



IBM Data Analyst Capstone Project

Renigale Rajan
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OUTLINE



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EXECUTIVE SUMMARY



- JavaScript, Python, HTML/CSS, SQL, and TypeScript are the most desirable programming languages for next year.
- PostgreSQL, MongoDB, Redis, MySQL, and ElasticSearch are the most desirable databases for next year.
- Gender gap in the IT industry.
 - Male = 93.7%
 - Female = 6.3%

INTRODUCTION



- Stack Overflow, a popular website for developers, conducted a survey amongst developers from around the world about technology trends in 2019.
 - Programming Languages
 - Databases
 - Demographics
- Target audience:
 - IT professionals
 - Anyone interested in the IT field

METHODOLOGY

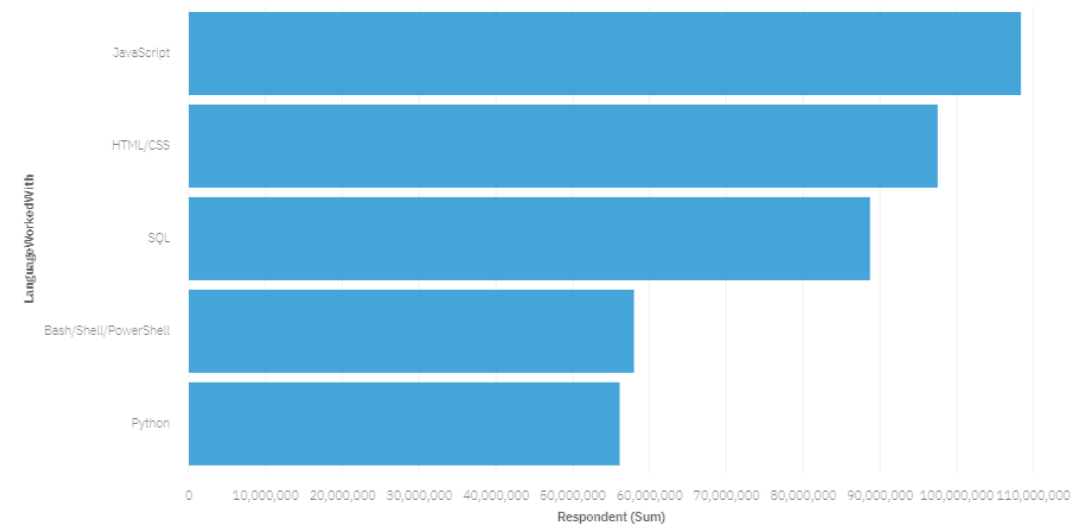


- Data Sources:
 - Stack Overflow Developers Survey 2019
 - Github Job Posting
 - Programming Language Annual Salary
- Data Exploration and Cleaning
 - Python
- Data Visualization
 - IBM Cognos Analytics
- Presentation

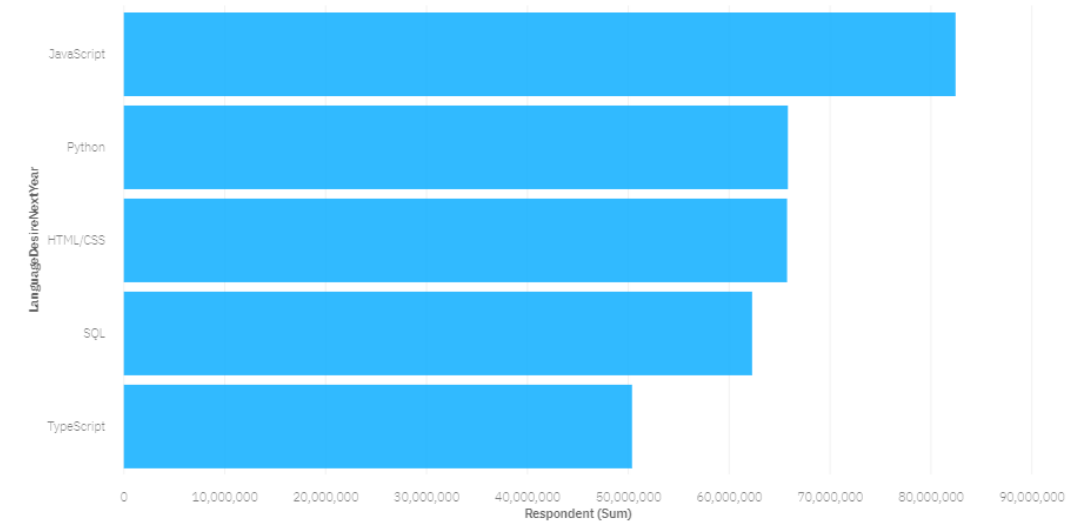
RESULTS

PROGRAMMING LANGUAGE TRENDS

Top 5 Programming Languages Worked With



Top 5 Programming Languages Desired for Next Year



PROGRAMMING LANGUAGE TRENDS – FINDINGS & IMPLICATIONS

Findings

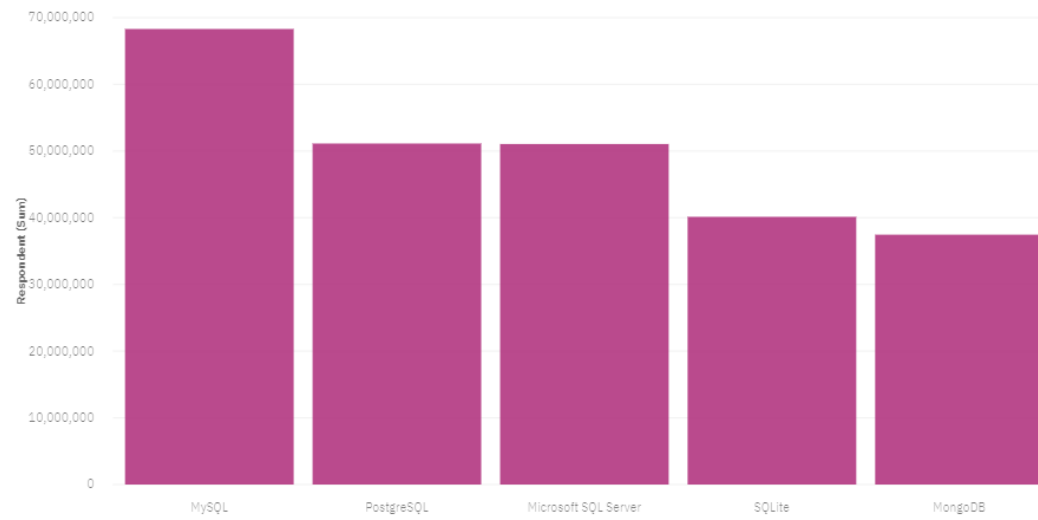
- JavaScript is the most in demand programming language.
- Python, HTML/CSS, and SQL are other in demand programming languages.
- Skills in TypeScript is more desirable than Bash/Shell/PowerShell for next year.

Implications

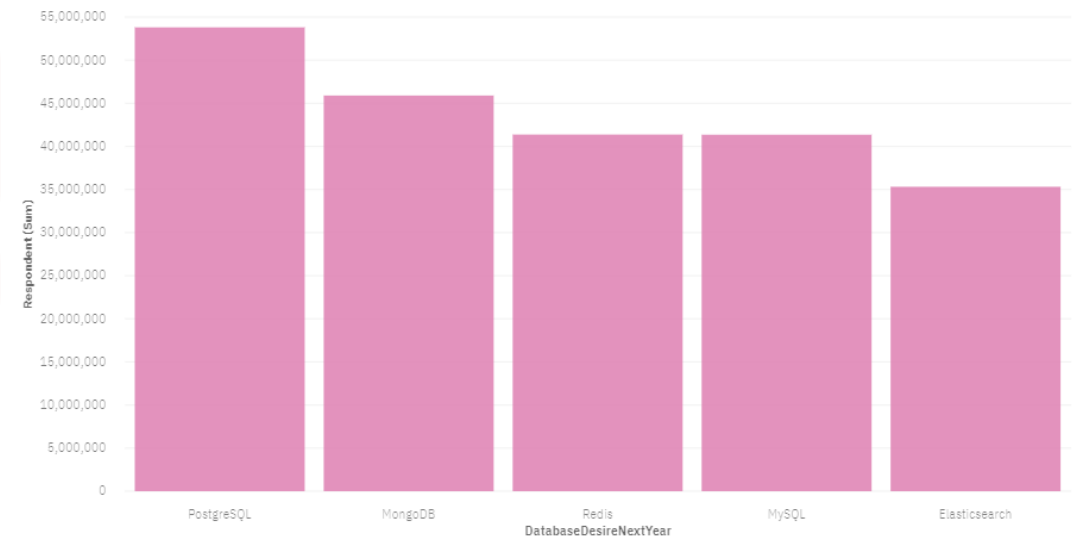
- Python's increase in demand may overtake JavaScript in the future.
- JavaScript, Python, HTML/CSS, and SQL are consistently in demand.
- Web development remains in high demand.

DATABASE TRENDS

Top 5 Databases Worked With



Top 5 Databases Desired for Next Year



DATABASE TRENDS – FINDINGS & IMPLICATIONS

Findings

- PostgreSQL and MongoDB have an increase in demand.
- MySQL has a decrease in demand for next year.
- Skills in Redis and ElasticSearch are more desirable than Microsoft SQL Server and SQLite for next year.

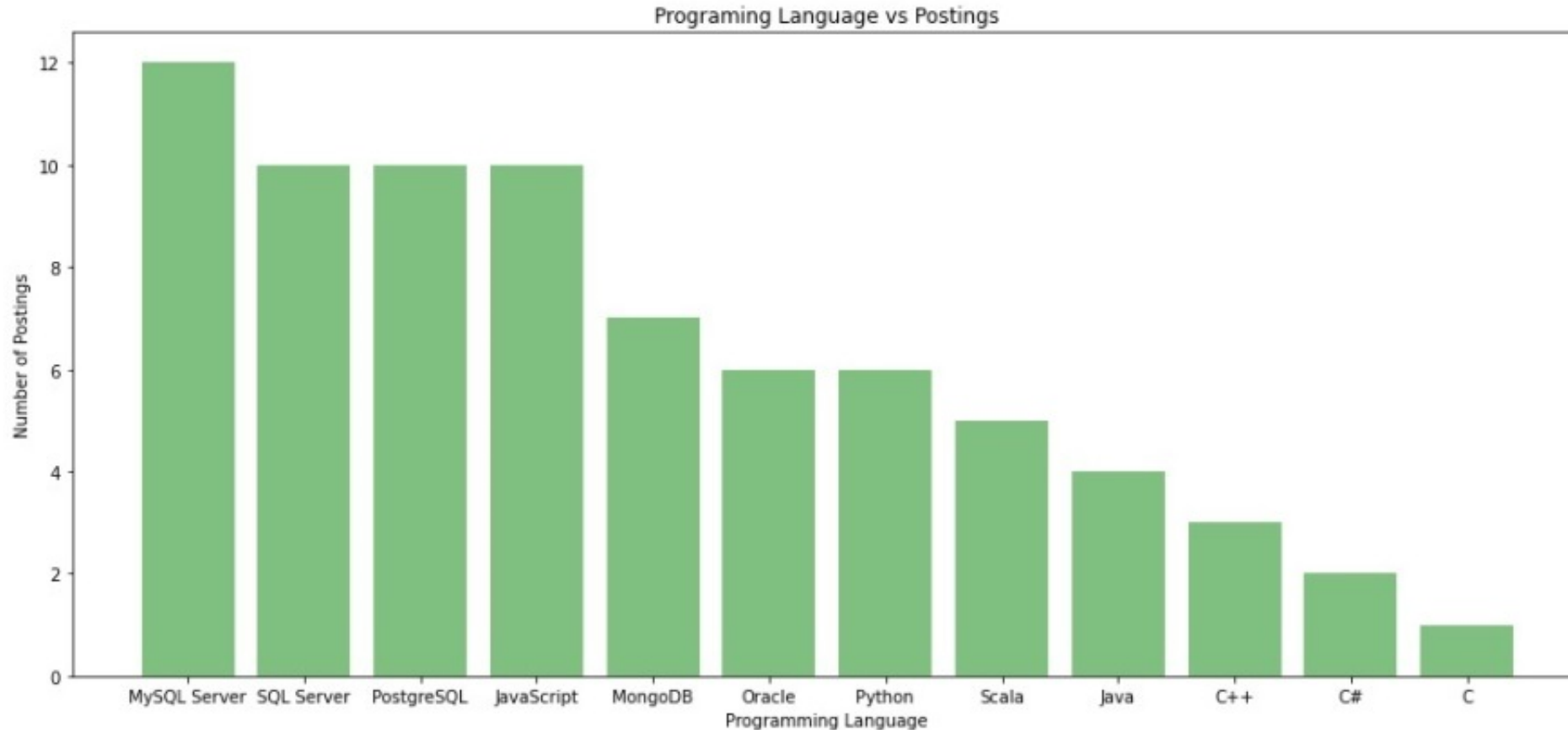
Implications

- PostgreSQL and MongoDB are the most consistent in demand databases.
- Open source databases are preferred.
- Demand is volatile.

GITHUB JOB POSTINGS



POPULAR LANGUAGES



DASHBOARD



<https://datapatform.cloud.ibm.com/dashboards/f0081943-1354-4668-ae48-29245ab2d0f5/view/5460d50564962be150d0b1e407cf2a527e652c54babb8b0b87d17b490a602497a83b1196c8284c58da14066bfbe9405ec1>

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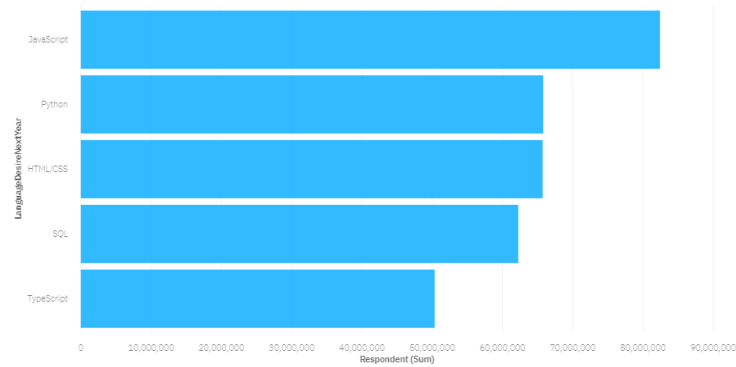
DASHBOARD TAB 1



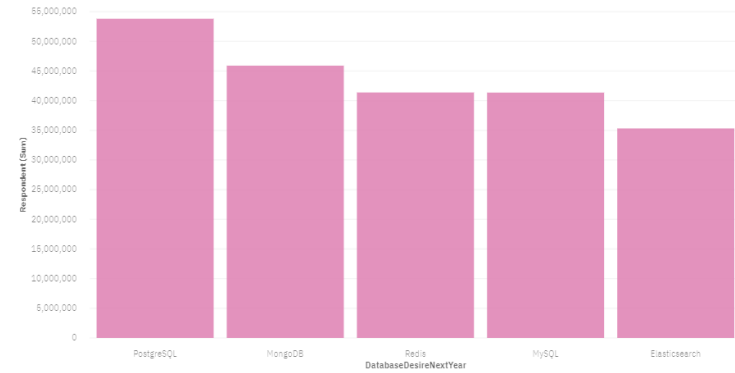
DASHBOARD TAB 2

Current Technology Usage Future Technology Usage Demographics

Top 5 Programming Languages Desired for Next Year



Top 5 Databases Desired for Next Year



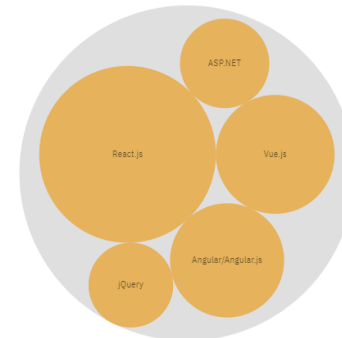
Top 5 Platforms Desired for Next Year

Respondent (Sum)
35,899,026 73,486,493

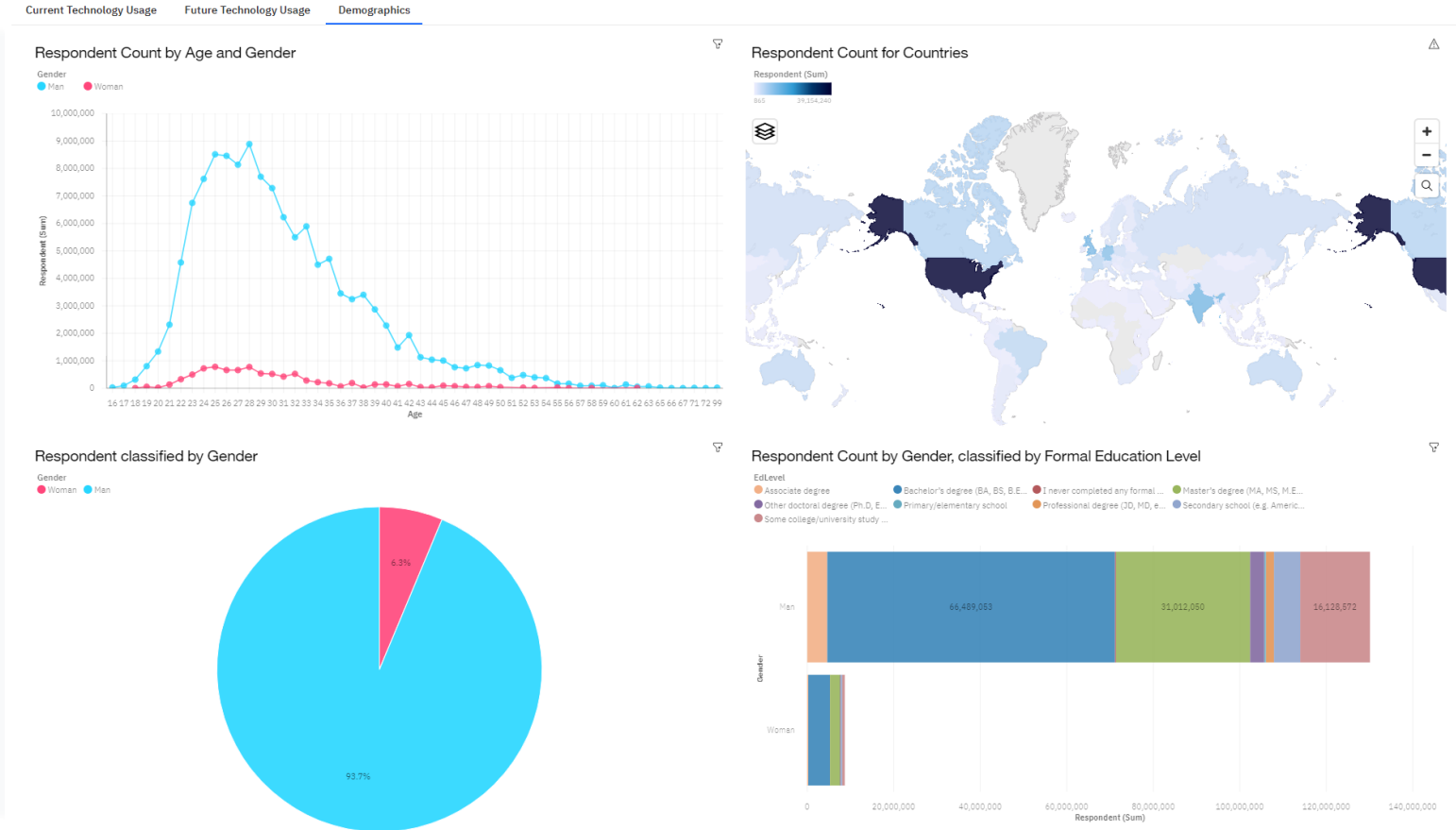
Top 5 Web Frames Desired for Next Year

Respondent (Sum)
27,960,271 58,302,969

Linux
AWS
Android
Docker
Windows



DASHBOARD TAB 3



DISCUSSION



- New technology constantly emerges leading to changes in demand.
- The IT industry needs to diversify in order to eliminate gender gap.

OVERALL FINDINGS & IMPLICATIONS

Findings

- Trends and demands fluctuate based on new technologies.
- JavaScript and Python are the most popular programming languages.
- PostgreSQL is the most popular database.
- Gender gap in the IT field.

Implications

- IT professionals and companies have to learn and adapt to new demands.
- Having skills that are high in demand leads to more job opportunities.
- Gender gap will affect job hiring trend.

CONCLUSION



- New technology leads to different trends and demands.
- JavaScript and Python are the most popular programming languages.
- PostgreSQL is the most popular database.
- The IT industry needs to diversify.