LinkedIn Job Trend Analysis

Introduction:

In the current data-driven world, understanding job market trends is essential for both job seekers and companies. This project focuses on analyzing a dataset of job postings to realise the most demanding skills, popular job roles, and geographical demand across cities. By implementing data analytics and visualization techniques, the project helps recommend skillsets tailored to specific job roles and locations.

Abstract:

This project involves cleaning and analyzing job postings data to identify high-demand roles and their corresponding skill requirements. Using Python and data visualization libraries like Seaborn and Matplotlib we can explore job titles, locations, and inferred skills from the titles. The key outcomes include a skill vs role matrix, top job roles, city-wise skill heatmap, and skill recommendations for in-demand positions. The analysis helps professionals and companies in developing their goals with real-world job trends.

Tools Used:

- **Python Libraries (pandas, matplotlib, seaborn, re)**: Data cleaning, transformation, and visualization.
- **Excel**: For storing the skill-role matrix and job demand outputs.
- **IDE**: For development and testing.
- **CSV Dataset**: Raw job postings.

Steps Involved in Building the Project:

- **Data Loading:** Read the job postings dataset using pandas.read_csv() with appropriate encoding.
- **Data Cleaning:** Normalize and strip whitespace, convert text to lowercase.
- **Skill Inference:** Extract skills from job titles using a predefined keyword list (ex: Python, SQL, Excel, etc.).

- **Exploding Skills:** Handle multiple skills per job posting using explode() to create one row per skill.
- **Top Cities & Skills:** Identify top 5 cities and top 10 skills based on frequency.
- **Filtering Data:** Filter the dataset to include the top cities and top skills.
- **Heatmap:** Create a heatmap showing the distribution of top skills across top cities using Seaborn.
- **Skill vs Role Matrix:** Build and export a matrix showing which skills are most associated with which job roles.
- **Job Demand Analysis:** Identify and export the top 20 in-demand job roles.
- **Skill Recommendation:** For the top 5 job roles, recommend the top 5 associated skills based on the matrix.

Conclusion:

This job market analysis provides meaningful insights into which skills are most valued across various roles and cities. By identifying trends and skill-role relationships, the project offers recommendations for job seekers aiming to enhance their profiles. It also helps companies and job seekers to understand current market needs, allowing them to tailor hiring or training strategies effectively.