

2024 Developer Survey Analysis

Dogan the Analyst
2025

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OUTLINE



- Executive Summary
- Introduction
- Methodology
- Results
 - Visualization – Charts
 - Dashboard
- Discussion
 - Findings & Implications
- Conclusion
- Appendix

EXECUTIVE SUMMARY



- Common Technology Usage Trend
 - Programming Language
 - Database
 - Platform
 - Web framework
- Wanted Technology Trend
 - Programming Language
 - Database
 - Platform
 - Web framework
- Demographic
- Age, Education Level, Work Types
- Industry & Usage Fields of AI
- Yearly Compensation Correlations (Experience & Satisfaction)



INTRODUCTION



- Analyze global developer technology trends in software and web development
- Purpose of the analysis
 - Define the top languages, databases, platforms and web frameworks
 - Define the most wanted technologies to work with
 - Define the demographic relationships
 - Define the extra other information
- Target audience
 - Developers, Analysts
 - HR, IT workers
 - Students in computer science or related fields



METHODOLOGY



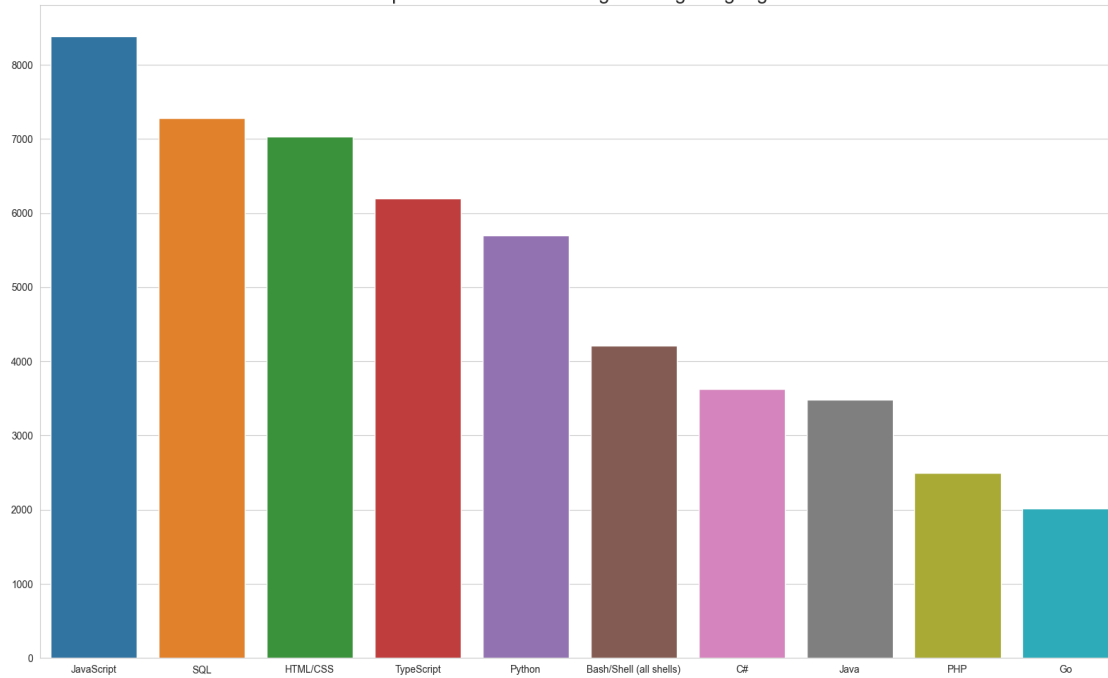
- Data Collection
 - Stack Overflow 2024 Developer Survey
 - IBM provided API
- Data Wrangling
- Exploratory Data Analysis
- Data Cleaning
- Data Visualization
- Tools
 - Python, Pandas, Numpy, Matplotlib, Seaborn
 - IBM Cognos Analytics
 - SQL (MySQL)



PROGRAMMING LANGUAGE TRENDS

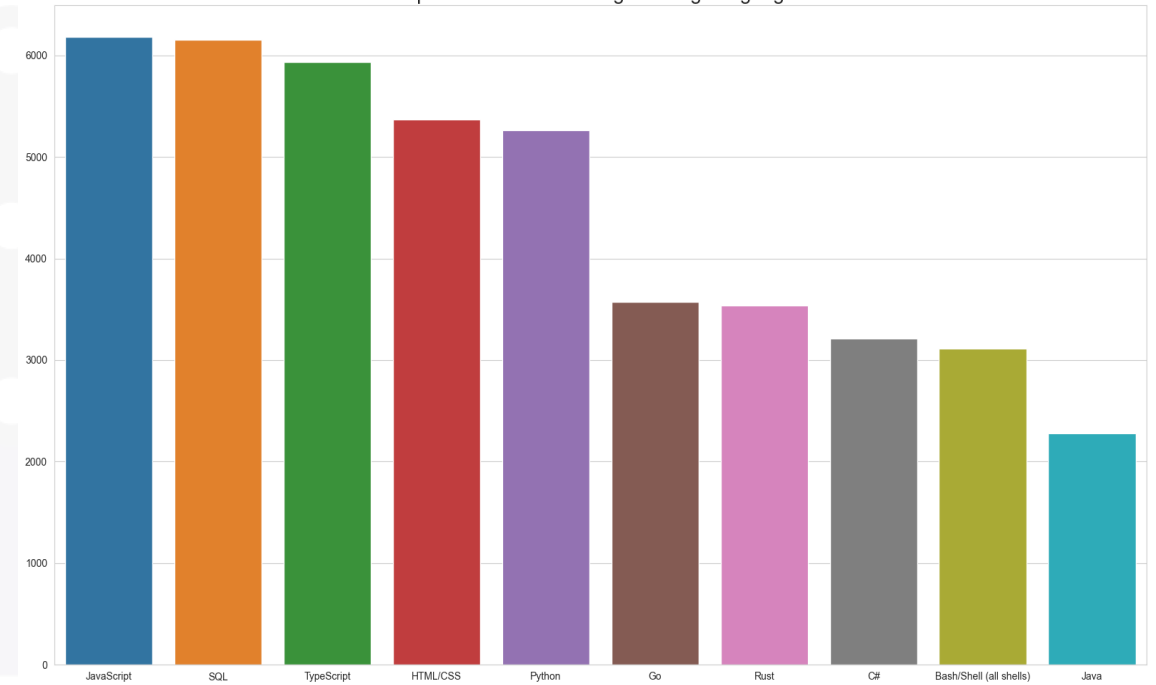
Current Year

Top 10 Most Common Programming Languages



Next Year

Top 10 Most Wanted Programming Languages



PROGRAMMING LANGUAGE TRENDS - FINDINGS & IMPLICATIONS

Findings

- JavaScript is top trending languages among developers
- JavaScript and SQL are still maintaining their popularity in the dev community
- Python, HTML/CSS and TypeScript can be considered popular

Implications

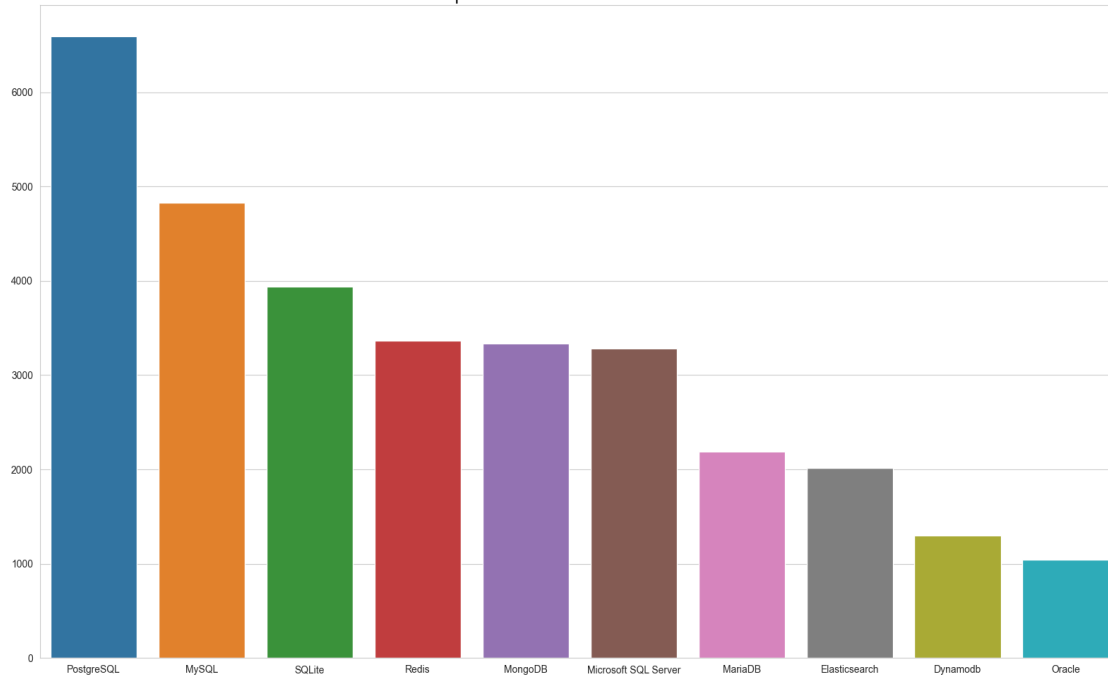
- Go and Rust are on the rise among the languages developers want to work with
- JavaScript and SQL are crucial to learn
- Java follows the others in last place



DATABASE TRENDS

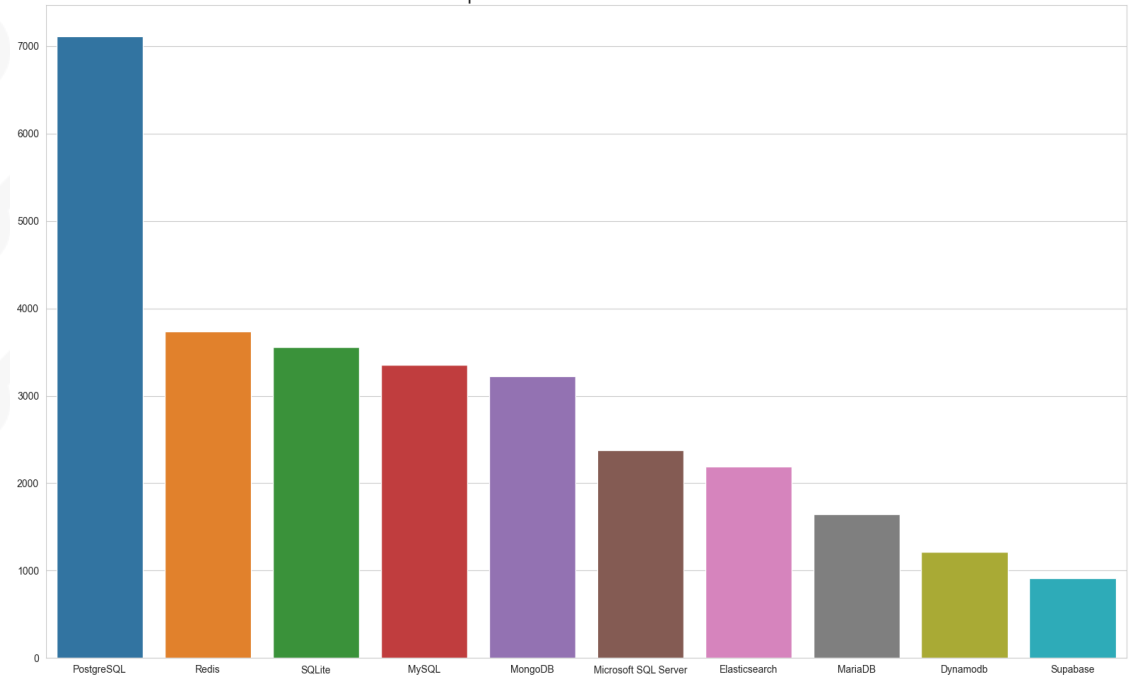
Current Year

Top 10 Most Common Databases



Next Year

Top 10 Most Wanted Databases



DATABASE TRENDS - FINDINGS & IMPLICATIONS

Findings

- PostgreSQL is by far the most popular database
- In both figures, SQLite is in third place
- The top 3 databases are SQL. They are followed by Redis and MongoDB, which are NoSQL

Implications

- SQL databases have important place in the development
- Redis may become more popular in the near future
- Looking at the figures, it can said that PostgreSQL is and will be dominating the field



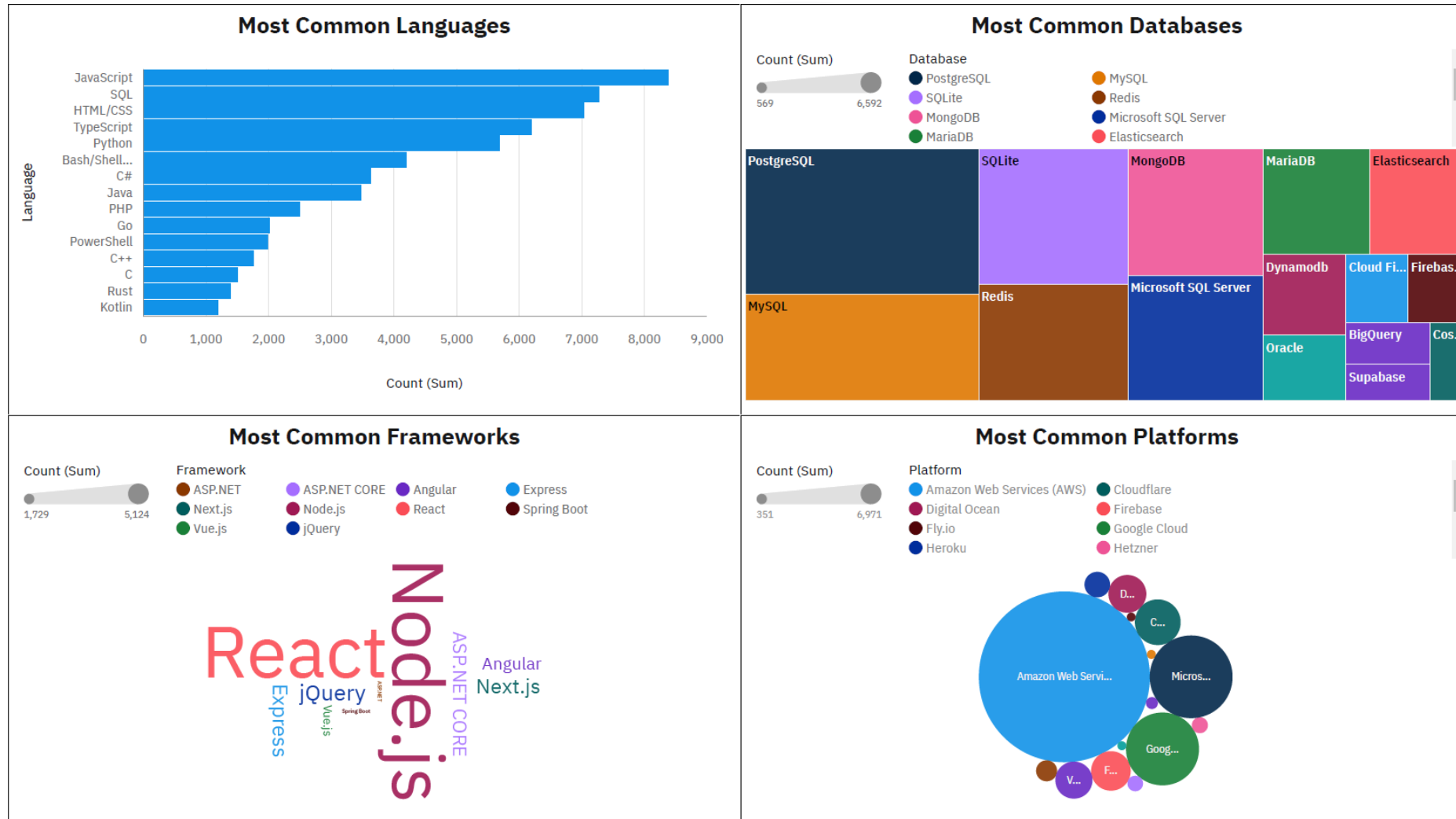
DASHBOARD



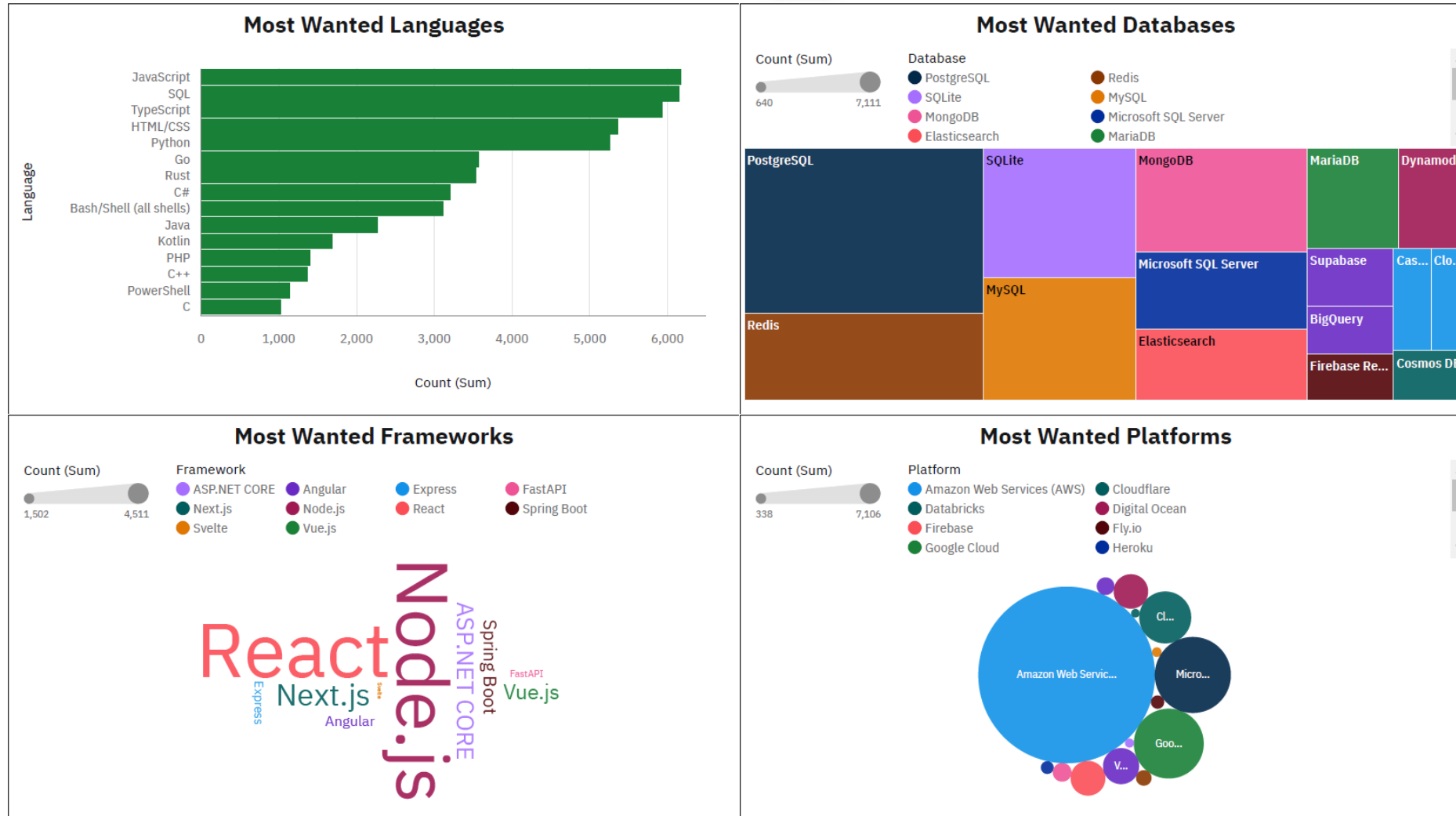
- Current Technologies
 - Language, database, platform, web framework
- Wanted Technologies
 - Language, database, platform, web framework
- Demographic
 - Average salary by country
 - Distribution of education level
 - Countries with the most respondents
 - Job satisfaction by industry



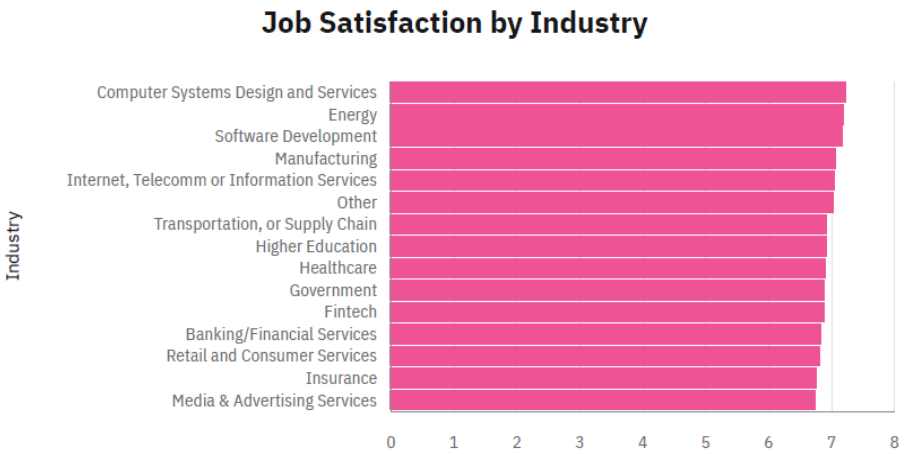
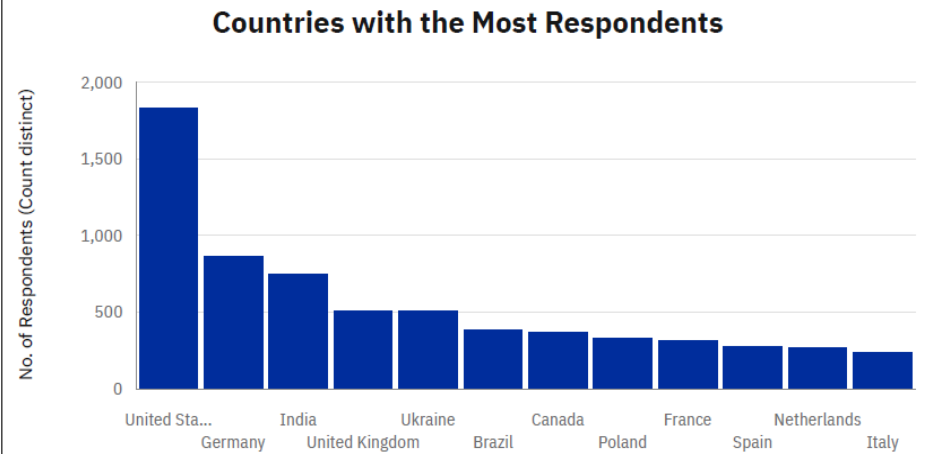
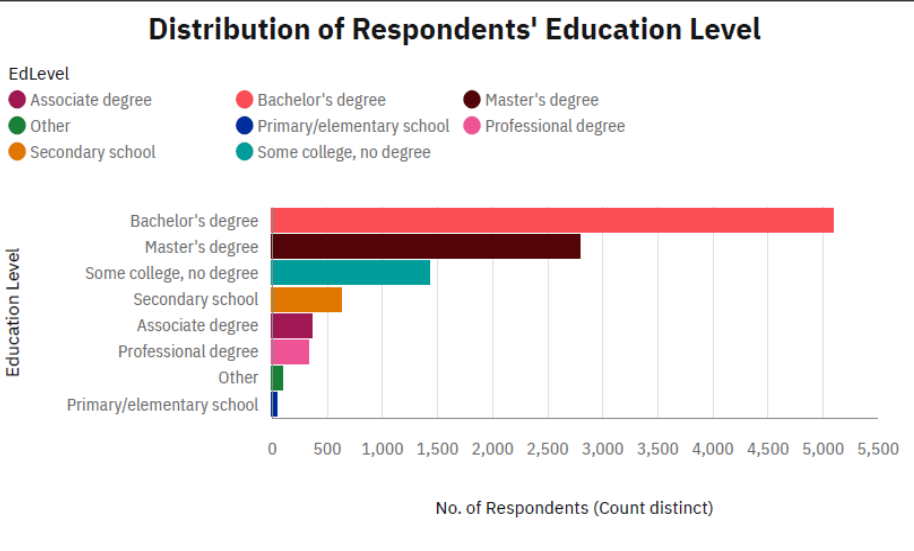
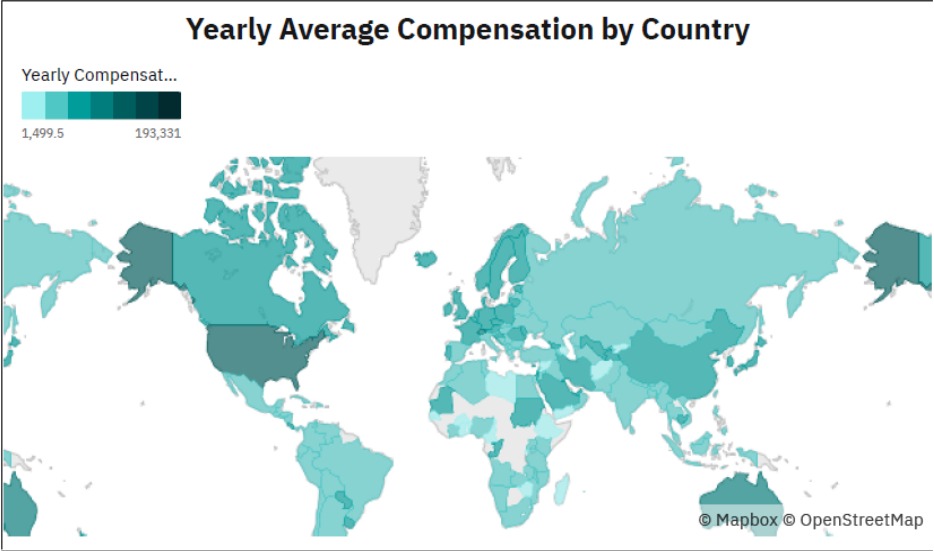
DASHBOARD CURRENT TECHNOLOGIES



DASHBOARD WANTED TECHNOLOGIES



DASHBOARD DEMOGRAPHIC



DISCUSSION



- Technology preferences
- Average salary, education level, respondents, industry



OVERALL FINDINGS & IMPLICATIONS

Findings

- Most satisfied industries are Computer Systems Design and Services, Energy, and Software Development
- The largest number of respondents are from the USA, followed by Germany and India
- Most of the respondents have Bachelor's degree
- Developers in the USA earn higher salaries
- The top most popular and most wanted technologies are in almost the same order, but there are, of course, attention-grabbers

Implications

- There are some essential programming languages to recognize, such as JavaScript, SQL, HTML/CSS and Python
- Getting a degree is not necessary to land a tech job
- North America countries' developers earn more compared to some other countries. This could depend on distribution of respondents' location

CONCLUSION



- JavaScript, SQL, and HTML/CSS are the most popular languages
- PostgreSQL is by far the most popular database
- Developers in the USA earn more compared to others
- Having a degree is not a prerequisite for getting a job in technology

APPENDIX

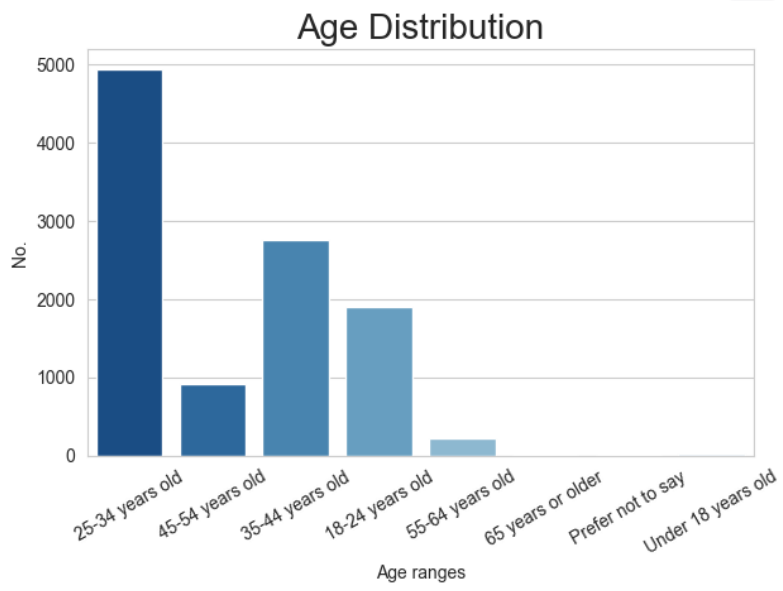


- Age & Education Level
- Work Types
- Industry
- Usage Fields of AI
- Yearly Compensation Corr.
- Job Postings & Popular Languages

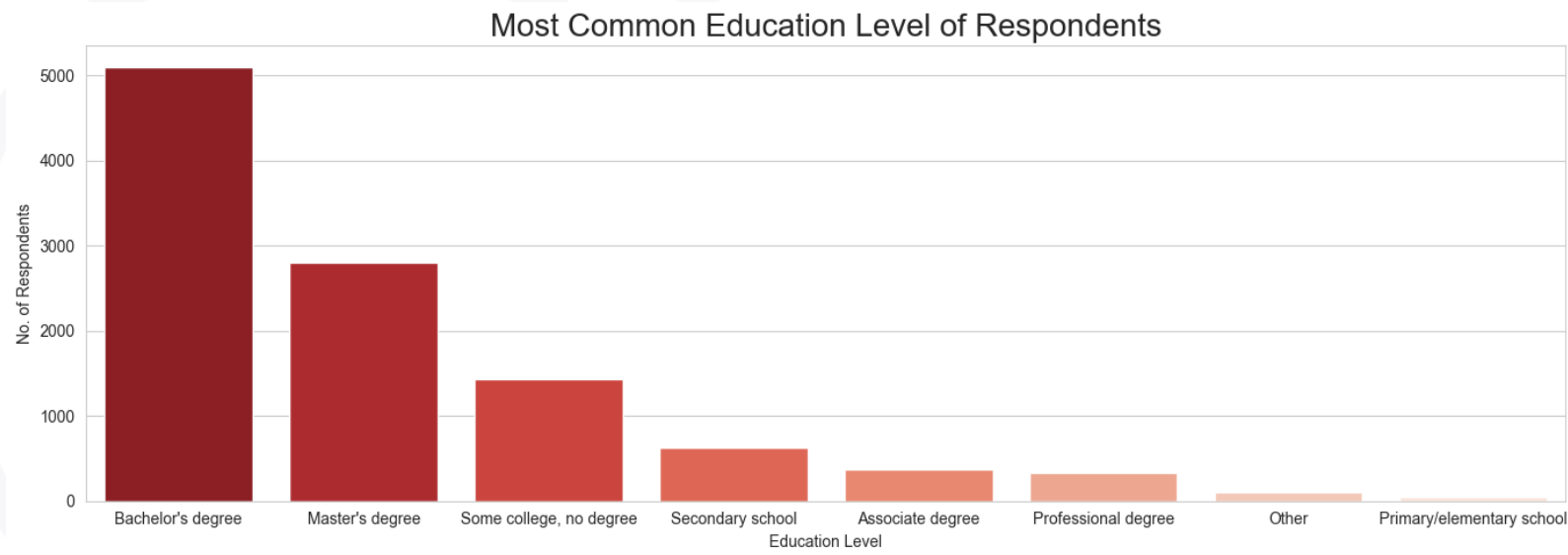


AGE & EDUCATION LEVEL

Age

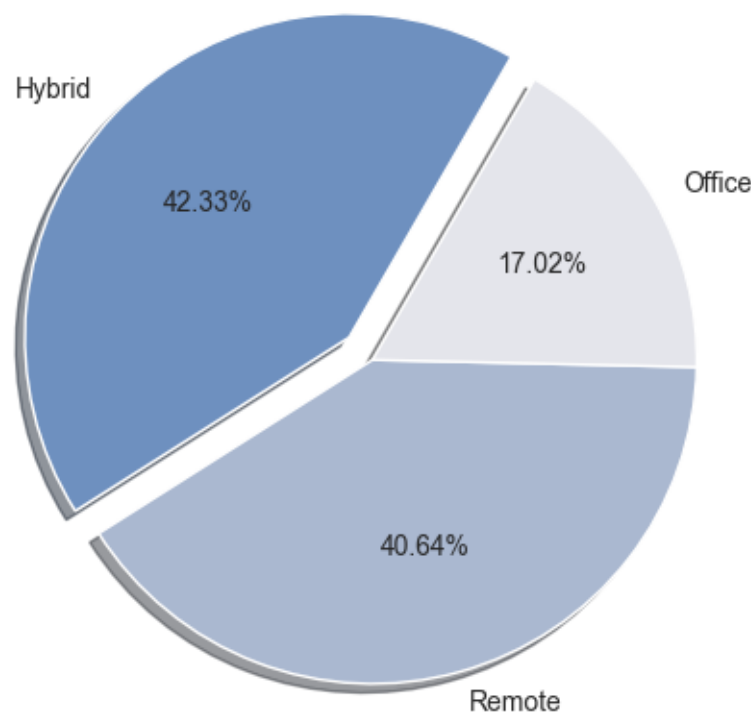


Education Level



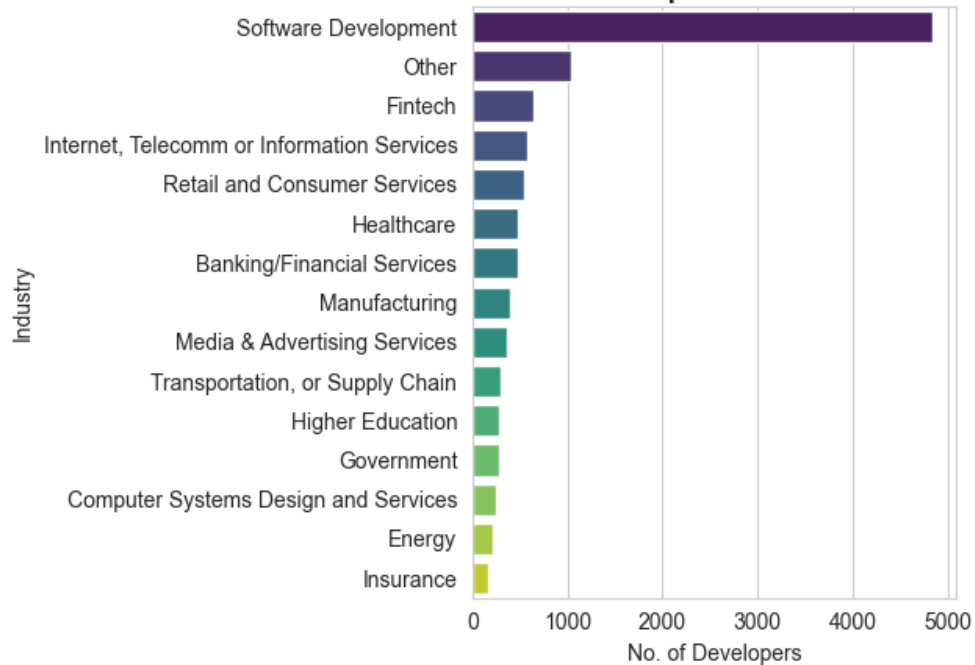
WORK TYPES

Distribution of Work Types

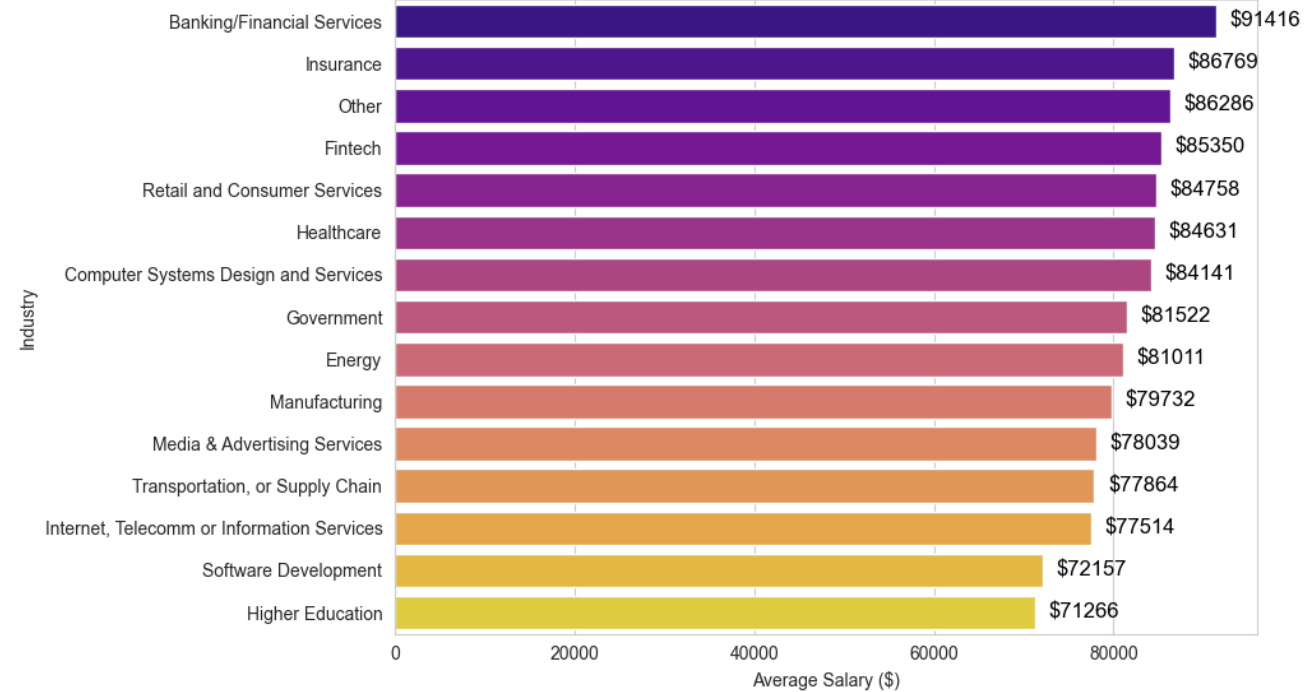


INDUSTRY

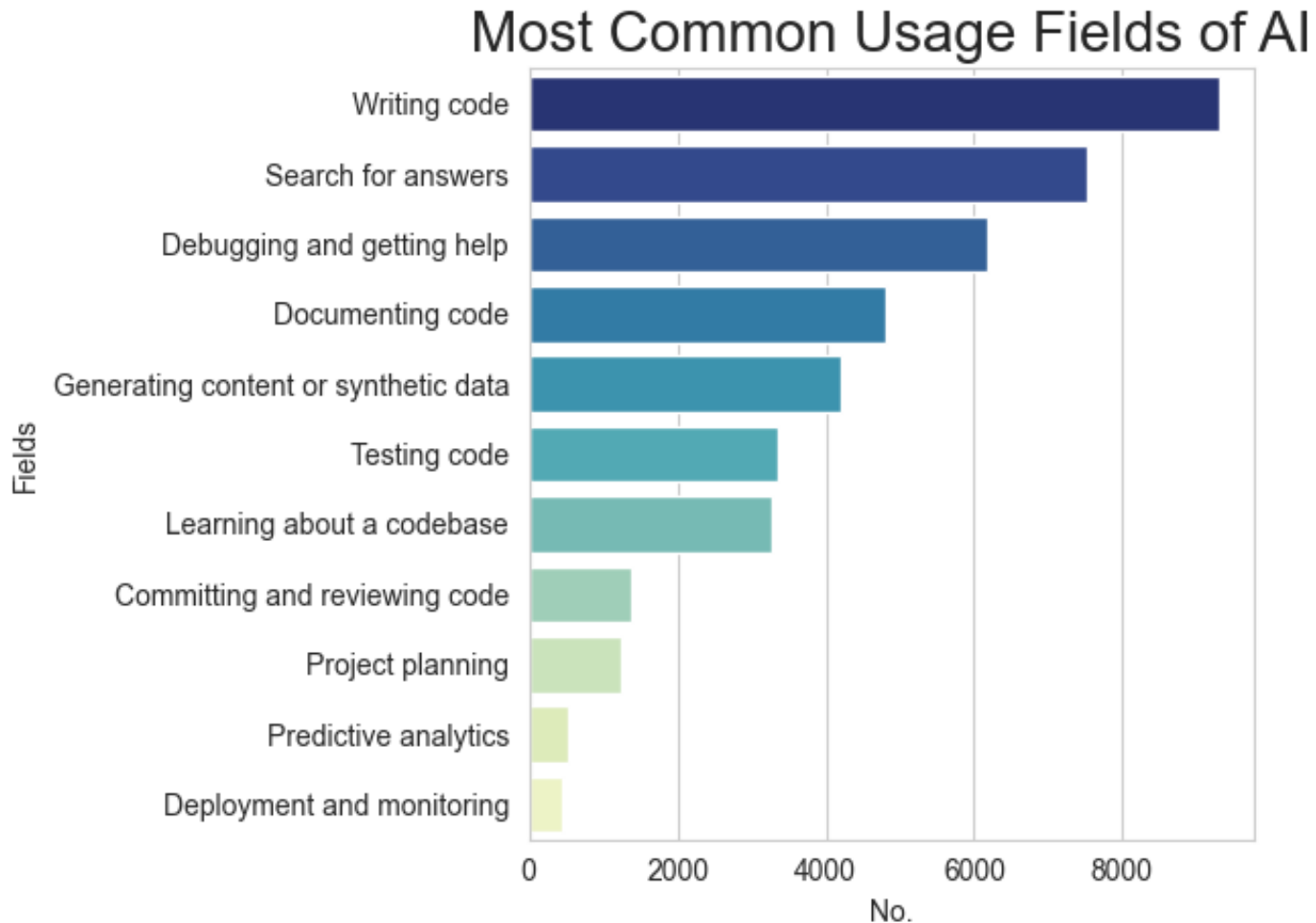
Distribution of Developers in Different Industries



Average Annual Salary by Industry

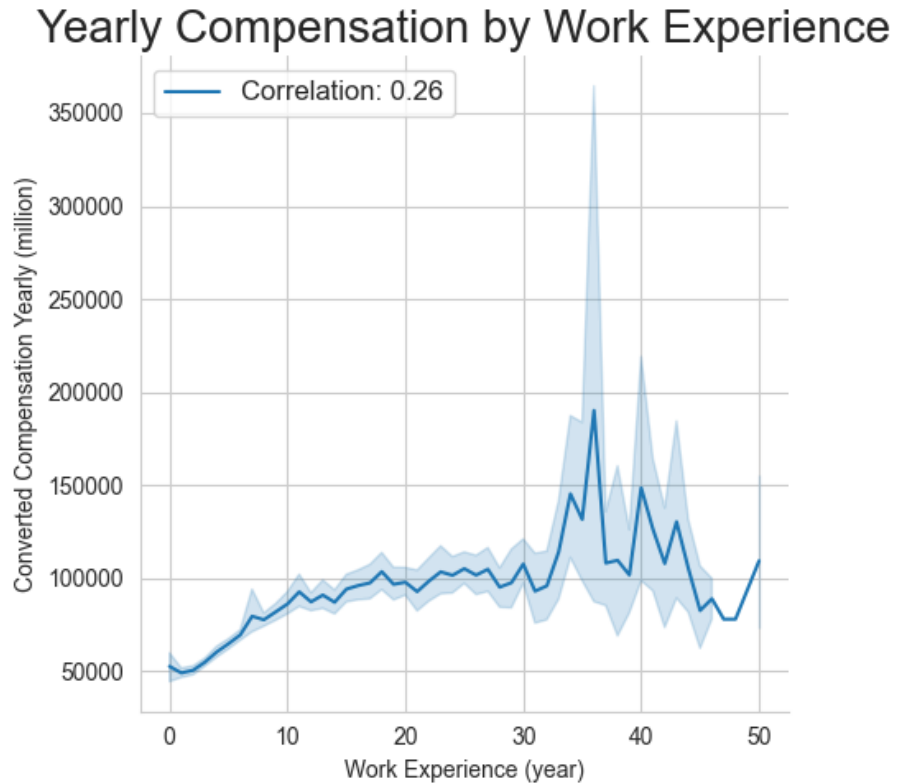


USAGE FIELDS OF AI



YEARLY COMPENSATION CORR.

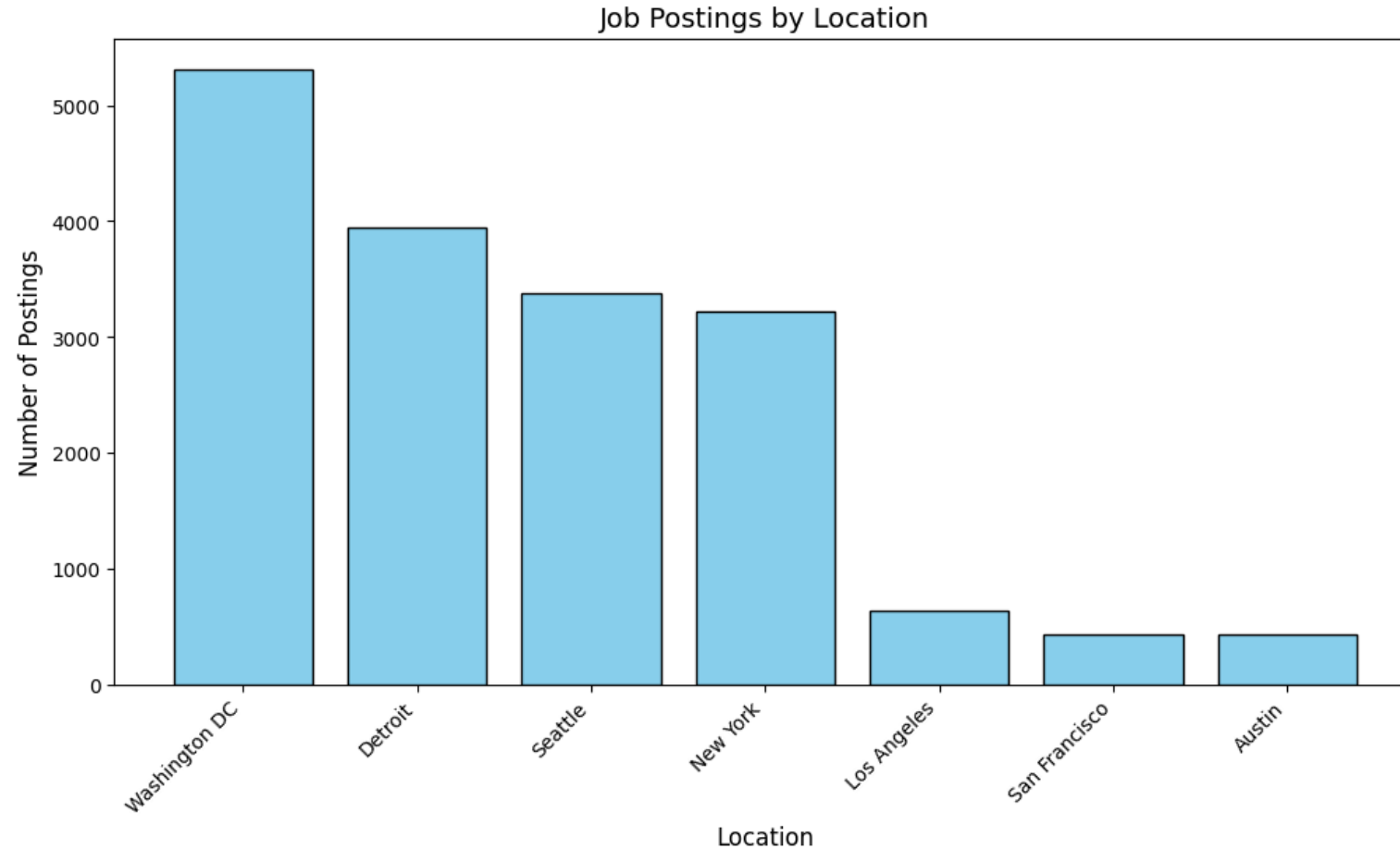
by Work Experience



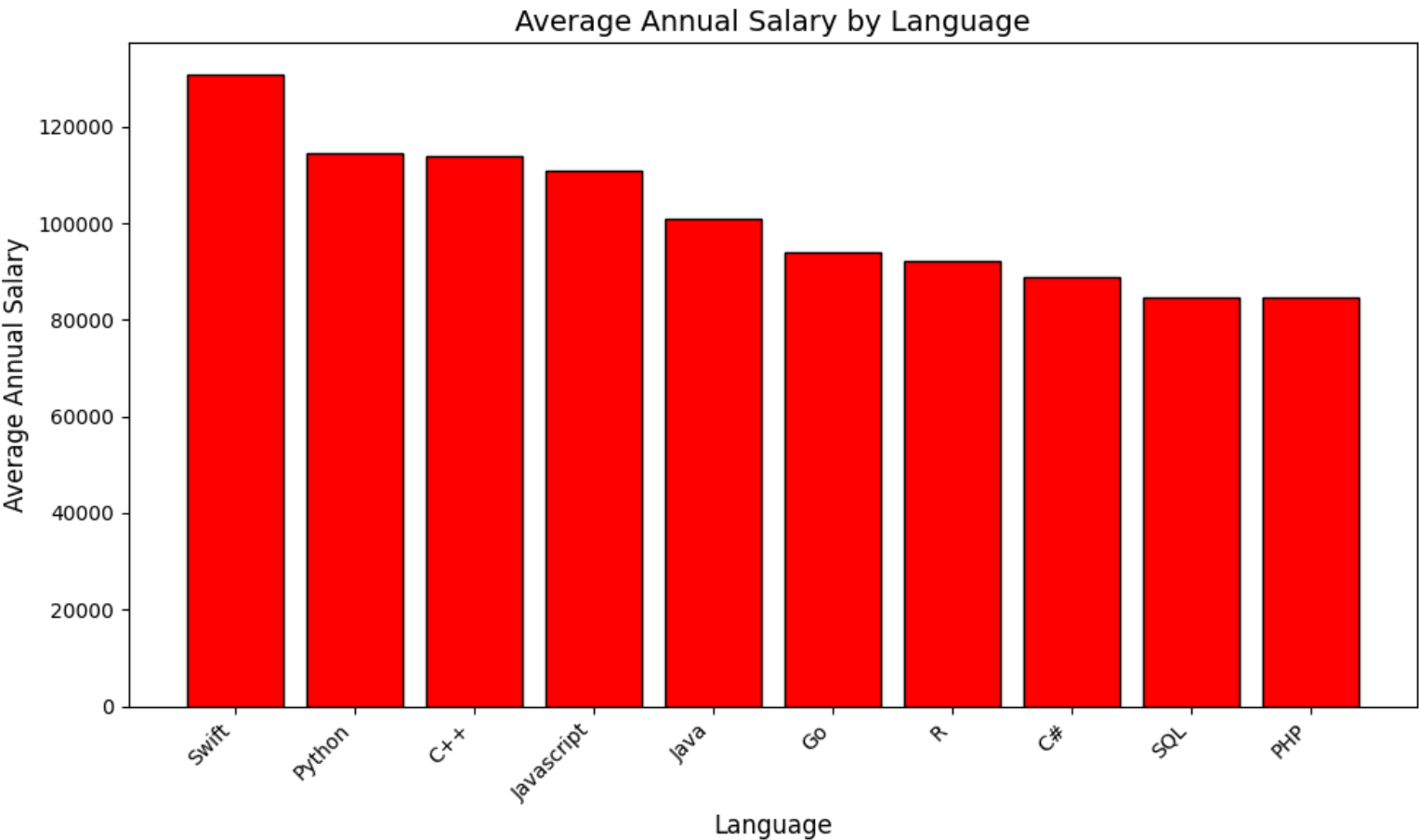
by Job Satisfaction



JOB POSTINGS (using API)



POPULAR LANGUAGES (Web Scrapping)



MORE INSIGHTS FROM SQL

- Average Age of Respondents:
 - 32
- Average Compensation by Job Title (USD) (Top Roles):
 - Senior Executive: \$126,566
 - Developer Advocate: \$116,443
 - Engineering Manager: \$108,346
 - Back-End Developer: \$78,611
 - Data Analyst: \$71,102
- Top 5 Respondent Countries:
 - USA: 16.86%
 - Germany: 7.91%
 - India: 6.83%
 - United Kingdom: 4.67%
 - Ukraine: 4.65%
- Education Level Distribution:
 - Bachelor's: 47.08%
 - Master's: 25.89%
 - Some College, no degree: 13.26%