

IBM Data Analyst Capstone Project- Survey Data Dashboard

Part 1



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OUTLINE



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- Introduction
- Methodology
- Results
 - Visualization – Charts
 - Dashboard
- Discussion
 - Findings & Implications
- Conclusion
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EXECUTIVE SUMMARY



- **Programming Language Preferences:**

HTML/CSS, JavaScript, TypeScript, C#, and SQL are among the top languages respondents want to work with.

- **Platform & Tool Usage:**

AWS and Microsoft Azure dominate professional use.

- **Education & Age Trends:**

Respondent counts peak in the 35-44 age range.

- **Job Satisfaction & Compensation:**

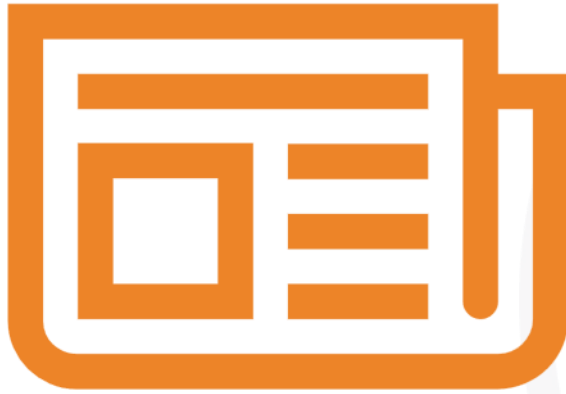
Compensation and job satisfaction generally increase with age and experience, reaching a peak in the 35–44 age group.

INTRODUCTION



- This report analyzes survey data to understand what tools, technologies, and work preferences developers have.
- It is meant for tech teams, hiring managers, and decision-makers.
- The findings can help with hiring, training, and choosing the right technologies.

METHODOLOGY



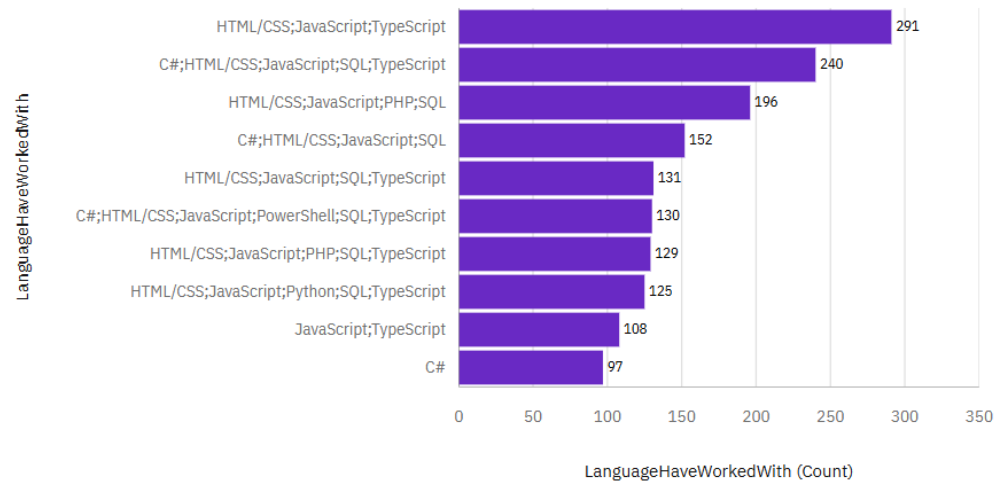
- The data was taken from the survey_data_updated.csv file, which contains responses from a developer survey.
- The survey was collected online and includes questions about tools, technologies, and work preferences.
- We cleaned missing values and converted data types to prepare it for analysis.



PROGRAMMING LANGUAGE TRENDS

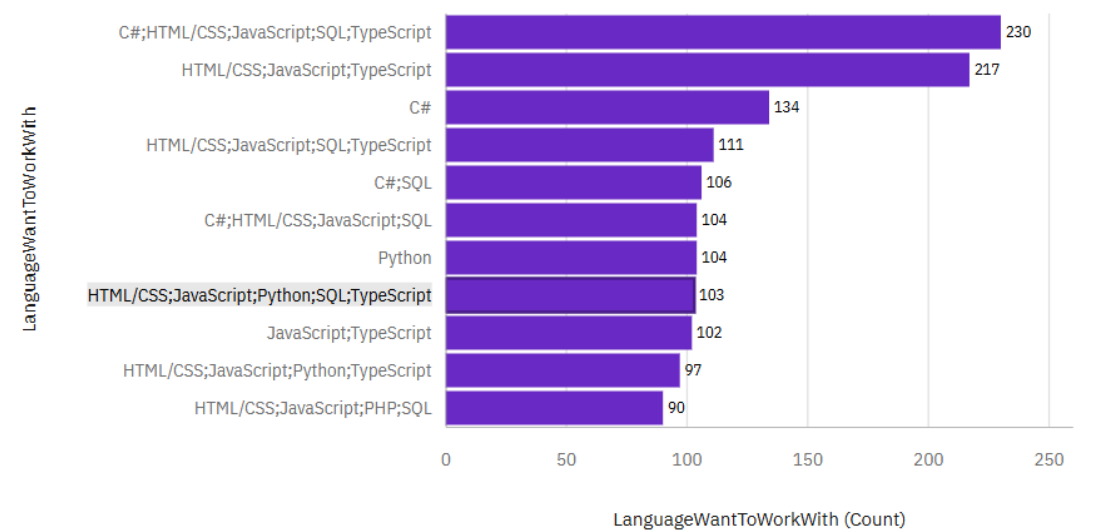
Current Year

Top 10 Programming Languages Respondents Have Worked With



Next Year

Top 10 Desired Programming Languages



PROGRAMMING LANGUAGE TRENDS - FINDINGS & IMPLICATIONS

Findings

- Top Languages Used: JavaScript, HTML/CSS, and TypeScript are the most commonly used.
- Most Desired Languages: C#, JavaScript, HTML/CSS, SQL, and TypeScript are among the most desired for future work.

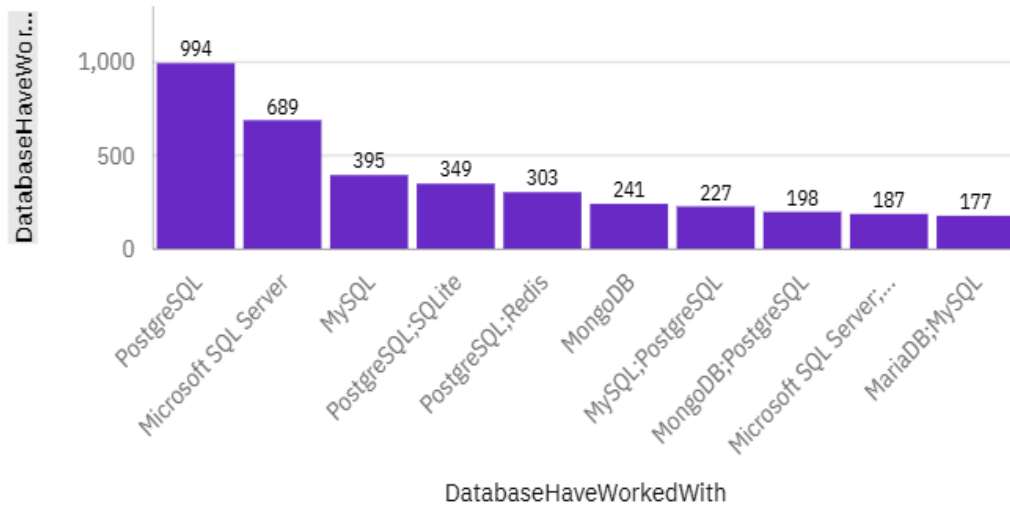
Implications

- Training Focus: Offer learning resources to attract talent.
- Hiring Strategy: Align job roles with popular language trends to reach broader developer pools.
- Tech Stack Decisions: Prioritize languages that are both widely used and highly desired to improve satisfaction and retention.

DATABASE TRENDS

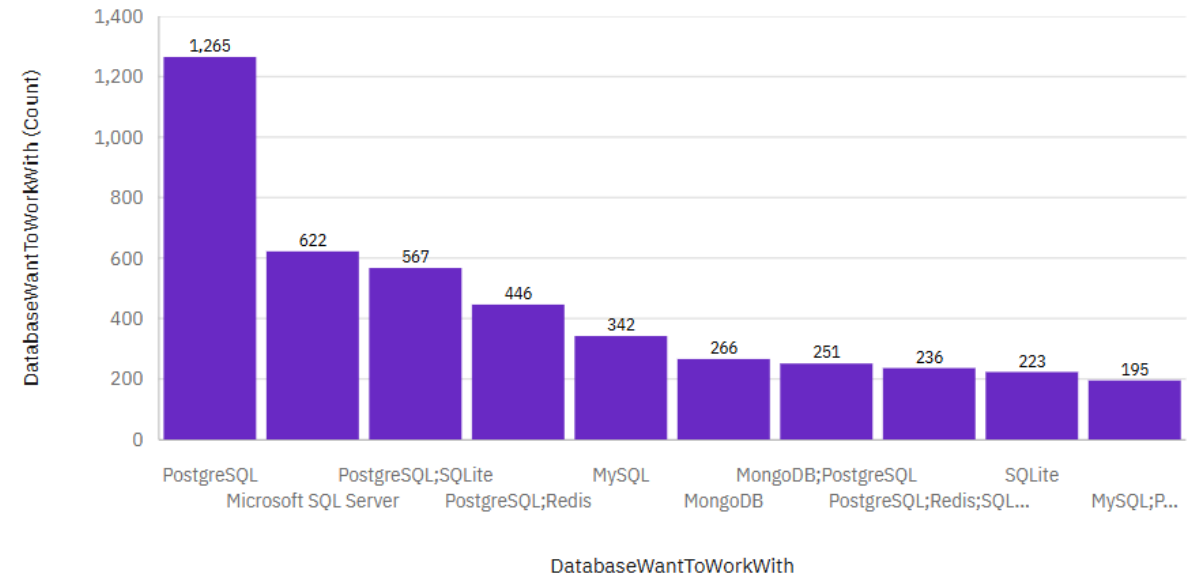
Current Year

DatabaseHaveWorkedWith by DatabaseHaveWorkedWith



Next Year

Top 10 Desired Data Bases



DATABASE TRENDS - FINDINGS & IMPLICATIONS

Findings

- Microsoft SQL Server and PostgreSQL are the most widely used.
- Microsoft SQL Server and PostgreSQL are gaining popularity for modern app development.
- SQL-based databases remain dominant in the industry.

Implications

- PostgreSQL is strong in both current use and future interest.
- MongoDB and Redis are expected to grow in demand, especially for NoSQL and real-time use cases.
- Organizations should invest in open-source and cloud-friendly databases to attract developer talent and support scalable apps.

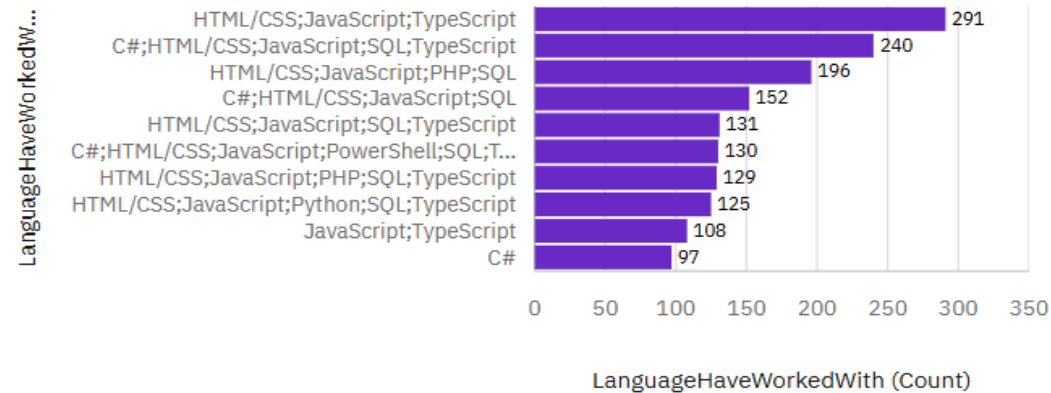


DASHBOARD

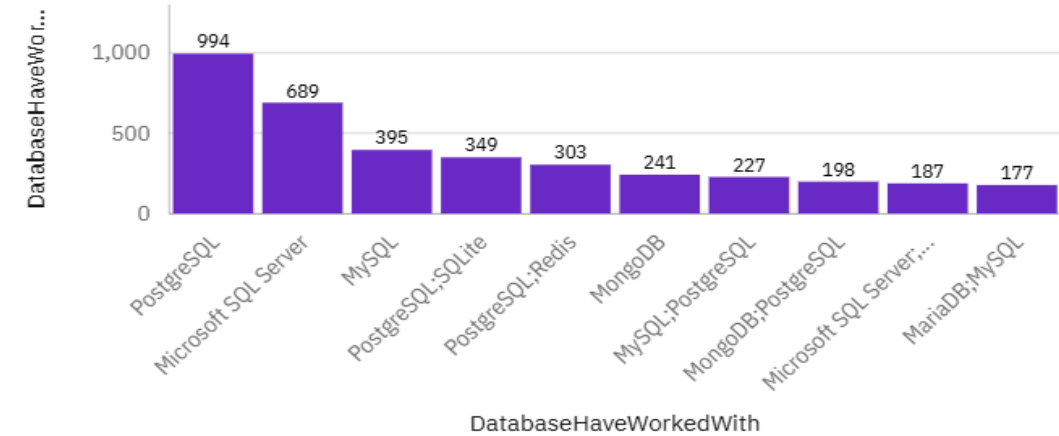


DASHBOARD TAB 1

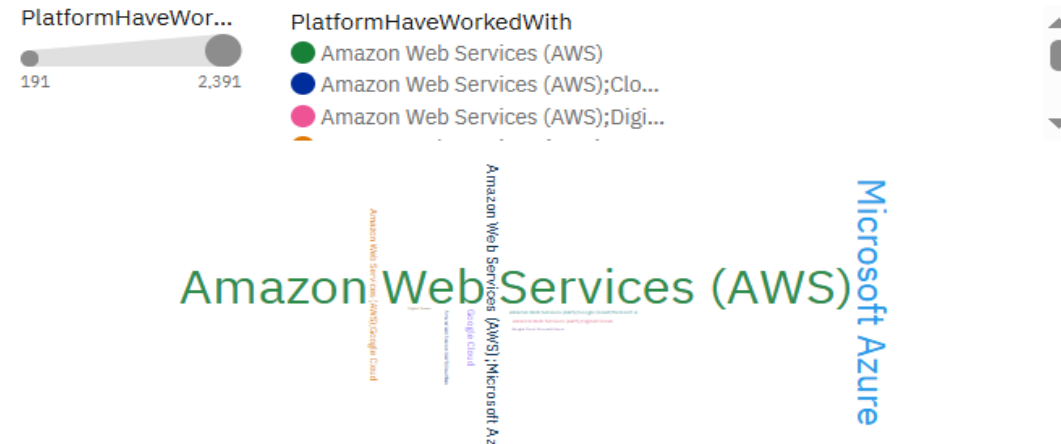
Top 10 Programming Languages Respondents Have Worked With



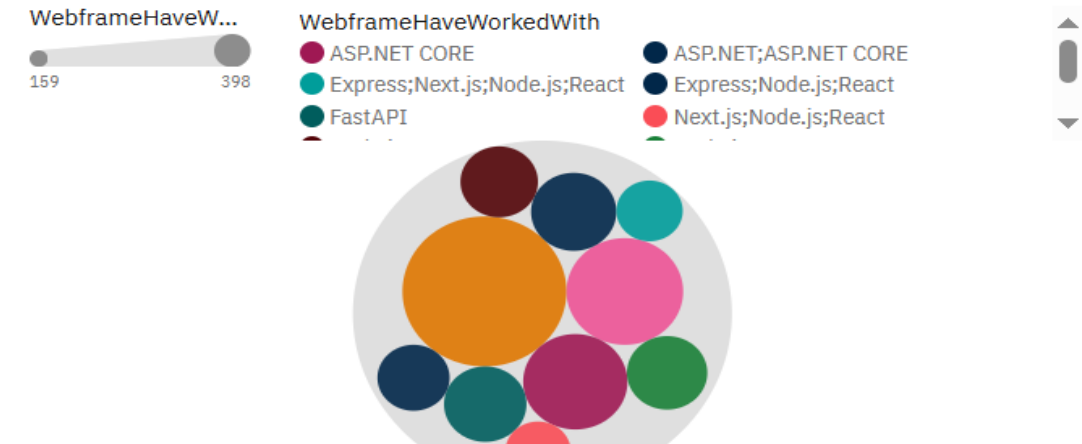
DatabaseHaveWorkedWith by DatabaseHaveWorkedWith



Top 10 Platforms Respondents Have Worked With

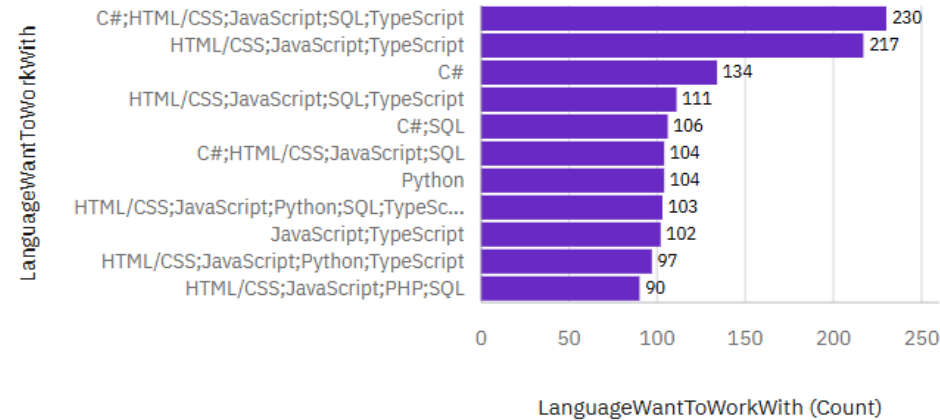


Top 10 Web Frames Respondents Have Worked With

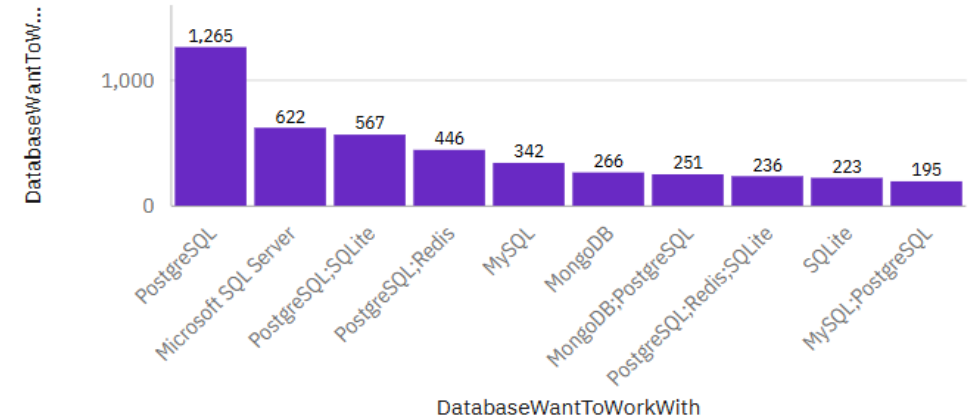


DASHBOARD TAB 2

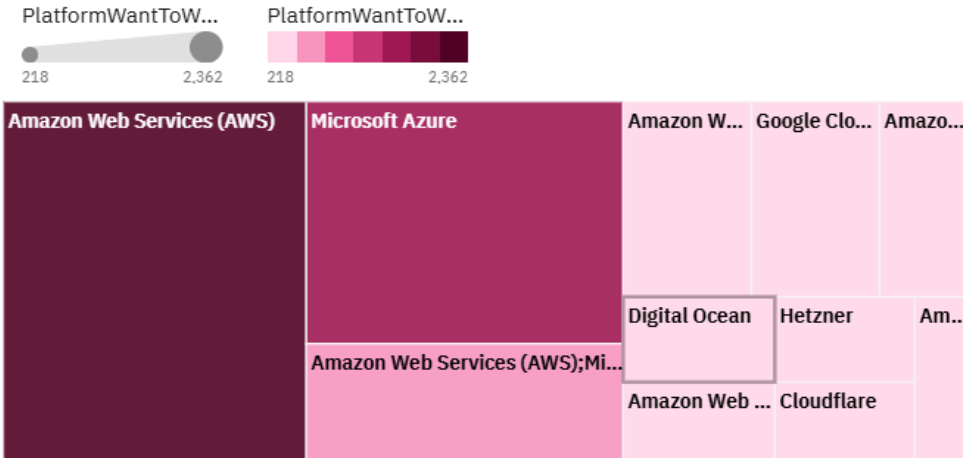
Top 10 Desired Programming Languages



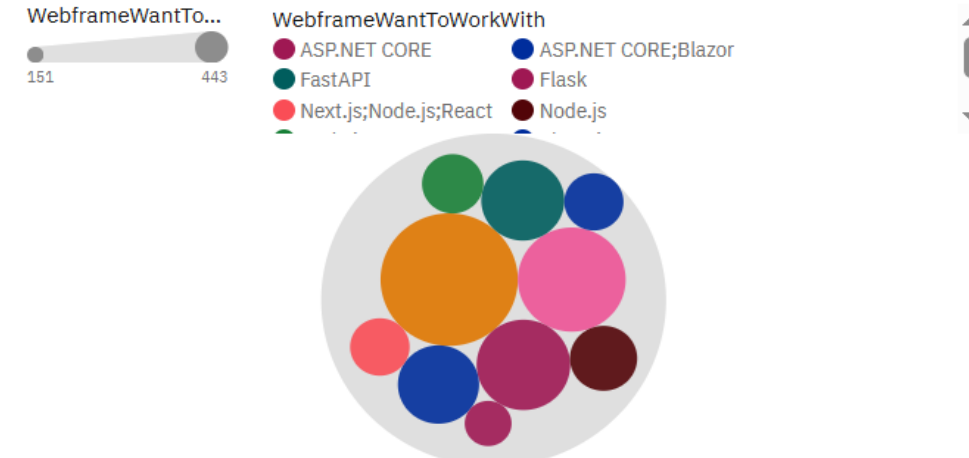
Top 10 Desired Data Bases



Top 10 Desired Platforms



Top 10 Desired Web Frames

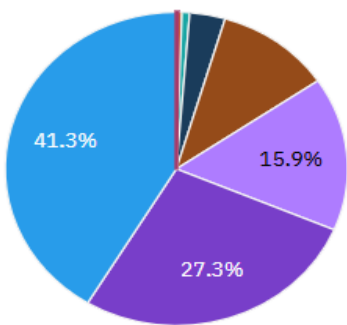


DASHBOARD TAB 3

Respondent distribution by Age

Age

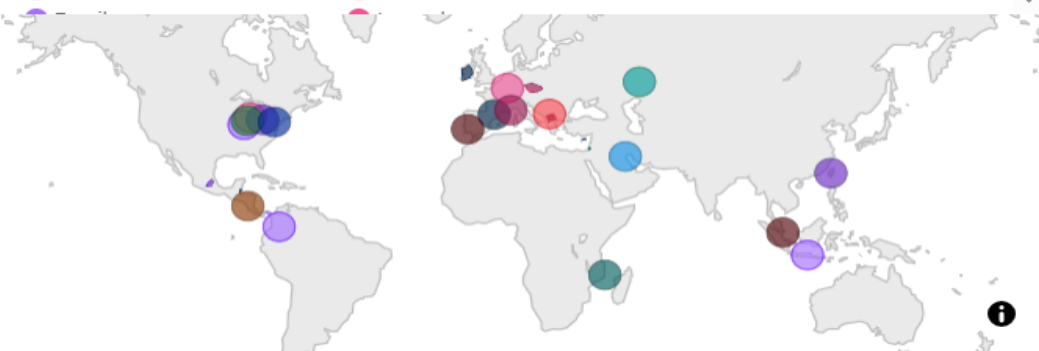
- Prefer not to say
- 65 years or older
- Under 18 years old
- 55-64 years old
- 45-54 years old
- 18-24 years old
- 35-44 years old
- 25-34 years old



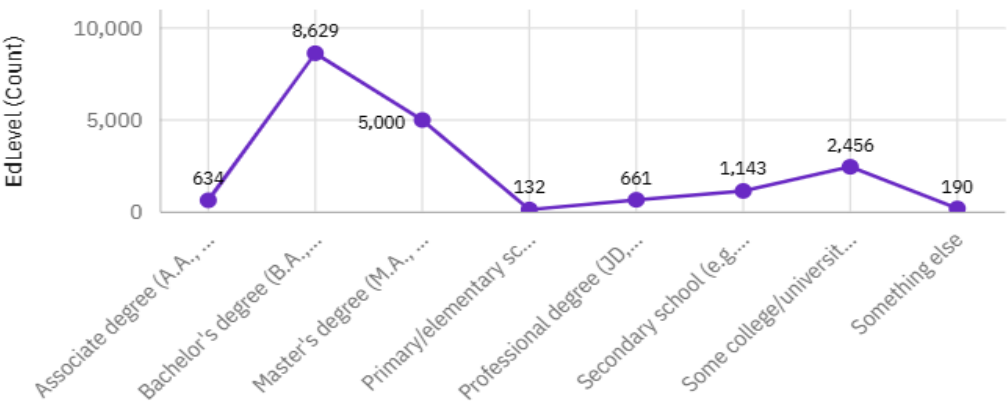
Respondent Count by Country

Country

- Nicaragua
- Mexico
- Panama
- Indonesia
- Isle of Man
- Kosovo



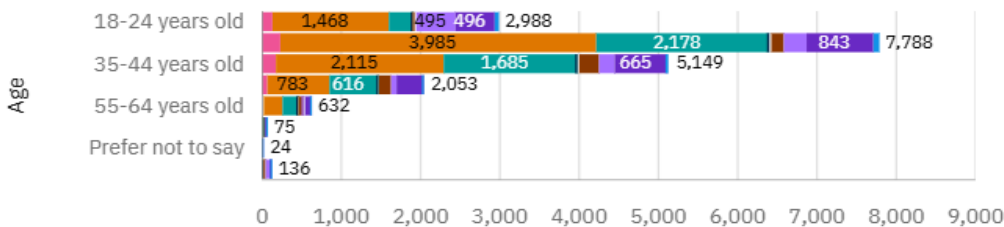
Respondent distribution by Formal Education Level



Respondent Count by Age Group Classified by Education Level

EdLevel

- Associate degree (A.A., A.S., etc.)
- Master's degree (M.A., M.S., M.En...
- Professional degree (JD, MD, Ph.D...
- Bachelor's degree (B.A., B.S., B.E...
- Primary/elementary school
- Secondary school (e.g. American ...



DISCUSSION



- JavaScript, C#, and SQL are the most used and desired programming languages.
- PostgreSQL and MongoDB are top databases developers want to learn.
- React and Spring Boot lead among preferred web frameworks.
- Younger developers prefer modern languages and tools, while experienced ones lean toward traditional stacks.



OVERALL FINDINGS & IMPLICATIONS

Findings

- Developers prefer modern, flexible tools like HTML/CSS, Spring Boot, AWS, and MongoDB.
- Full-time roles offer higher satisfaction and pay than other employment types.
- Job satisfaction and compensation both increase with experience.
- Younger developers favor emerging technologies, while older developers stick to established stacks.

Implications

- Companies should adopt popular tools and languages to attract and retain talent.
- Investing in developer training for modern frameworks will improve engagement.
- Offering stable, full-time roles may lead to higher satisfaction and lower turnover.
- Understanding these trends helps in better hiring, project planning, and tech strategy.



CONCLUSION

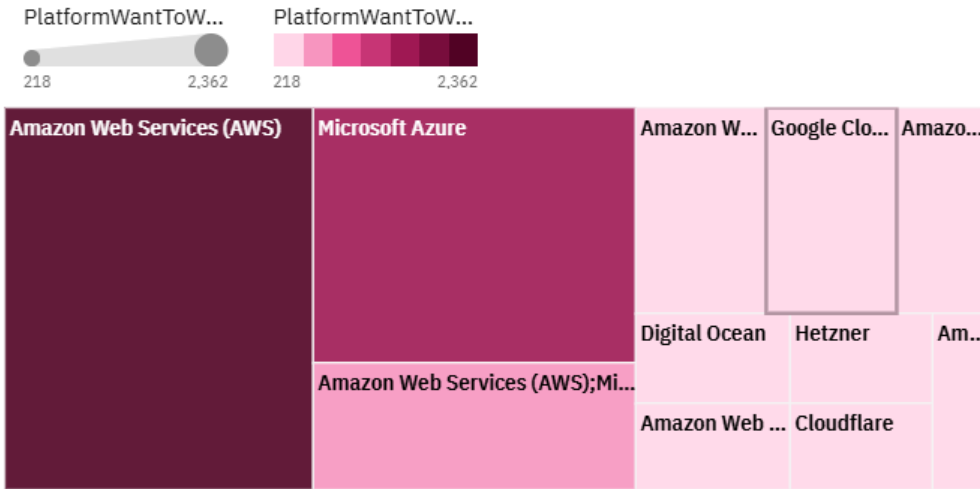


- Job satisfaction improves with experience and stable employment.
- Modern tools and technologies are preferred by younger respondents.
- Organizations should align with these trends for better talent attraction and retention.

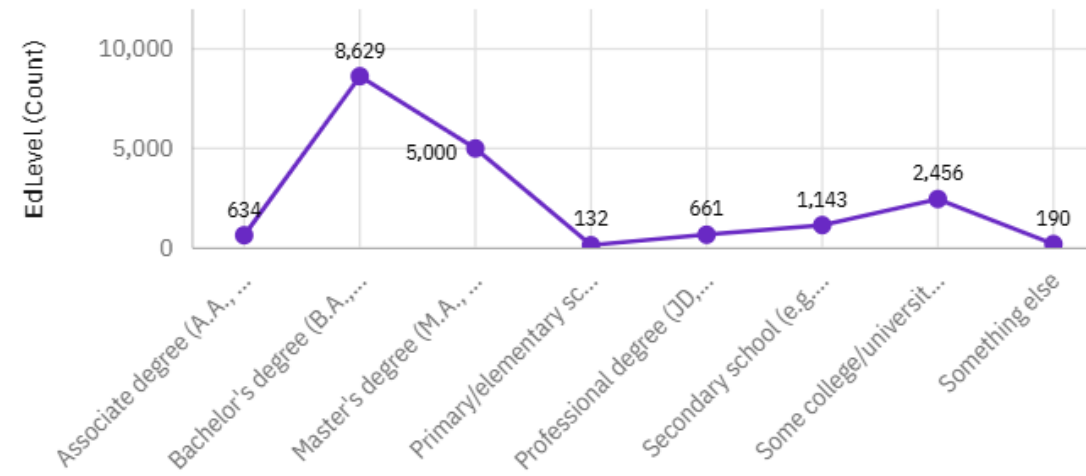
APPENDIX



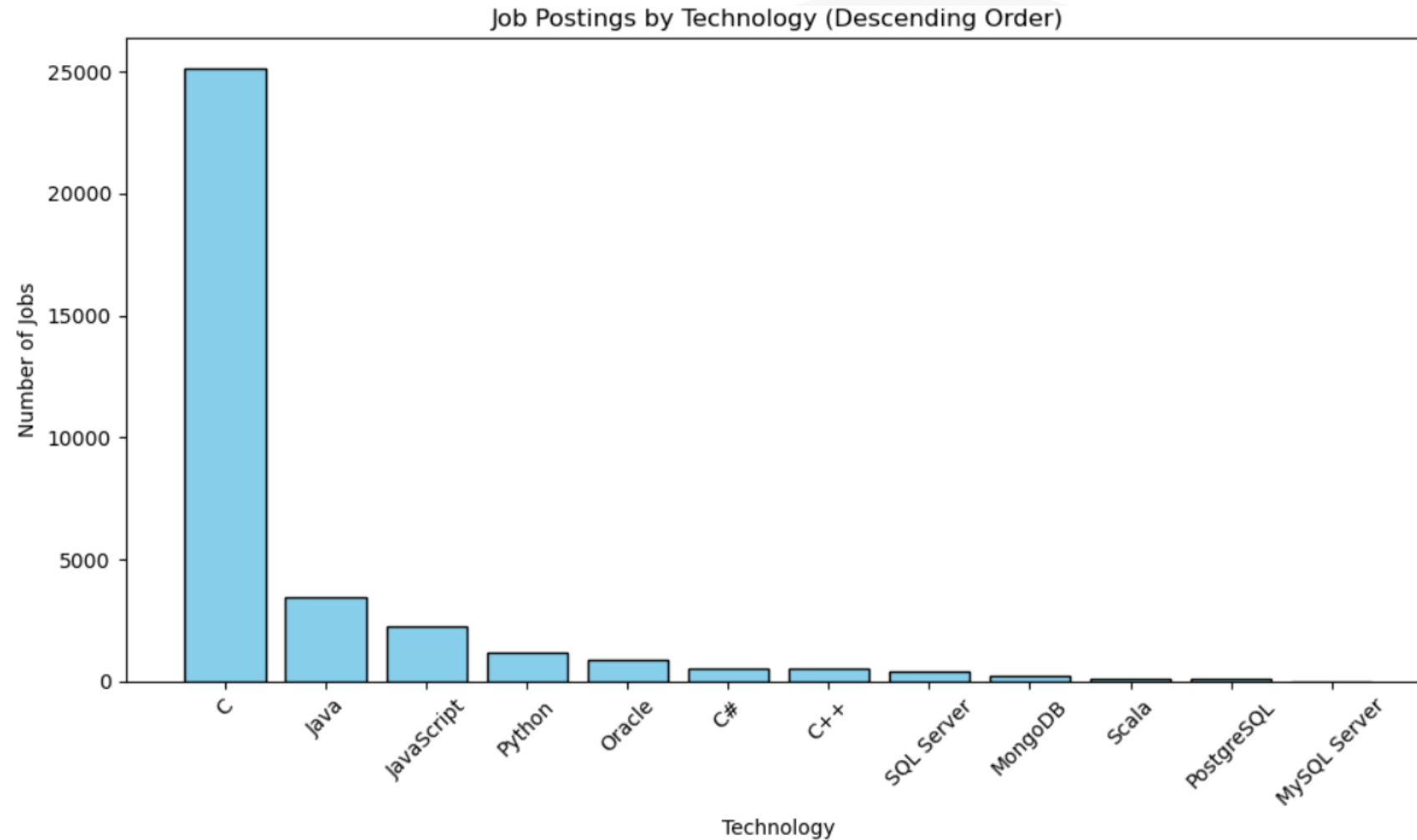
Top 10 Desired Platforms



Respondent distribution by Formal Education Level



JOB POSTINGS



POPULAR LANGUAGES

