

CODEXINTERN

- ◆ **Domain:** Python Development
- ◆ **Starting Date:** 2nd January, 2025
- ◆ **Ending Date:** 27th January, 2025
- ◆ **Deadline For Task Submission:** 27th January, 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.
- ✓ Automated Google Search Results Scraper: Build a tool that performs Google searches and extracts the top results. Selenium or BeautifulSoup can be used to gather titles, links, and short descriptions, useful for research or SEO analysis.
- ✓ 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.
- ✓ Develop a "Weather Dashboard" using Python and the Flask or Django framework. The application should allow users to enter a city name and display real-time weather details such as temperature, humidity, and weather conditions by fetching data from a weather API (e.g., OpenWeatherMap).