CODEXINTERN

◆ **Domain:** Python Development

◆ **Starting Date:** 1st July, 2025

◆ **Ending Date:** 31th July, 2025

◆ **Deadline For Task Submission:** 31th July, 2025

◆ **Do any 3 of the following.**

■ Slab 1 [For Beginners]

✓ Using the Pandas library, load a CSV file and perform basic data analysis tasks, such as calculating the average of a selected column. Additionally, use Matplotlib to create visualizations, including bar charts, scatter plots, and heatmaps, to analyze the data. Provide insights and observations based on the analysis and visualizations.

✓ Develop a linear regression model to predict house price based on features such as the number of rooms, location, size and other relevant factors. Collect a suitable dataset from Kaggle, preprocess it, and train the model to make accurate predictions.

✓ Create a "Matrix Operations Tool" using Python and the NumPy library. The application should allow users to input matrices and perform operations like addition, subtraction, multiplication, transpose, and determinant calculation. Include an interactive interface to display results in a structured format.

■ Slab 2 [For Intermediate]

✓ Voice-Activated Personal Assistant: Build a personal assistant that performs tasks like setting reminders, checking the weather, and reading the news. Integrate with speech recognition and text-to-speech libraries to create an interactive, voice-activated experience.

✓ Develop a web application using Flask or Django that performs sentiment analysis on user entered text. The application should classify the text as positive, negative, or neutral using TextBlob and display polarity and subjectivity scores.

✓ Integrate Google Gemini in Python using the Google Generative AI API. Implement a system that can remember conversation history, including previous user messages and responses. Additionally, enable real-time data retrieval by integrating the Google Search API so the model can answer real-time queries, such as the current price of Bitcoin or the weather in Mumbai.

✓ Create Speech to Image generation using monsterapi, that can take any language audio as input and generate image based on speech.