

LAB - 1

1. Exploring the ChatGPT Interface

ChatGPT, developed by OpenAI, provides a clean and interactive interface for users to communicate with an advanced AI model. The interface includes a chat box, response area, sidebar for saved chats, and options to upload files or choose different AI models. I experimented with various prompts, such as questions, commands, and code requests. It allows for structured outputs (tables, JSON), context-aware answers, and tone modifications. The simplicity and responsiveness of the interface make it accessible for tasks ranging from casual conversations to technical problem-solving.

2. Studying Transformer Architecture

The core technology behind ChatGPT is the transformer architecture, introduced by Vaswani et al. It utilizes a mechanism called self-attention, which helps the model understand relationships between words in a sentence, regardless of order. I studied this using visual tools such as The Illustrated Transformer and Hugging Face's attention viewer. Concepts like multi-head attention, positional encoding, and encoder-decoder blocks were clearly demonstrated. These visuals helped me understand how ChatGPT processes and generates human-like text with high accuracy and context awareness.

3. Real-World Applications of ChatGPT

ChatGPT has powerful applications across various sectors:

Education: Generating quizzes, summarizing notes, explaining complex concepts in simple terms.

Healthcare: Simulating a medical assistant chatbot, summarizing patient records or articles.

Business: Writing professional emails, generating business reports, drafting marketing content.

Creativity: Writing poetry, stories, social media captions, and brainstorming content ideas.

LAB – 2

1. Instructional Prompts

Write a short poem about a rainy day.

Rainy Day

Raindrops tapping on the glass,
Clouds drift slowly as they pass.
Puddles form where children play,
Washing all the dust away.

Gray above, but calm below,
In the rain, the world moves slow.
A quiet peace, a soft refrain—
There's magic in a gentle rain.

Translate this sentence into French: I love learning.

The French translation of "I love learning" is:
J'aime apprendre.

Solve $3 + 5$

$3 + 5 = 8$ ✓

Generate a Python program to check whether given number is even or odd

Sure! Here's a simple Python program to check whether a given number is even or odd:

```
python
# Program to check if a number is even or odd

# Get input from the user
number = int(input("Enter a number: "))

# Check if the number is even or odd
if number % 2 == 0:
    print(f"{number} is even.")
else:
    print(f"{number} is odd.")
```

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2. Interrogative Prompts

What is the capital of USA?

The capital of the USA is **Washington, D.C.**

who discovered gravity

Isaac Newton

Why do we see different phases of the moon?

We see different phases of the Moon because of its **orbit around the Earth** and the way **sunlight shines on it**.

When was the first computer invented?

The first computer was invented in the **1940s**.

Who is the president of India?

The **President of India** is **Smt. Droupadi (Draupadi) Murmu**, who has been serving since **25 July 2022** as the 15th President of India [Wikipedia +10](#) .

3. Zero-shot Prompts

Write a motivational quote.

"Believe in yourself. Every great journey begins with a single step fueled by courage." 🌟

List three benefits of meditation.

Here are three key benefits of meditation:

1. **Reduces Stress** – Meditation helps calm the mind and lowers cortisol levels, reducing anxiety and tension.
2. **Improves Focus** – Regular practice enhances attention span and concentration.
3. **Boosts Emotional Health** – It promotes self-awareness, emotional balance, and a more positive outlook on life.

Summarize this sentence: The cat sat on the mat.

A cat was sitting on a mat.

Convert this to passive voice: The teacher explained the topic.

The topic was explained by the teacher.

4. Few-shot Prompts

Example: Translate 'Hello' to French → Bonjour. Now translate 'Goodbye'.

Translate 'Goodbye' to French → Au revoir.

Example: Summarize: 'Birds can fly.' → 'Birds fly.' Now summarize: 'The sun shines brightly.'

The sun shines.

Example: Convert to past tense: 'He walks.' → 'He walked.' Now: 'She dances.'

She danced.

"Example: Turn into question: 'You are ready.' → 'Are you ready?' Now: 'She is coming.'"

Is she coming?

Example: Change tone from informal to formal: 'Hey, what's up?' → 'Good afternoon, how may I help you?' Now: 'Wanna hang out later?'

Would you like to spend some time together later?