
Lab 3: Precision Prompting for Information Extraction

Objective:

Learn how to extract structured information using precision prompting and formats like JSON and tables.

Activity 1: Format Response in JSON

Prompt:

Extract the following details from the paragraph and format them in JSON:

- Name
- Age
- Email
- Skills

Input Paragraph:

"John Smith is a 26-year-old software developer. He specializes in Python, JavaScript, and machine learning. You can reach him at john.smith@example.com."

Output:

```
{  
  "name": "John Smith",  
  "age": 26,  
  "email": "john.smith@example.com",  
  "skills": ["Python", "JavaScript", "Machine Learning"]  
}
```

Accuracy: 100%

Format: Well-structured JSON, easily parsable by machines.

Activity 2: Extract Resume Sections

Prompt:

Extract the resume sections from the paragraph and present them in tabular format with two columns: Section and Content.

Input Paragraph:

"Alice Johnson is a data analyst with 5 years of experience. She has a Bachelor's in Statistics from XYZ University. Her work experience includes roles at DataCorp and Insight Ltd. She is skilled in SQL, R, and Tableau."

Output:

Section	Content
Name	Alice Johnson
Experience	5 years
Education	Bachelor's in Statistics, XYZ University
Work Experience	DataCorp, Insight Ltd
Skills	SQL, R, Tableau

Accuracy: 95%

Note: It missed labeling "Experience" as "Work Experience" and didn't split company names individually.

Activity 3: Keyword Extraction

Prompt:

Extract the 5 most relevant keywords from the paragraph below:

Input Paragraph:

"Artificial Intelligence is transforming industries. AI models like ChatGPT, BERT, and DALL·E are enabling automation, natural language understanding, and content generation."

Output:

["Artificial Intelligence", "ChatGPT", "BERT", "Automation", "Content Generation"]

Accuracy: 100%

Format: Clean list of keywords, relevant and contextually accurate.

Conclusion:

Using precise prompts, ChatGPT can return highly structured data formats (JSON, tables, lists). With clear instructions, it performs well in extracting specific fields from unstructured text. While zero-shot extraction works decently, adding context or formatting instructions improves reliability.
