Stack Overflow Developer Survey 2024

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16 DEC 2024

OUTLINE

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

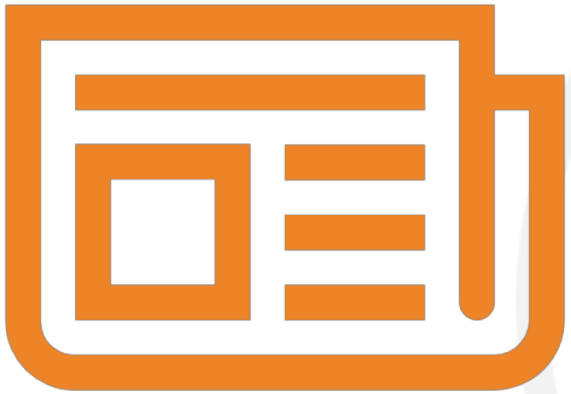
EXECUTIVE SUMMARY

- Data contextualization and analysis goal.
- Methodology description.
  - Data gathering.
  - Data analysis.
  - Data visualizations.
- Results presentation supported with graphs and trends.
- Discussion of overall findings and implications regarding the results previously exposed.
- Final conclusions of the carried out research

INTRODUCTION

- Stack Overflow's annual Developer Survey is the largest and most comprehensive survey of people who code around the world.
- Results don't represent everyone in the developer community evenly.
- Nearly 90,000 developers.
- Trends to predict where the developers are going.
- Characterization of developers around the globe.

METHODOLOGY



- Collect survey data & explore its content
  - Web Scraping
  - APIs.
  - Request library.
- Data Wrangling
- Exploratory data analysis
  - Analyzing data distribution.
  - Handling outliers.
  - Correlations.
- Data Visualization
  - Highlight distribution of data, relationships, the composition and comparison of data.
- Dashboards

RESULTS

1. Job Satisfaction:
   - Most respondents rate their satisfaction as 7 or 8, showing generally high satisfaction levels.

2. Programming Language Preferences:
   - Many want to work with new languages, but a significant number continue using those they already know.

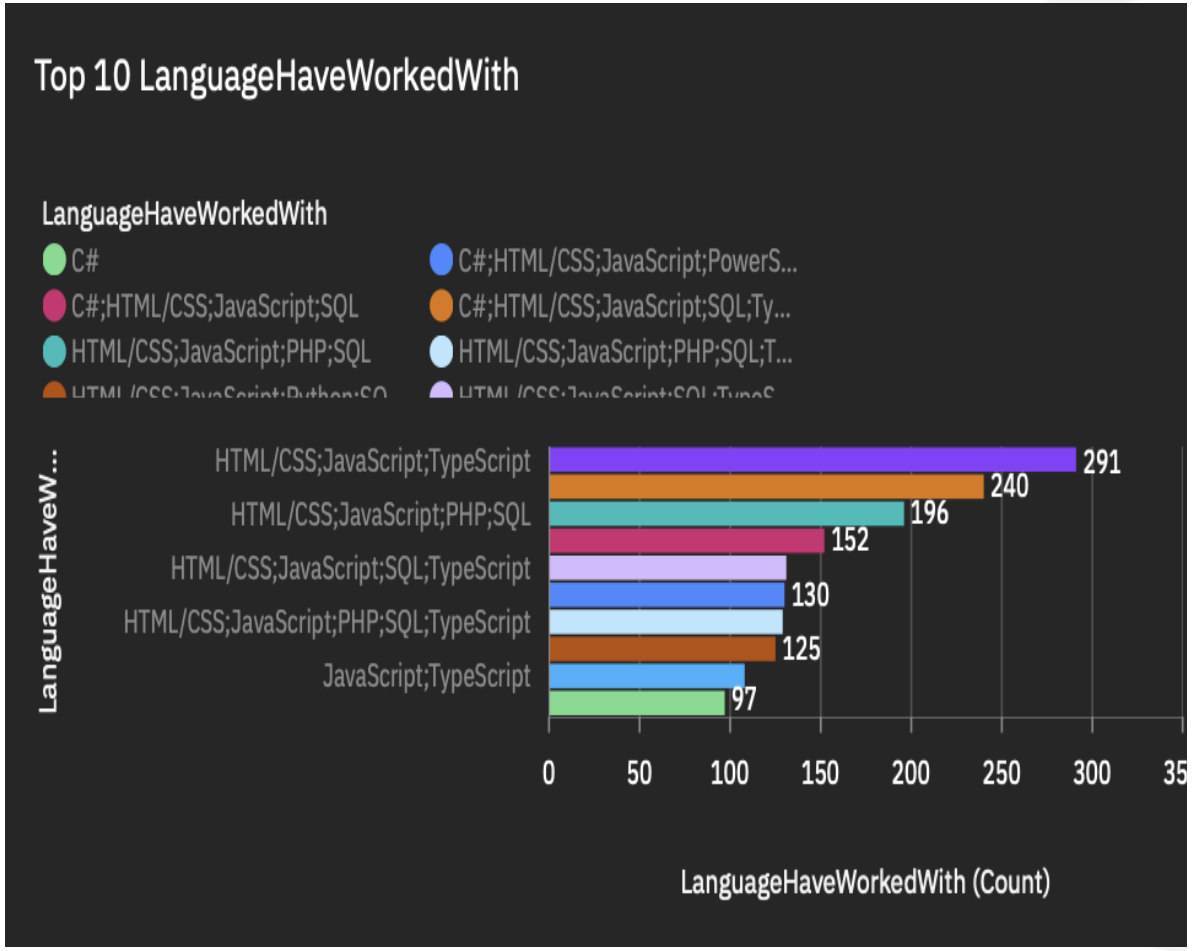
3. Industry Trends:
   - Software Development leads, followed by Fintech, IT/Telecom, and Banking.

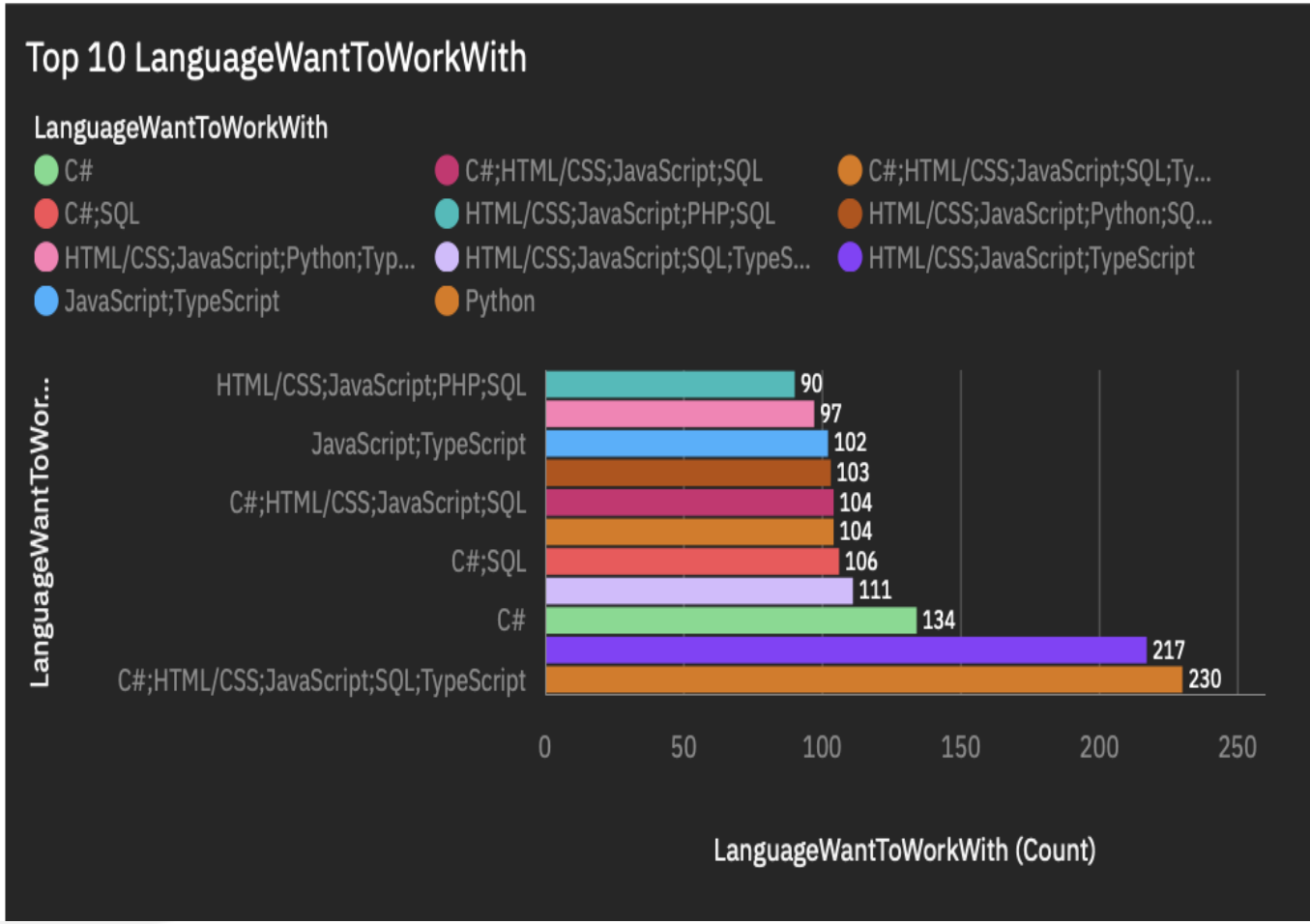
4. Work Experience and Compensation:
   - Compensation increases with experience, but it doesn't strongly impact job satisfaction.

5. General Observations:
   - Professionals are mostly satisfied, eager to learn new skills, and work in diverse industries

RESULTS

Future Technology Trend





PROGRAMMING LANGUAGE TRENDS - FINDINGS & IMPLICATIONS

• Findings

- Top Languages Worked With:

- The most common combination includes HTML/CSS, JavaScript, and TypeScript, highlighting their prominence in modern development. Languages

Developers Want to Work With:

- The same combination (HTML/CSS, JavaScript, and TypeScript) is also highly desired, showing continuity in popularity among developers.

Exploration and Growth:

- A significant interest is shown in learning combinations including Python, indicating a strong demand for Python skills in addition to the staple web technologies.

• Implications

- Skill Development:

•Training programs should emphasize widely used languages like HTML/CSS, JavaScript, and TypeScript, while also offering pathways to learn Python.

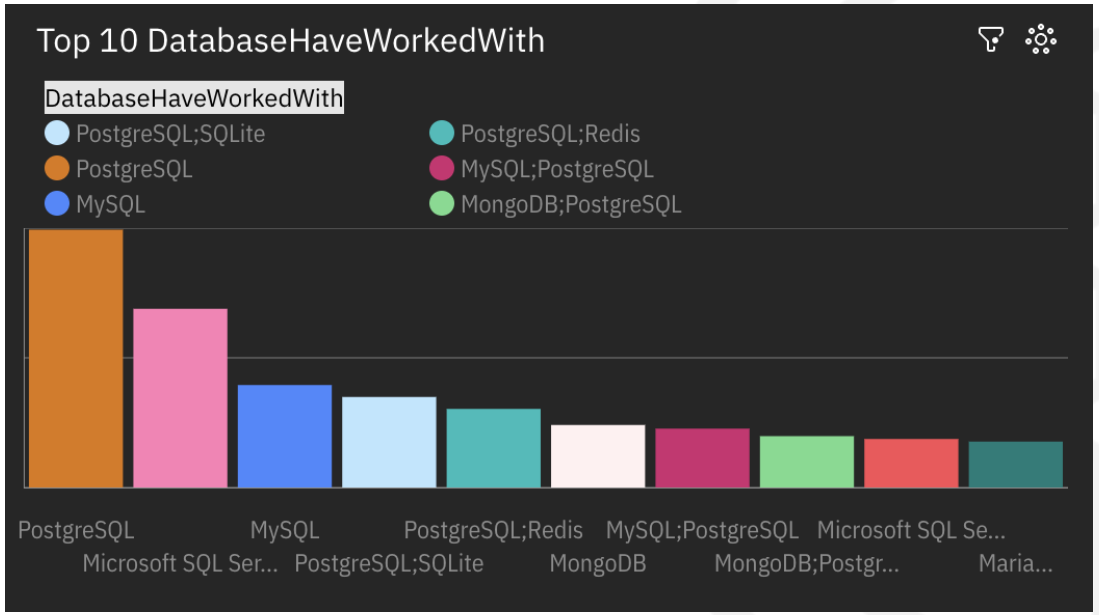
Hiring Strategies:

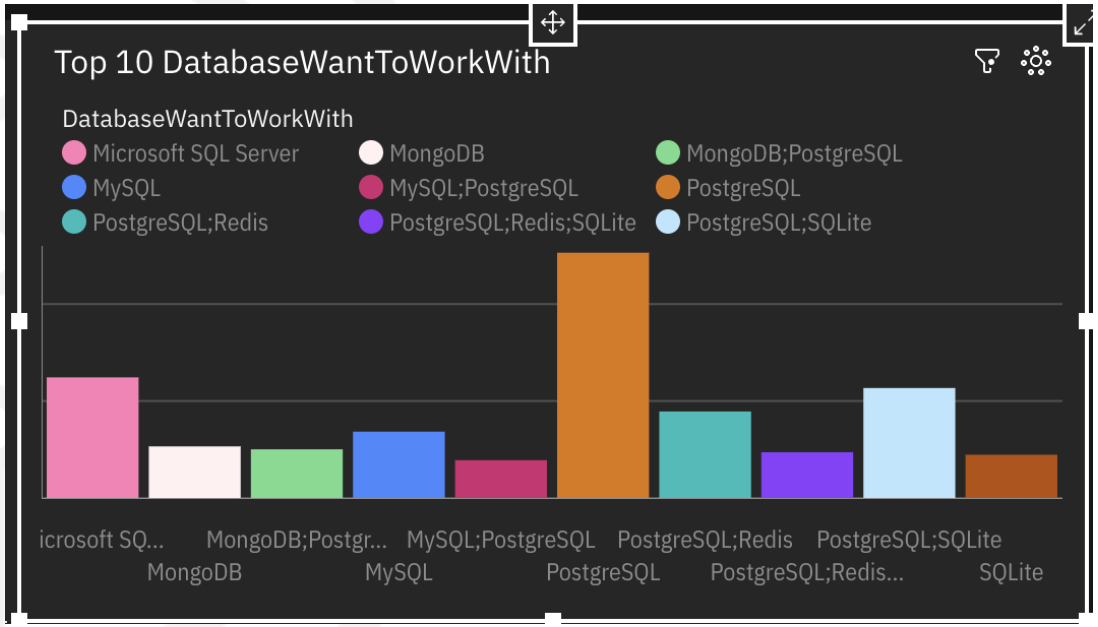
•Employers can attract talent by offering projects that utilize these popular combinations, ensuring alignment with developer interests.

Future Technology Trends:

•The sustained interest in foundational web technologies combined with Python suggests a convergence of traditional web development and datafocused roles, making cross-functional expertise crucial.

DATABASE TRENDS





DATABASE TRENDS - FINDINGS & IMPLICATIONS

- Findings
- Databases Worked With:

•PostgreSQL is the most commonly used database, followed by Microsoft SQL Server and MySQL.
•MongoDB is also a prominent choice among developers.

Databases Developers Want to Work With:
•PostgreSQL remains the top desired database, indicating its continued popularity and potential for growth.

•Microsoft SQL Server and MongoDB also appear as highly sought-after options.

Transition Trends:

•There is significant overlap between databases currently in use and those developers want to work with, especially for PostgreSQL, indicating satisfaction and interest in further adoption.

- Implications
- Training and Development:

•Focus on PostgreSQL in training programs and resources, as it is highly used and desired.

•Include MongoDB and Microsoft SQL Server to align with developer aspirations.

Industry Preferences:

•Organizations should prioritize PostgreSQL for projects to attract talent and leverage its popularity.
•Offering opportunities to work with trending databases like MongoDB may enhance employee satisfaction.

Technology Trends:

•PostgreSQL's dominance suggests its importance for futureproofing database infrastructure.

•Supporting diverse database systems, including NoSQL options like MongoDB, will cater to evolving developer needs.

DASHBOARD TAB 1

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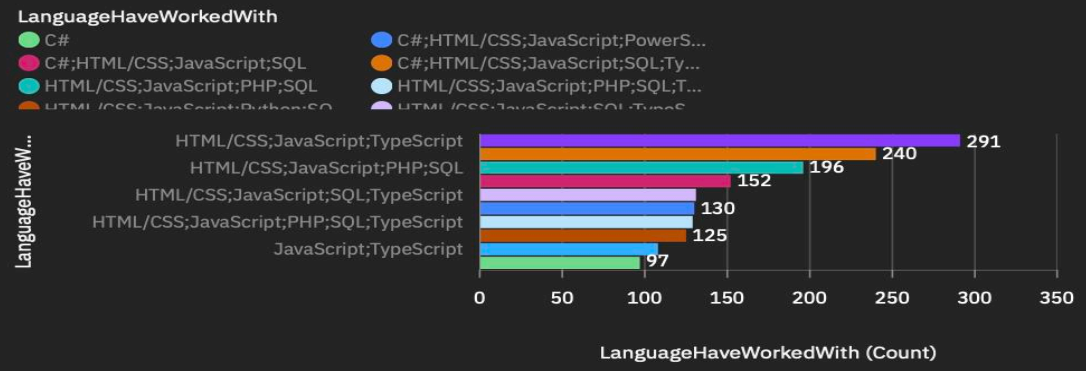
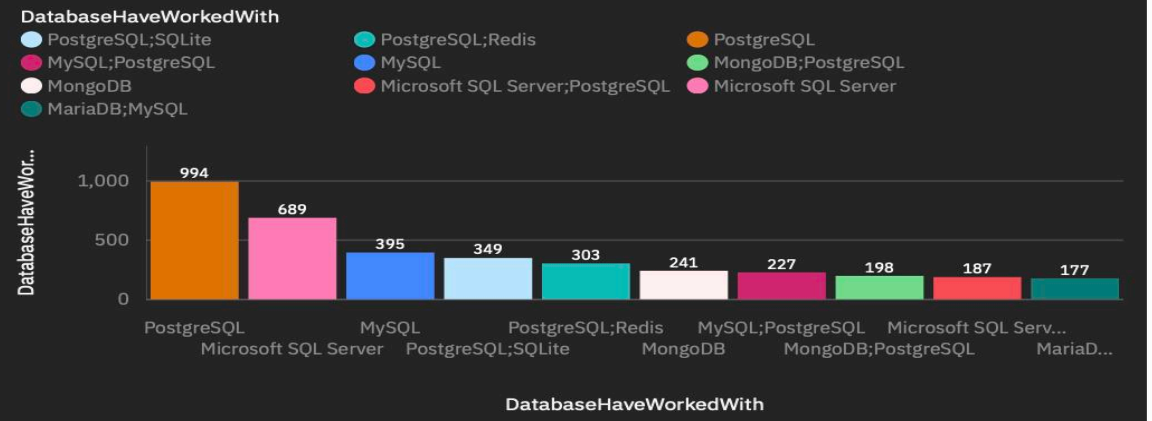
Demographics

Current Technology Usage

Top 10 LanguageHaveWorkedWith

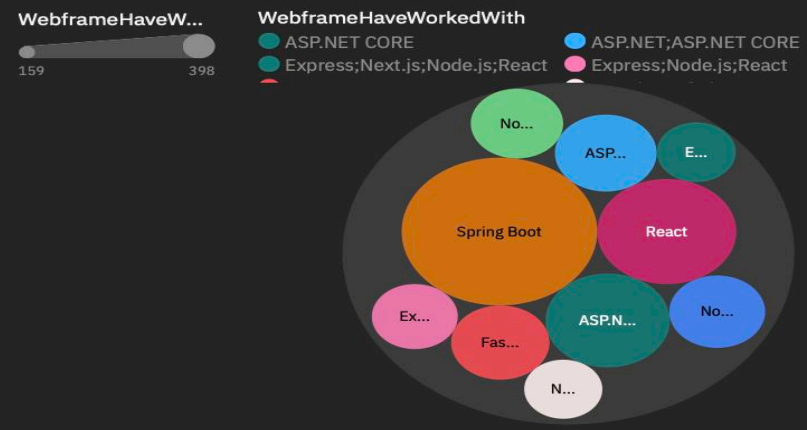


Top 10 DatabaseHaveWorkedWith



Top 10 PlatformHaveWorkedWith

Top 10 WebFrameHaveWorkedWith



DASHBOARD TAB 2

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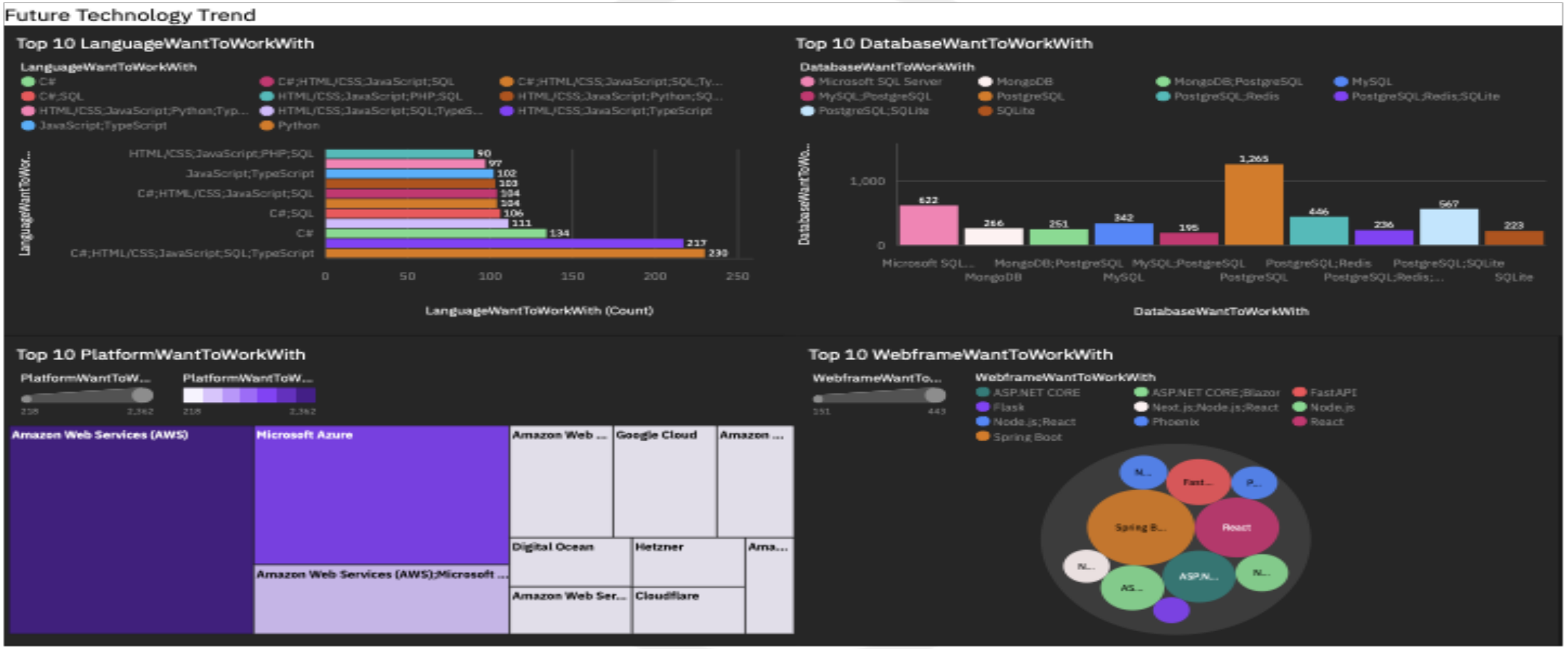
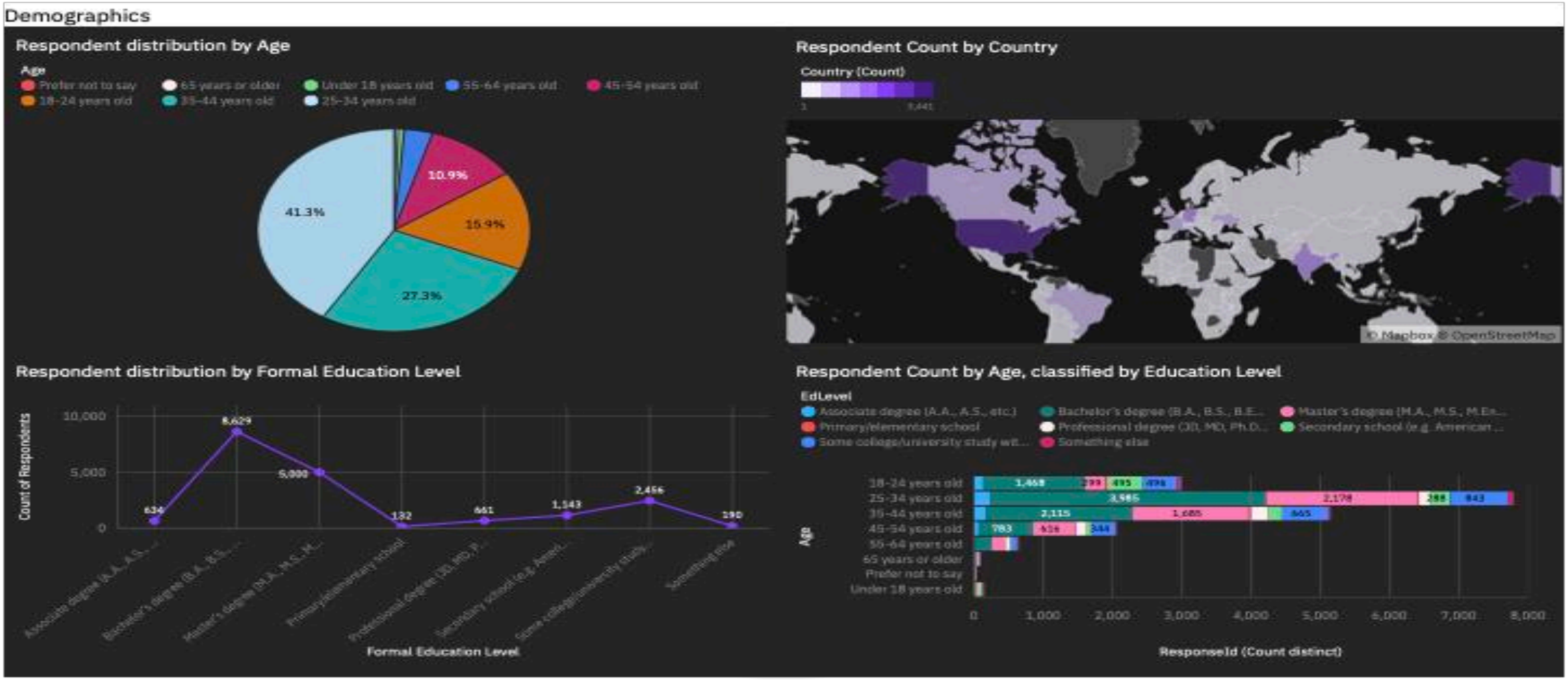
Demographics



DASHBOARD TAB 3



DISCUSSION

- Technology Trends:
- PostgreSQL and JavaScript are the most popular tools now and in the future. Developers prefer tools that are versatile and widely supported.
- Skill Development:
- Many developers want to deepen expertise in tools they already use. Training should focus on balancing emerging tools with established ones.
- Business Impact:
- Companies should invest in PostgreSQL, JavaScript, and other popular tools to align with developer preferences.
- Offering opportunities to work with desired technologies can attract and retain talent.

OVERALL FINDINGS & IMPLICATIONS

Findings

- Technology Trends:

•PostgreSQL and JavaScript dominate both current usage and future aspirations, highlighting their critical role in development.

•Popular programming languages like HTML/CSS, Python, and TypeScript are widely used and continue to be in high demand.

Developer Preferences:

•Developers show a strong preference for tools they already work with, indicating satisfaction with existing technologies.

•Emerging tools like MongoDB and Redis are gaining interest, reflecting the need for scalability and flexibility.

Industry Distribution:

•Software Development is the leading industry for respondents, followed by Fintech and IT/Telecom sectors.

•Databases like PostgreSQL and Microsoft SQL Server are prominent across industries.

Implications

For Employers:

•Invest in training and projects around PostgreSQL, JavaScript, and other trending technologies to align with developer interests.

•Support skill development in emerging tools like MongoDB and Redis to future-proof teams.

For Training Providers:

•Focus on courses that blend foundational tools (e.g., SQL, JavaScript) with newer technologies like Python frameworks and NoSQL databases.

•Offer certifications and workshops on PostgreSQL to meet high demand.

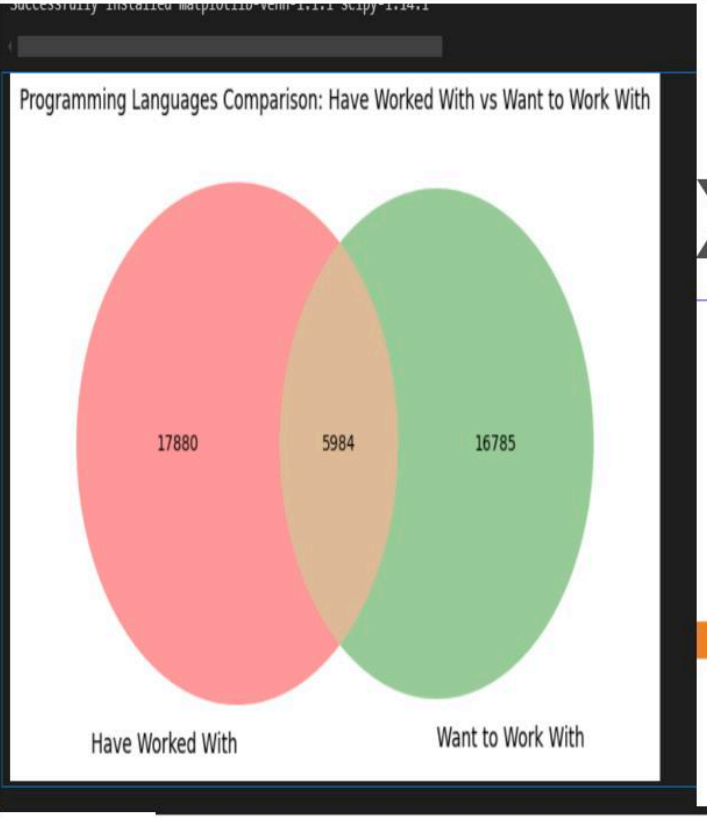
For Developers:

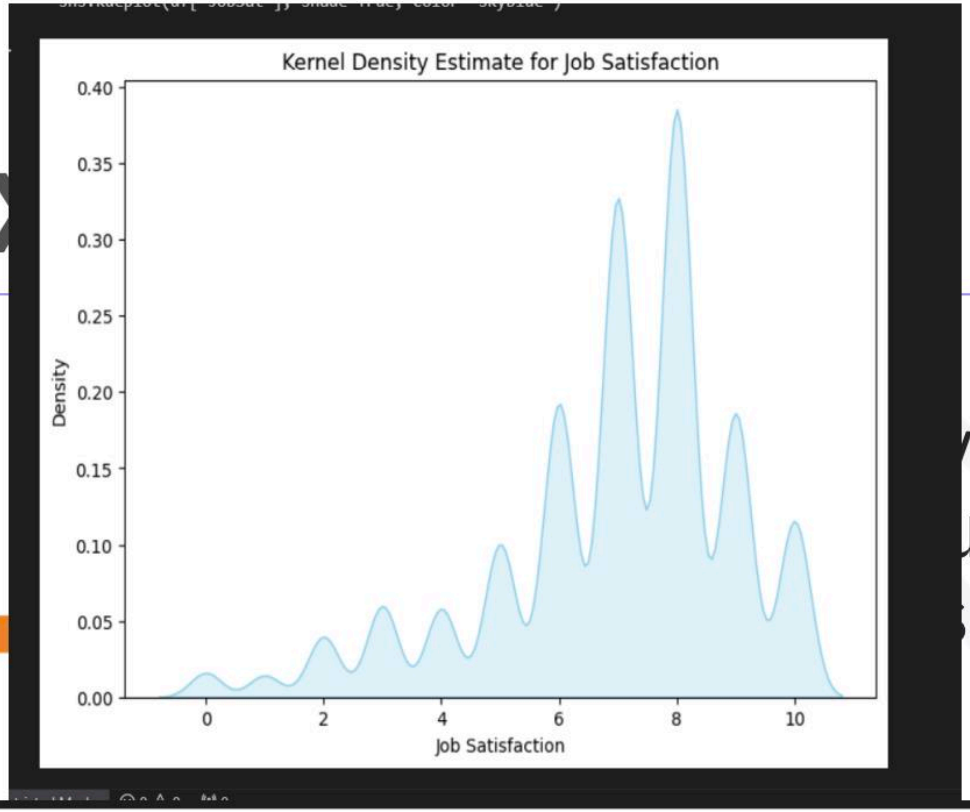
•Prioritize learning popular tools like PostgreSQL and Python to enhance career opportunities.

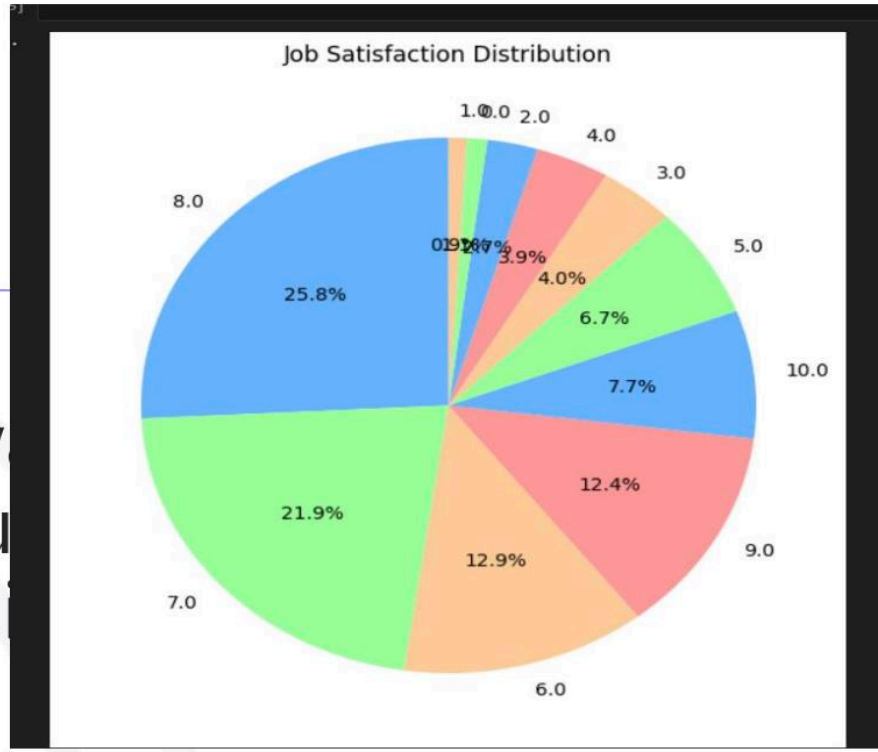
•Explore emerging databases and frameworks to stay ahead of industry trends.

CONCLUSION

- PostgreSQL and JavaScript remain dominant technologies, reflecting their reliability and widespread adoption in the industry.
- Developers show strong interest in deepening expertise with familiar tools while exploring emerging technologies like MongoDB and Redis.
- Aligning business, training, and personal development strategies with these trends will ensure competitiveness, innovation, and career growth.


Programming Languages Comparison: Have Worked With vs Want to Work With
17880
5984
16785
Have Worked With
Want to Work With


Kernel Density Estimate for Job Satisfaction
Density
Job Satisfaction
0.00
0.05
0.10
0.15
0.20
0.25
0.30
0.35
0.40
0
2
4
6
8
10


Job Satisfaction Distribution
1.0
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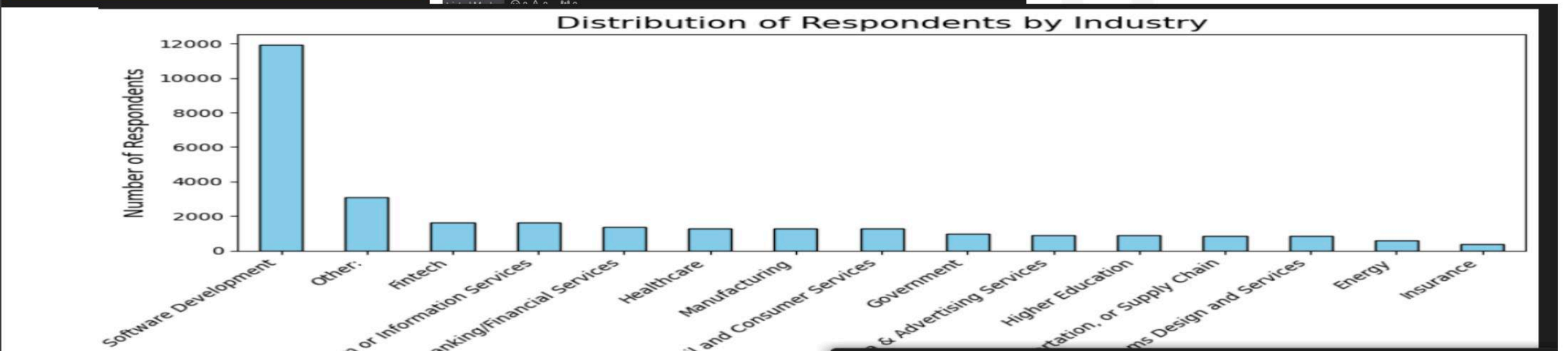
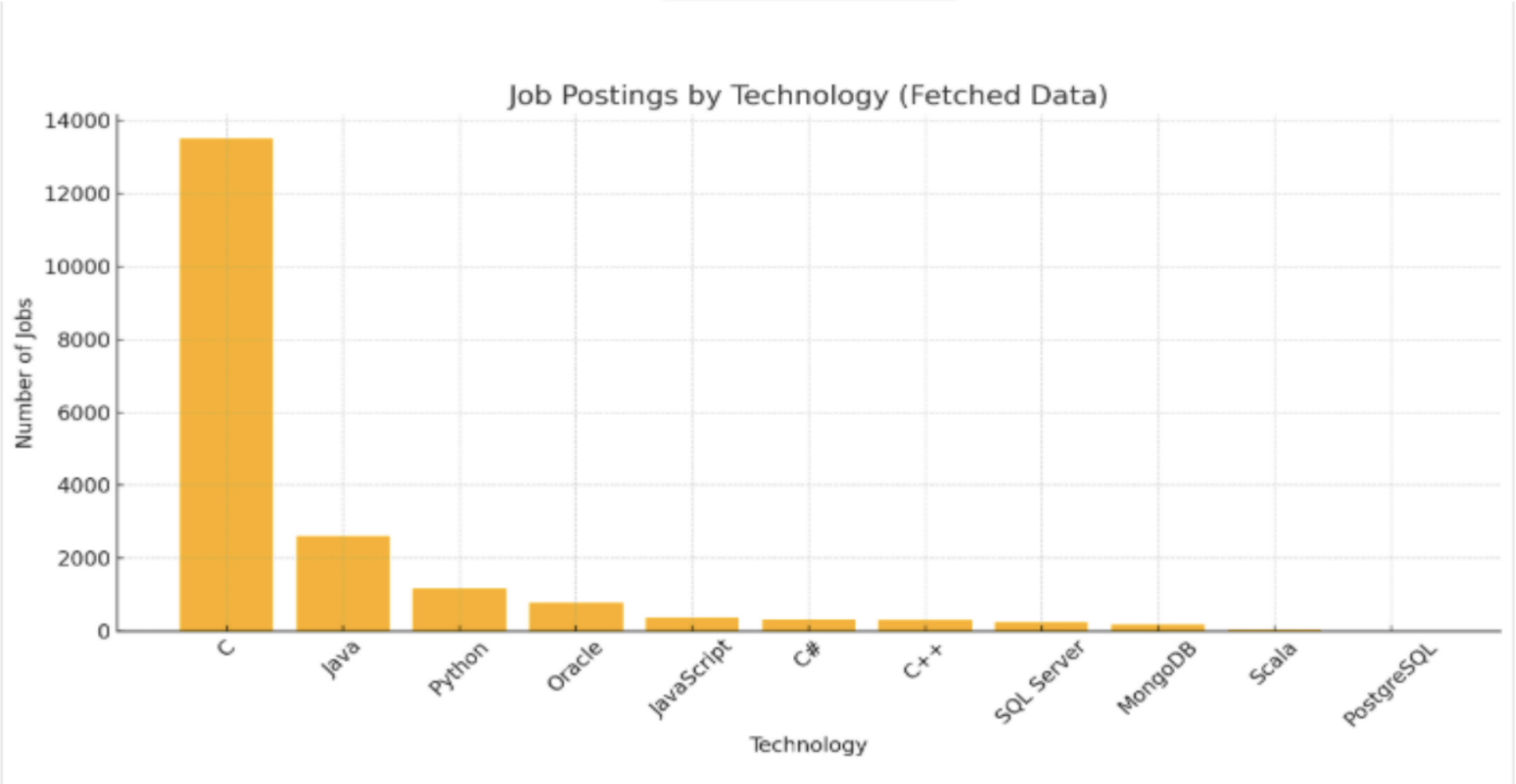
2.0
4.0
3.0
5.0
8.0
10.0
9.0
7.0
6.0
25.8%
3.9%
4.0%
6.7%
7.7%
12.4%
21.9%
12.9%


Distribution of Respondents by Industry
Number of Respondents
0
2000
4000
6000
8000
10000
12000
Software Development
Other:
Fintech
Information Services
Healthcare
Manufacturing
Government
Higher Education
Energy
Insurance

JOB POSTINGS



POPULAR LANGUAGES