Prompt Engineering

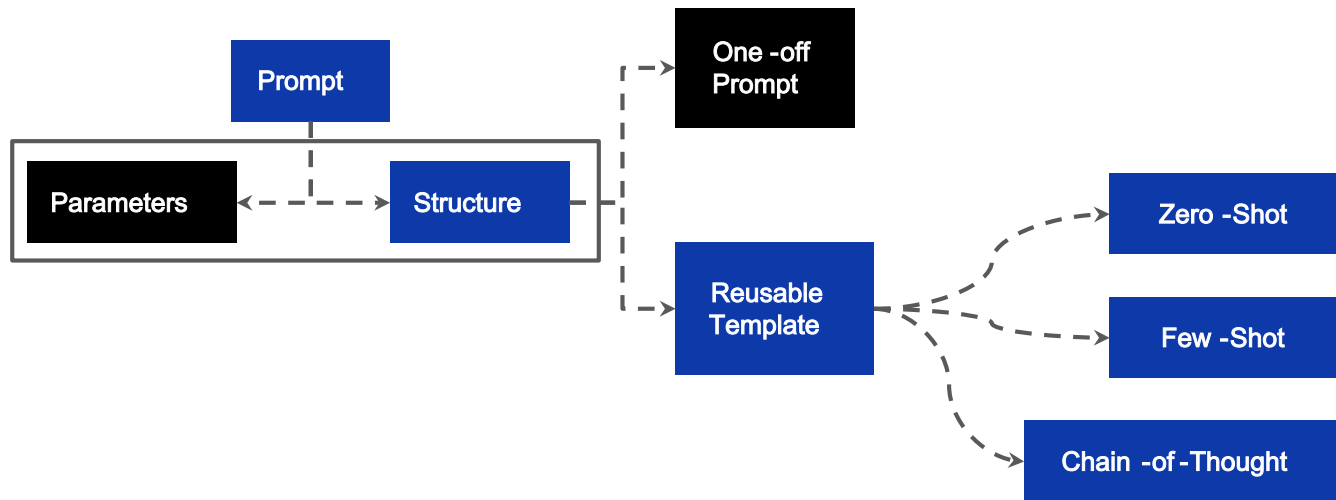Understanding Advanced Prompting with LLMs

Agenda

In this session, we'll discuss:

- Prompt Engineering Overview
- Reusable Prompt Templates
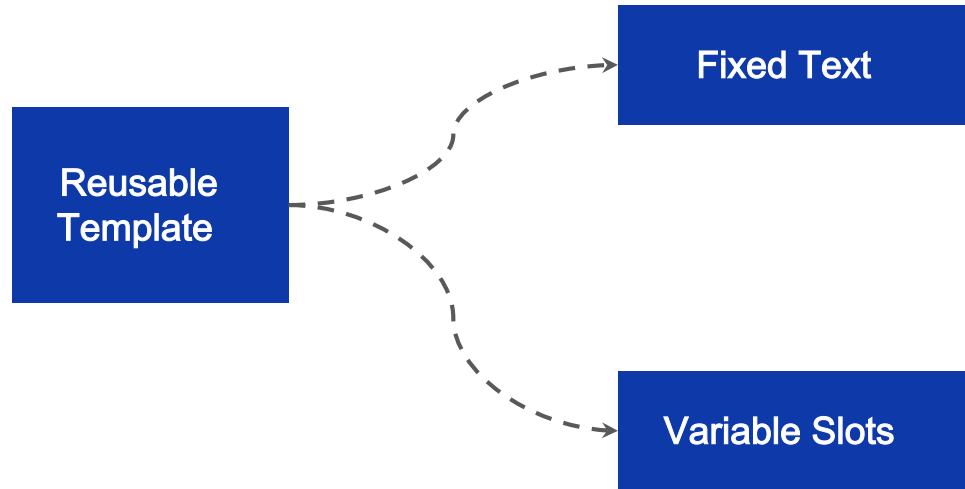- What are APIs?

Prompt Engineering Overview

Prompt = Specific set of instructions sent to a LLM to accomplish a task.

Engineering = Iteratively deriving a specific prompt for the task.

```
                              ┌──────────────┐
          ┌─────────┐         │  One -off    │
          │ Prompt  │         │  Prompt      │
          └────┬────┘         └──────────────┘
   ┌───────────┼─────────────┐
   │ ┌──────────┐   ┌─────────┐ │         ┌──────────┐
   │ │Parameters│<--│Structure│ │         │Zero -Shot│
   │ └──────────┘   └─────────┘ │         └──────────┘
   └───────────────────────────┘
                    ┌──────────────┐      ┌──────────┐
                    │  Reusable    │----->│Few -Shot │
                    │  Template    │      └──────────┘
                    └──────────────┘
                                  ┌──────────────────┐
                                  │Chain -of -Thought│
                                  └──────────────────┘
```
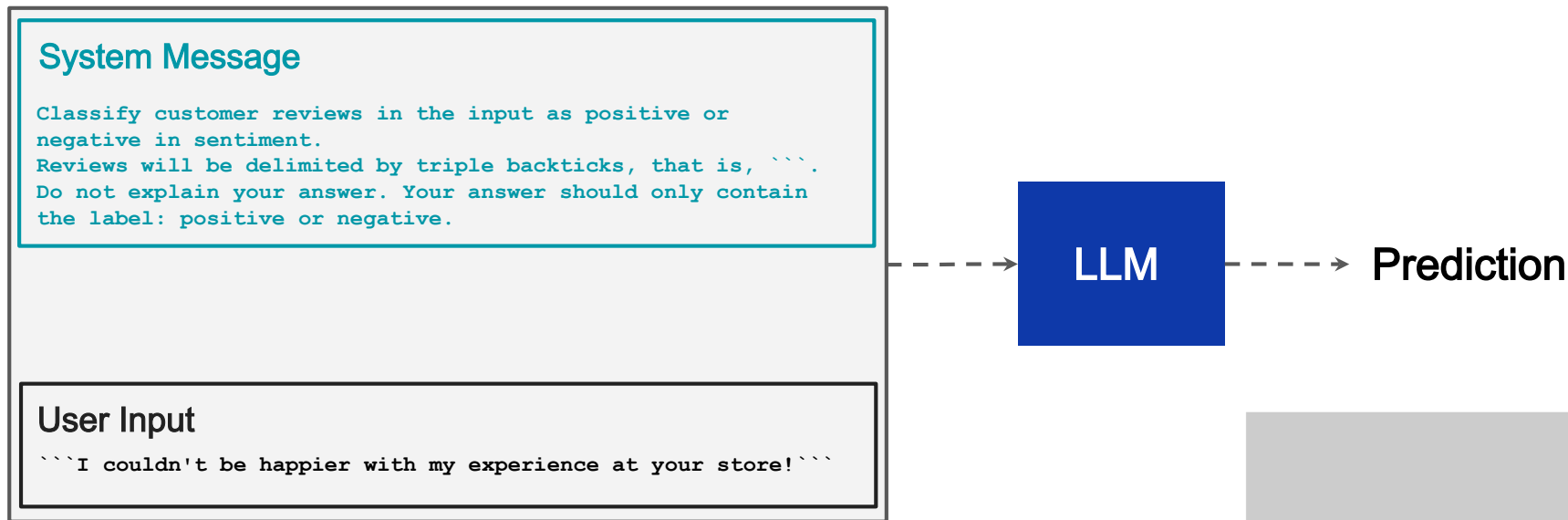
*Also referred to as in -context learning

Reusable Prompt Templates

Components of a Prompt Template

Reusable Prompt Templates

Example of Zero   -Shot Prompt Template   – Sentiment Analysis

System Message

```
Classify customer reviews in the input as positive or
negative in sentiment.
Reviews will be delimited by triple backticks, that is, ```.
Do not explain your answer. Your answer should only contain
the label: positive or negative.
```

User Input

```
```I couldn't be happier with my experience at your store!```
```

LLM ──▶ **Prediction**

Reusable Prompt Templates

Example of Few   -Shot Prompt Template   – Entity Extraction

System Message

Extract entities from customer reviews in the input.
Reviews will be delimited by triple backticks, that is, ```.
Do not explain your answer.

Few-Shot Examples

User: Ordered grey which advertises green lighting, when
you're going for a cheap aesthetic, it's upsetting.
Mouse works fine.
Assistant: Entities: [Mouse]

User Input

```I bought one of these for PC gaming. Loved it, then bought
another for work.
```

LLM → Prediction

Reusable Prompt Templates

Example of Chain   -of-Thought Prompt Template

System Message

<Context>
…
Take a step-by-step approach in your response, and give reasoning before sharing your final answer in the following JSON format:
…

User Input

```I am fuming with anger and regret over my purchase of the XUI890.```

LLM → Prediction
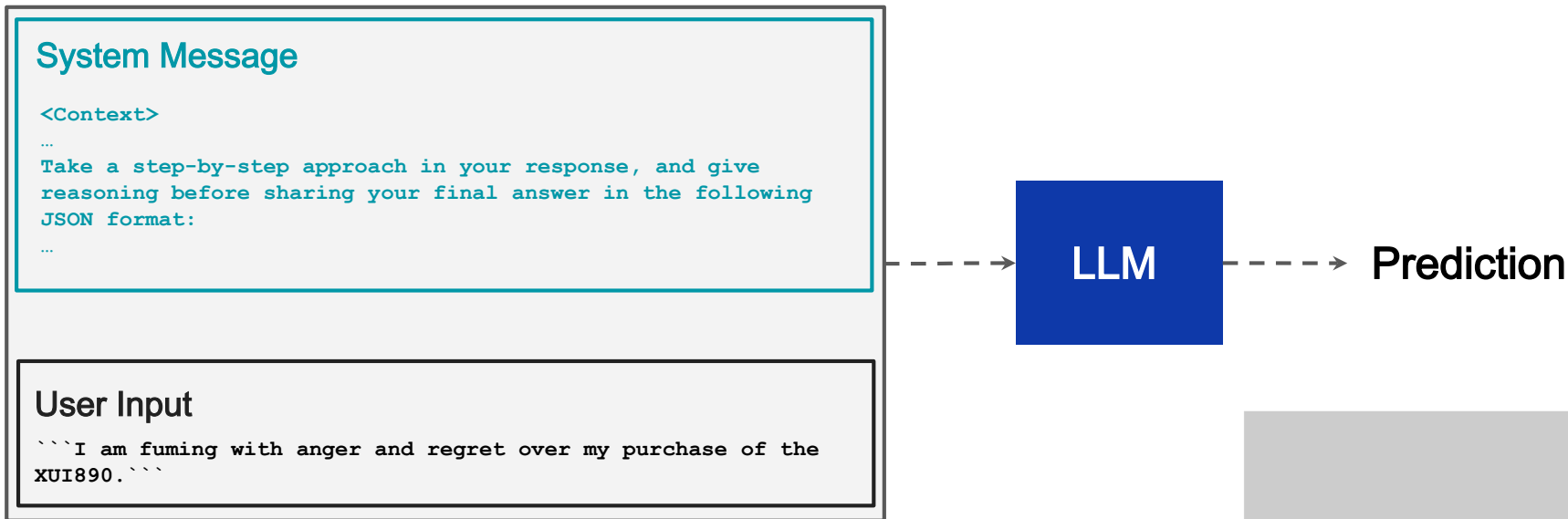
What are APIs?

Application Programming Interfaces (APIs) specify rules of exchange over a network.

Client

Request

POST   JSON

Hosted
Model

Server

Response

STATUS   JSON
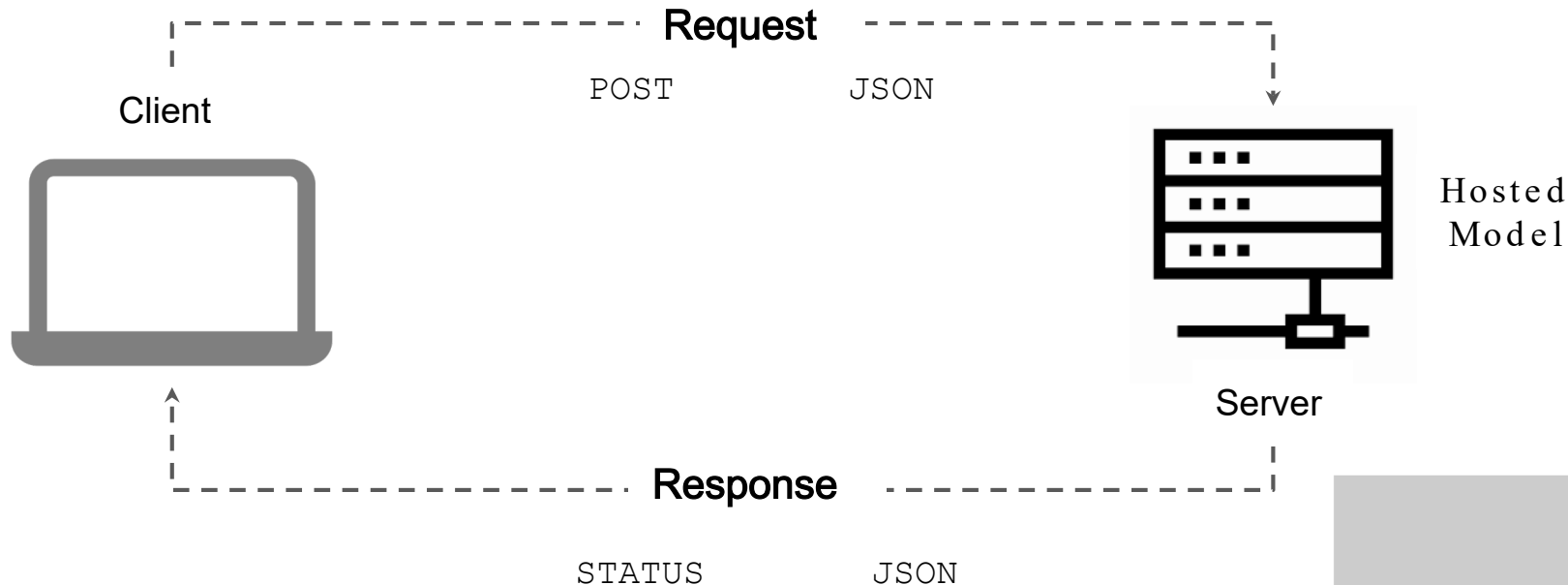
Summary

Here's a brief recap:

- The overview of prompt engineering with an emphasis on the advanced prompting techniques utilizing reusable prompt templates and comprehending their components.
- The types of reusable templates with a focus on Zero-Shot, Few-Shot, and Chain of-Thought prompting and highlighting the key structural differences between each.
- Insight into how curated prompts are employed as input to LLM via the API, elucidating the workflow of the API in delivering predictions.