Stack Overflow Developer Survey Analysis 2024

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OUTLINE

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EXECUTIVE SUMMARY

- **Executive Summary**

- This project analyzes the 2024 Stack Overflow Developer Survey data.

- The goal is to identify current and future technology trends among developers.

- Tools used include Excel, Python, and Google Looker Studio for data visualization.

- The dashboard presents insights on languages, databases, frameworks, and demographics.

- Findings highlight Python and PostgreSQL as leading technologies with growing future demand.
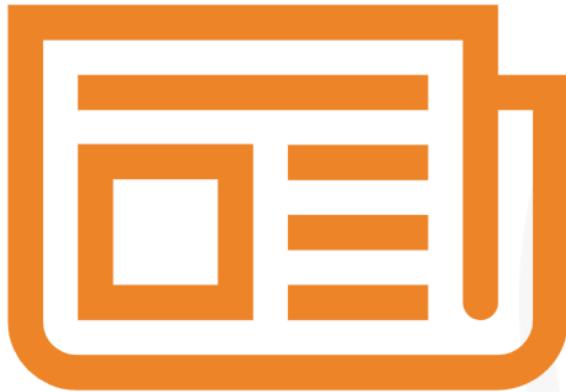
INTRODUCTION

- **Introduction**

- The technology landscape evolves rapidly; developers adapt by learning new tools and languages.

- This project provides insights into technology usage and future preferences among developers.

- The analysis supports recruiters, managers, and learners in understanding market trends.

- The results help identify which technologies are becoming dominant and which are emerging.

METHODOLOGY

- **Dataset:** Stack Overflow Developer Survey 2024 (modified subset).
- **Data Source:** Provided via IBM Skills Network repository.
- **Tools Used:** Google Looker Studio for visualization, Excel for cleaning.
- **Steps Taken:**
  - Data cleaning and filtering null values.
  - Creating calculated fields for frequency and ranking.
  - Designing interactive dashboards with filters and visuals.

RESULTS
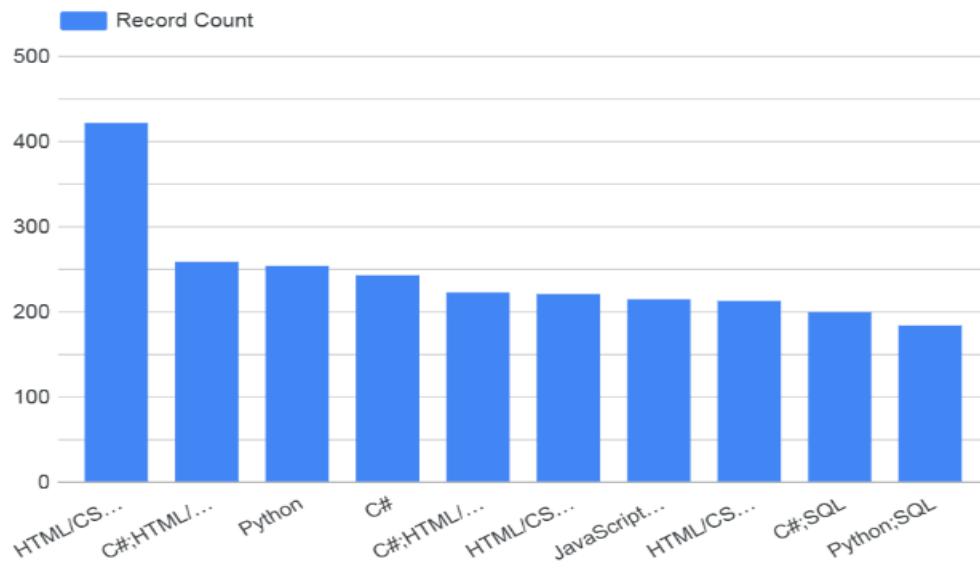
PROGRAMMING LANGUAGE TRENDS
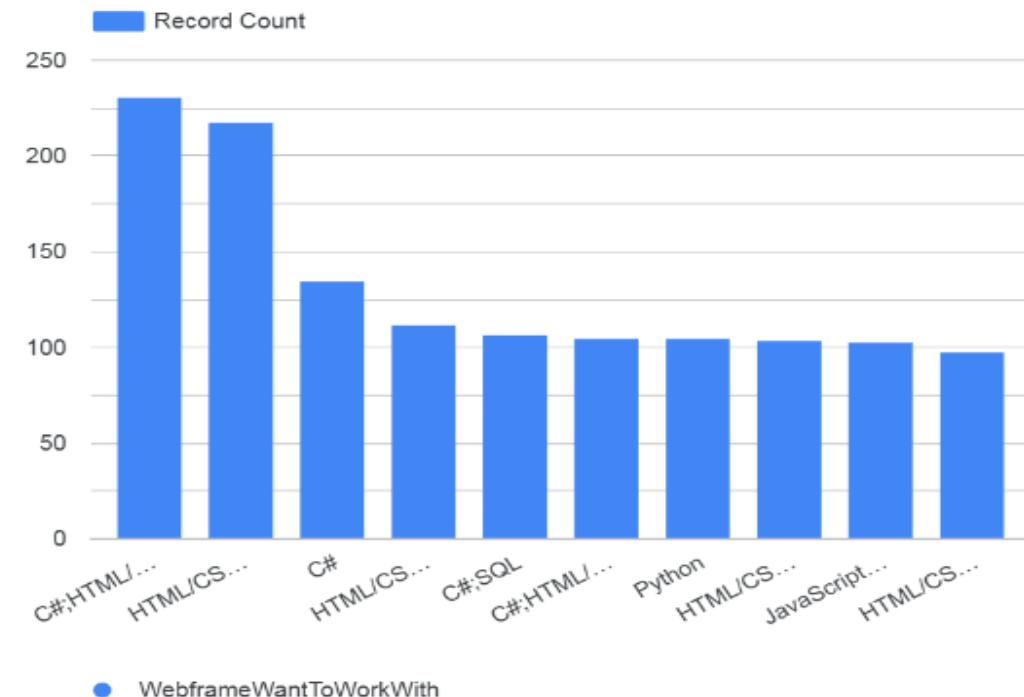
Current Year

<Bar chart of top 10 programming languages for the current year goes here.>

Next Year

< Bar chart of top 10 programming languages for the next year goes here.>

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PROGRAMMING LANGUAGE TRENDS - FINDINGS & IMPLICATIONS
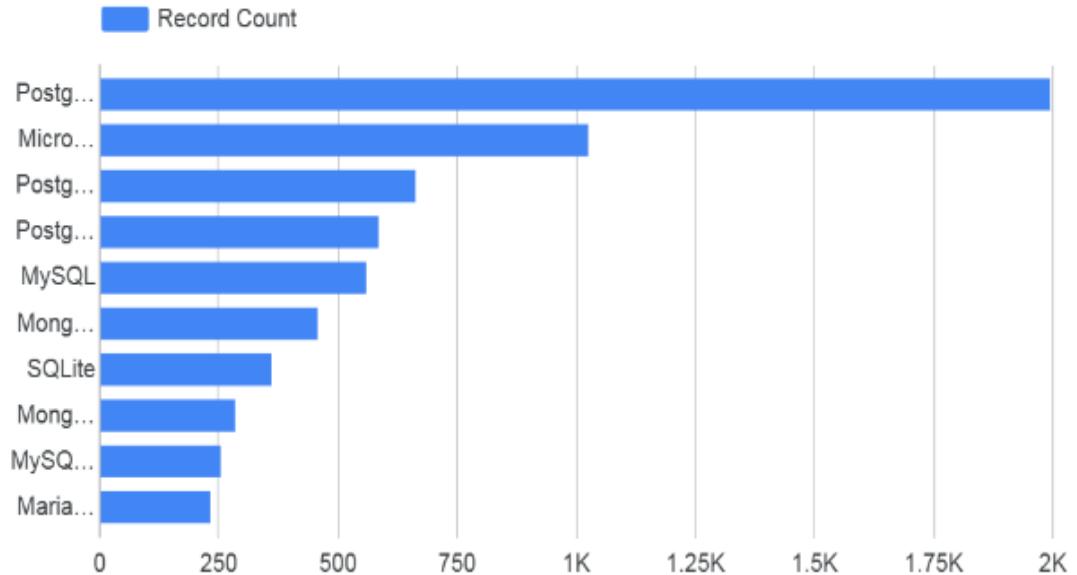
- **Findings:**

- Python remains the most widely used and desired language.

- Emerging languages like Rust and Go show increased interest.

- Legacy languages like PHP and C are declining in demand.

- **Implications:**

- Developers should invest in learning Python and modern backend languages.

- Companies can focus on supporting cross-platform and efficient tools.

- Educational institutions should emphasize trending languages in curricula.

DATABASE TRENDS
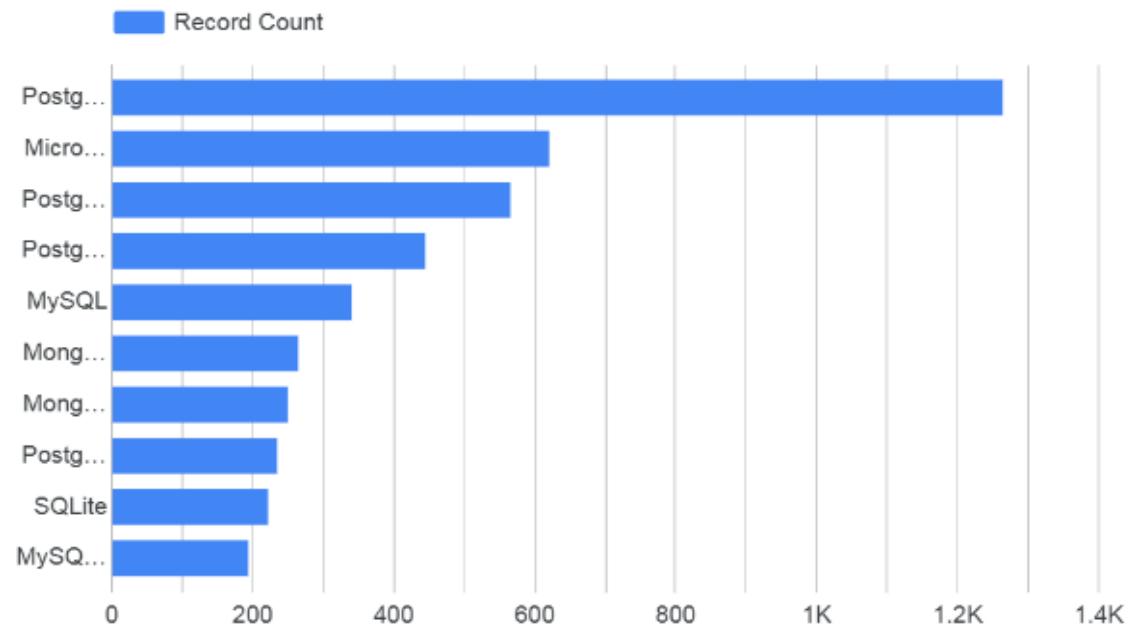
Current Year

< Bar chart of top 10 databases for the current year goes here >

Next Year

< Bar chart of top 10 databases for the next year goes here.>

DATABASE TRENDS - FINDINGS & IMPLICATIONS

- **Findings:**
- SQL-based databases remain dominant.
- NoSQL options like MongoDB and Firebase are gaining traction.
- Cloud-hosted solutions are rising due to scalability needs.

- **Implications:**
- Professionals should understand both SQL and NoSQL systems.
- Organizations can optimize database infrastructure for flexibility and growth.
- Increased focus on data engineering and storage optimization skills.

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DASHBOARD

emadatifsd-jpg/Stack-Overflow-Developer-Survey-Analysis-2024: Visual analysis of the Stack Overflow 2024 Developer Survey using Google Looker Studio."
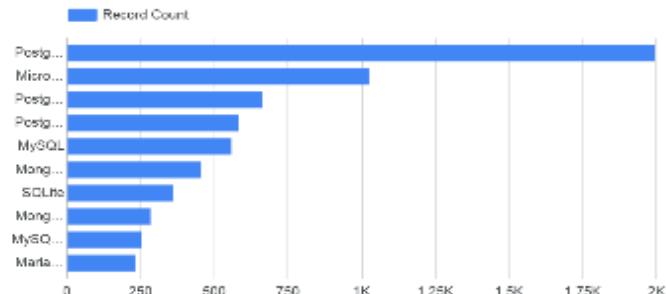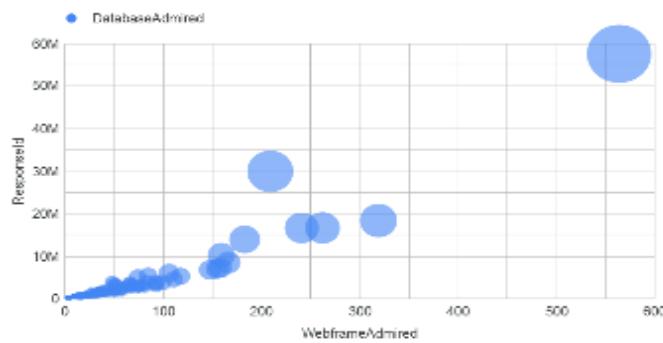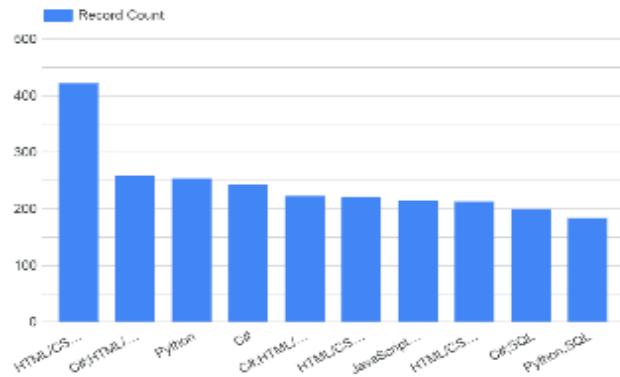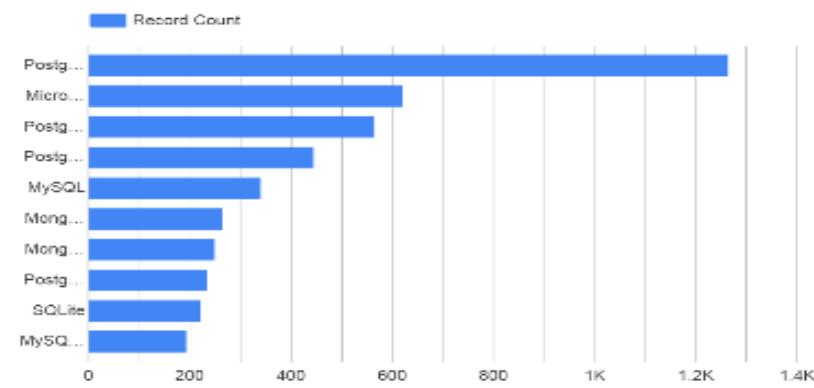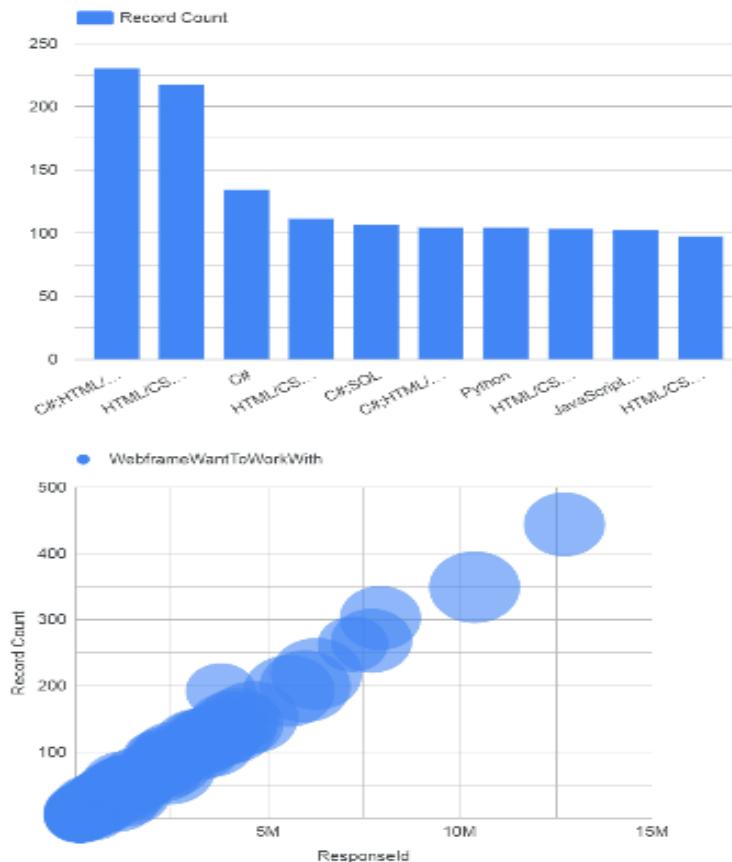
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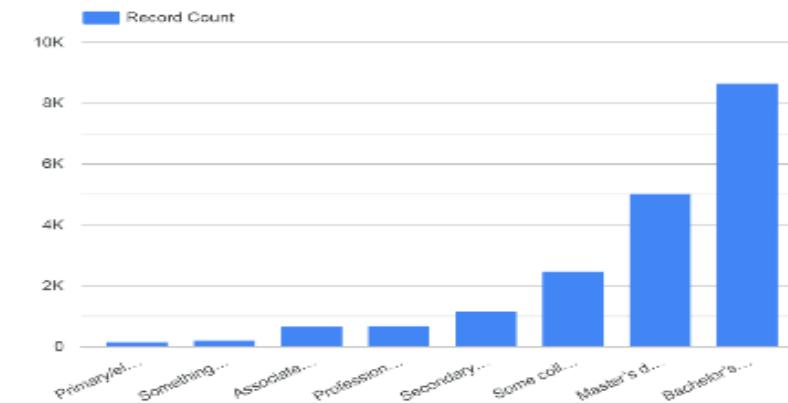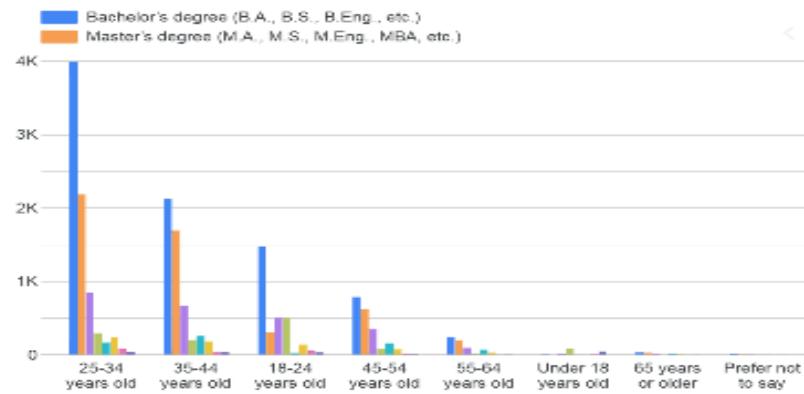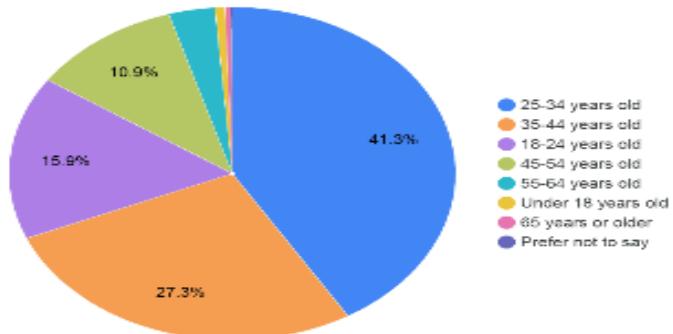
DASHBOARD TAB 1

DASHBOARD TAB 2

DASHBOARD TAB 3

DISCUSSION

- Developers prioritize languages that enhance automation, data handling, and scalability.

- Python's broad applicability continues to attract professionals.

- Education and age correlate with technology adoption and specialization.

- Web development and data-related technologies show cross-functional demand.

OVERALL FINDINGS & IMPLICATIONS

FINDINGS

•Python and PostgreSQL dominate both
current and future demand.
•Cloud and data analytics tools continue to
expand.
•Emerging languages like Go and Rust
indicate future skill trends.

- The job market favors full-stack and data-focused developers.

- Organizations investing in open-source technologies gain flexibility.

- Upskilling in new languages is essential for career advancement.

CONCLUSION

- The 2024 Stack Overflow data reveals ongoing dominance of Python and SQL.

- Developers are shifting toward cloud-based and modern frameworks.

- Data-driven and automation technologies are shaping the industry's future.

- Continuous learning and adaptability remain key to professional success.

APPENDIX
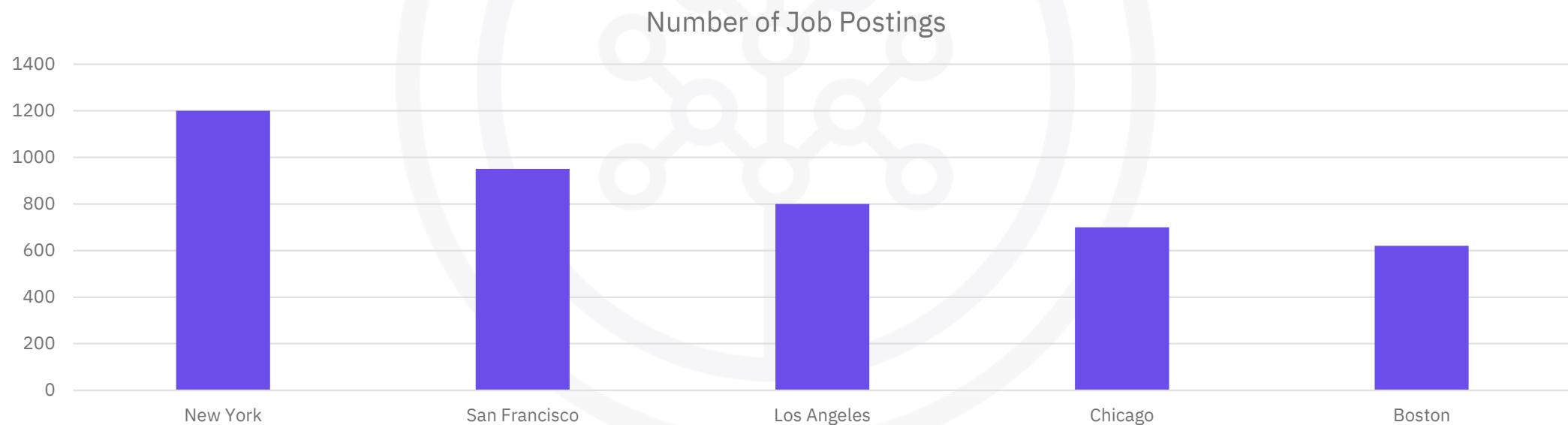
- Include any relevant additional charts, or tables that you may have created during the analysis phase.

JOB POSTINGS

In Module 1 you have collected the job posting data using Job API in a file named "job-postings.xlsx". Present that data using a bar chart here. Order the bar chart in the descending order of the number of job postings.

Number of Job Postings

POPULAR LANGUAGES

In Module 1 you have collected the job postings data using web scraping in a file named "popular-languages.csv". Present that data using a bar chart here. Order the bar chart in the descending order of salary.