Introduction to ChatGPT

# **Objective**

* Understand the basics of ChatGPT
* Learn about its origin and capabilities
* Explore real-world applications

## **Activities**

### **1. Explore the ChatGPT Interface**

* **Access**: Visit [chat.openai.com](https://chat.openai.com/)
* **Features**:  
  + Natural language interactions
  + Summarization, translation, coding assistance
  + File and image uploads (Pro features)
  + Custom instructions and chat history

**Example Task**: Ask ChatGPT to explain a complex topic in simple terms.

### **2. Study Transformer Architecture**

* **Core Concept**: ChatGPT is built on the **Transformer** model, introduced in the paper *"Attention is All You Need"* (Vaswani et al., 2017).
* **Key Components**:  
  + **Self-Attention**: Determines the importance of each word in a sentence.
  + **Layers & Heads**: Capture deeper context and relationships.
  + **Decoder-Only Architecture**: Focuses on generating text from input prompts.

**Visualization Tools**:

* Transformer Explainer
* Dodrio: Exploring Transformer Models

### **3. Identify Use-Cases**

| **Domain** | **Examples** |
| --- | --- |
| Education | Tutoring, content summarization, language learning |
| Health | Symptom checking, mental health support |
| Business | Customer service, email automation |
| Creativity | Storytelling, idea generation, scriptwriting |

## **Real-World Applications**

### **1. Education**

* **Tutoring**: Provides personalized assistance in subjects like mathematics and science.
* **Content Creation**: Assists educators in generating lesson plans and quizzes.
* **Language Learning**: Offers conversational practice and grammar correction.

### **2. Healthcare**

* **Medical Information**: Supplies general information on symptoms and treatments.
* **Mental Health Support**: Acts as a conversational agent for emotional support.
* **Administrative Assistance**: Helps in scheduling and managing appointments.

### **3. Business**

* **Customer Service**: Powers chatbots for handling customer inquiries.
* **Content Generation**: Assists in creating marketing materials and product descriptions.
* **Data Analysis**: Summarizes reports and extracts insights from data.

### **4. Creativity**

* **Writing Assistance**: Aids in drafting stories, poems, and scripts.
* **Idea Generation**: Provides brainstorming support for creative projects.
* **Game Development**: Generates dialogue and narratives for interactive media.