

# Assignment 03: Assignment and Practice of ChatGPT and Its Usage

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## Lab 1: Introduction to ChatGPT

**Objective:**

Understand the basics of ChatGPT, its origin, capabilities, and real-world applications.

**Activities:**

- Explore the ChatGPT interface
- Study transformer architecture using visualization tools
- Identify use-cases in education, health, business, and creativity

**Output:**

Submit a one-page summary of ChatGPT's working with real-world examples.

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## Lab 2: Types of Prompts and Prompt Engineering Basics

**Objective:**

Learn types of prompts (instructional, interrogative, zero/few-shot).

**Activities:**

- Try zero-shot vs few-shot prompts
- Design prompts with increasing complexity

**Output:**

Submit 5 examples of each type and compare results.

**Definitions:**

A **prompt** is the input or instruction you give to an AI language model (like ChatGPT) to receive a meaningful and relevant response. Prompts can be as simple as a question or as complex as a scenario with constraints.

**Prompt Engineering** is the art and science of designing effective prompts to get the most accurate, relevant, and useful responses from AI models. It involves techniques such as:

- Providing context
  - Giving clear instructions
  - Using examples (few-shot prompting)
  - Formatting requests (like JSON, table, bullet points)
  - Asking for step-by-step reasoning
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## Lab 3: Precision Prompting for Information Extraction

**Objective:**

Extract structured data from ChatGPT responses.

**Activities:**

- Ask ChatGPT to format its response in JSON or tabular format
- Extract contact info, resume sections, keywords from a paragraph

**Output:**

Document prompt + output accuracy and format.

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## Lab 4: Summarization and Text Transformation

**Objective:**

Use ChatGPT for summarization, rewriting, tone transformation.

**Activities:**

- Summarize news articles, research abstracts
- Rewrite emails in formal/informal tone

**Output:**

Summary and transformation report with original vs output.

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## Lab 5: ChatGPT in Code Generation and Debugging

**Objective:**

Explore how ChatGPT can assist in programming.

**Activities:**

- Generate Python, C++, or Java code from prompts
- Debug a given code snippet using ChatGPT

**Output:**

Compare ChatGPT's code with expected output.

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## Lab 6: Domain-Specific Applications

**Objective:**

Use ChatGPT in domain-specific tasks.

**Activities (choose any one):**

- Medical chatbot simulation
- Legal document summarization
- Educational quiz generation

**Output:**

Document the prompt design and output evaluation.