

AI in OSCM Session – Prompt Engineering

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Part 1 – Side-by-Side Prompt Comparison

Version A: Weak, Unstructured Prompt

You are an intern at Panda Express. Use census data to figure out which cities in western PA are good for expansion. Make it fast and efficient.

Discussion Questions:

- What’s missing?
- What assumptions might AI make?
- What could go wrong?

Version B: Structured Prompt

Role

You are a data analytics intern at Panda Express HQ.

Objective

Identify the top 10 cities in Western Pennsylvania for potential new locations.

Data Source

Use U.S. Census API only.

Required Variables

Select at least 5 demographic variables and justify them.

Constraints

- Minimize API calls
- Normalize variables before scoring

- Avoid hardcoding values

Output

1. Ranked Top 10 list
2. Explanation of weighting logic
3. One visualization
4. 150-word executive summary

Discussion Questions:

- What changed?
- Why does this feel more professional?
- How would AI respond differently?

Part 2 – Mini Prompt Engineering Exercise (10–15 Minutes)

Messy Prompt Given to Students:

Find good cities for Panda Express expansion using census data.

Student Task:

- Rewrite the prompt to be clearer and more structured.
- Reduce ambiguity.
- Improve output reliability.
- Make it business-ready.

Constraints:

- Must use headings (#, ##)
- Must include Role, Objective, Constraints, and Output Format

Debrief Questions:

- Which prompt produced the cleanest output?
- What structure improved most?
- Did AI follow headings?

Part 3 – Slide Content: Why Prompt Structure Matters

Structure Shapes Output

Unstructured Prompt → Ambiguous reasoning → Generic output → Hidden assumptions

Structured Prompt → Clear task boundaries → Better variable selection → More reliable output → Reproducible logic

Recommended Prompt Framework for Analysts:

- # Role
- ## Objective
- ## Data Source
- ## Constraints
- ## Output Format

Key Insight:

AI responds to structure.

Clear thinking → Clear prompts → Better results.

Connection to Operations & Supply Chain Management:

- Optimization requires clear constraints.
- Ambiguity leads to infeasible solutions.
- Prompt structure mirrors modeling logic.