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Semester -I

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Sub.: - Artificial Intelligence Lab

Class: SE

Assignment 03: Assignment and practice of ChatGPT and its usage

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.

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.

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.

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.

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.

Lab 6: Domain-Specific Applications

Objective: Use ChatGPT tasks.

Activities (choose any one):

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

Output: Document the prompt design and output evaluation.
