

# 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:

- Explored the ChatGPT interface
- Studied transformer architecture using visualization tools
- Identified use-cases in education, health, business, and creativity

### Output:

ChatGPT is a conversational AI model developed by OpenAI, based on the transformer architecture. It uses deep learning to generate human-like responses to textual prompts. It has been trained on diverse datasets and can perform tasks such as writing, summarizing, translating, and answering questions.

Real-World Applications:

- Education: Tutoring, answering questions, writing assistance
- Healthcare: Symptom checkers, FAQs, appointment scheduling bots
- Business: Customer support automation, content creation, report generation
- Creativity: Writing stories, generating music lyrics, poetry

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

### Objective:

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

### Activities:

- Tried zero-shot vs few-shot prompts
- Designed prompts with increasing complexity

### Output:

Examples of Prompt Types:

#### Zero-Shot Prompts:

1. Translate this to French: 'Good evening'
2. What is the capital of Japan?
3. List three healthy fruits.
4. Explain gravity in simple words.
5. Write a sentence using the word 'empathy'.

#### Few-Shot Prompts:

1. Translate 'Hello' to Spanish: 'Hola'. Now translate 'Goodbye'.
2. Example: '3 + 2 = 5'. Now solve: '6 + 4 = ?'
3. Example: 'Birds can fly'. Now describe what fish can do.
4. Example: Define honesty – 'Being truthful'. Now define respect.
5. Example: Email - Subject: Leave. Body: I am unwell. Now write an email for a vacation request.

#### Instructional Prompts:

1. Write a summary of this paragraph.
2. Provide a table comparing petrol and electric vehicles.
3. List 5 uses of AI in education.
4. Convert this paragraph into bullet points.
5. Explain blockchain to a beginner.

#### Comparison:

Zero-shot prompts are simple but may not always produce accurate results.

Few-shot prompts provide context and examples, leading to better responses.

Instructional prompts are useful for getting structured and specific outputs.

## Lab 3: Precision Prompting for Information Extraction

### Objective:

Extract structured data from ChatGPT responses.

### Activities:

- Asked ChatGPT to format its response in JSON or tabular format
- Extracted contact info, resume sections, and keywords from a paragraph

### Output:

Prompt:

Extract Name, Email, Phone, and Skills from the paragraph below and format as Rahul.

Input Paragraph:

Rahul is a software engineer with expertise in Python and JavaScript. You can reach him at rahul05@email.com or 9876543210.

Output:

```
{  
  "Name": "Rahul",  
  "Email": "rahul05@email.com",  
  "Phone": "9876543210",  
  "Skills": ["Python", "JavaScript"]  
}
```

Accuracy: 100% (All fields correctly extracted).

## Lab 4: Summarization and Text Transformation

### Objective:

Use ChatGPT for summarization, rewriting, and tone transformation.

### Activities:

- Summarized text into concise points
- Rewrote text in different tones (formal/casual)
- Paraphrased content for simplicity

### Output:

#### 1. Summarization:

Input: A paragraph about climate change

Output: - Global temperatures are rising

- Ice caps are melting
- Sea levels are increasing
- Human activities are major contributors

#### 2. Tone Transformation:

Formal: 'Please ensure your attendance at the meeting.'

Casual: 'Hey, don't forget to show up for the meeting!'

#### 3. Rewriting:

Original: 'The internet has revolutionized communication.'

Paraphrased: 'People now communicate much faster thanks to the internet.'

### Conclusion/Reflection:

This assignment provided practical experience in working with ChatGPT, understanding prompt engineering techniques, and using AI for data extraction, summarization, and rewriting tasks. It demonstrated the importance of crafting clear and effective prompts to get accurate responses from AI models.