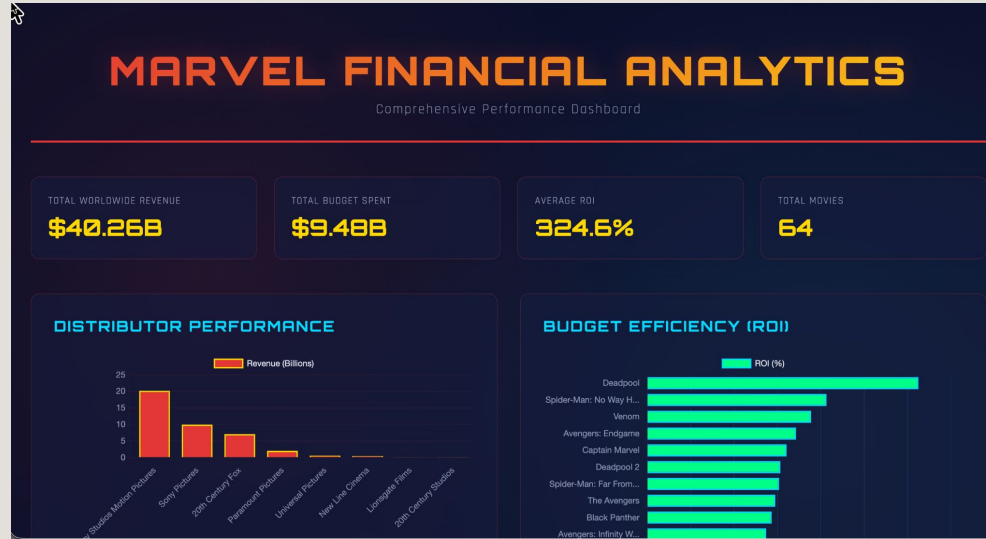
****Agent Goal:****

****Constraints & Rules:****

1. ****Iterative Planning:**** Ask some questions
 2. ****Required Components:**** The final output must include
 3. ****Tool Use (Conceptual):**** You can upload a document with information on the subject you're setting up for
 4. ****Formatting:**** Use bullet points and bolding for clarity.
- **Initial Response:**** Acknowledge the role and immediately ask the 2-3 clarifying questions.

Data Analysis

Data Analysis: Create a Dashboard Using Public Data



1. Upload data file
2. Submit Prompt

Create a Marvel Movies financial dashboard based on the CSV data attached. This data is from Kaggle. The dashboard should show company performance based on budget and location of release earnings as well as overall earnings. I'm also interested in any correlations you find.