



Stack Overflow Technology Trends Analysis in 2019

DIN MOHAMMAD DOHAN

3rd February, 2024

OUTLINE



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

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

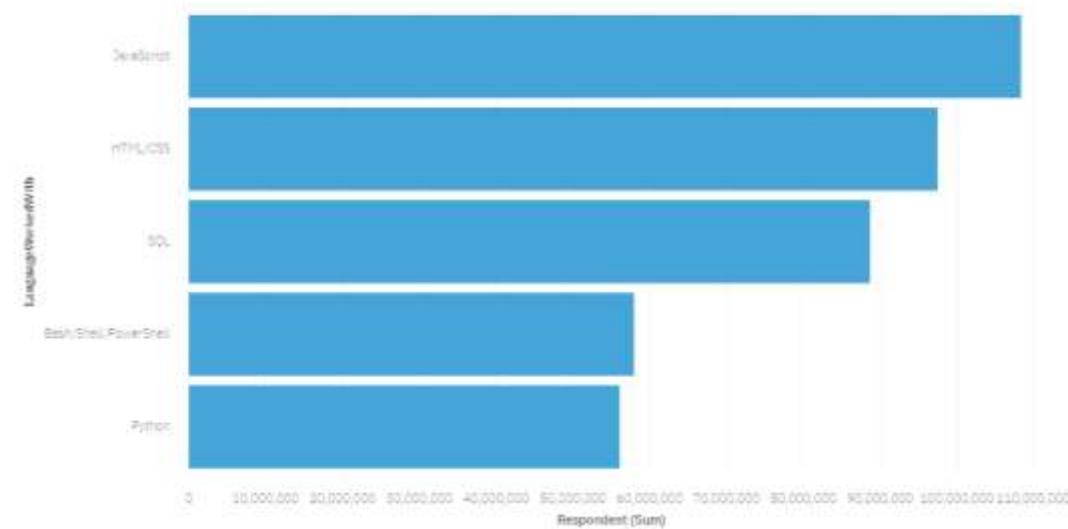
RESULTS

- The results consists of 4 main parts:
 - Programming language trend
 - Database trend
 - Platform trend
 - Web frame trend

PROGRAMMING LANGUAGE TRENDS

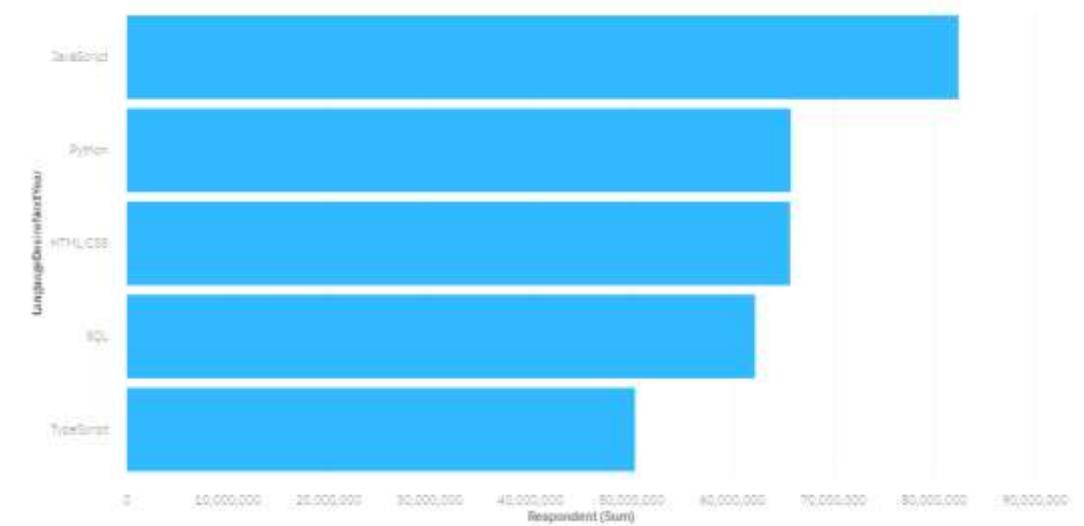
Current Year

Top 5 Programming Languages Worked With



Next Year

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.

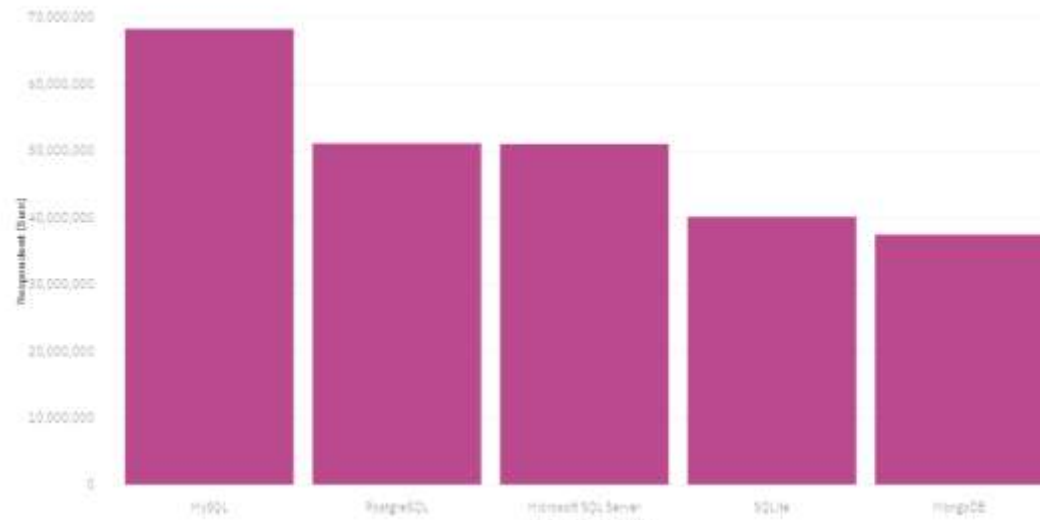
Implications

- 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

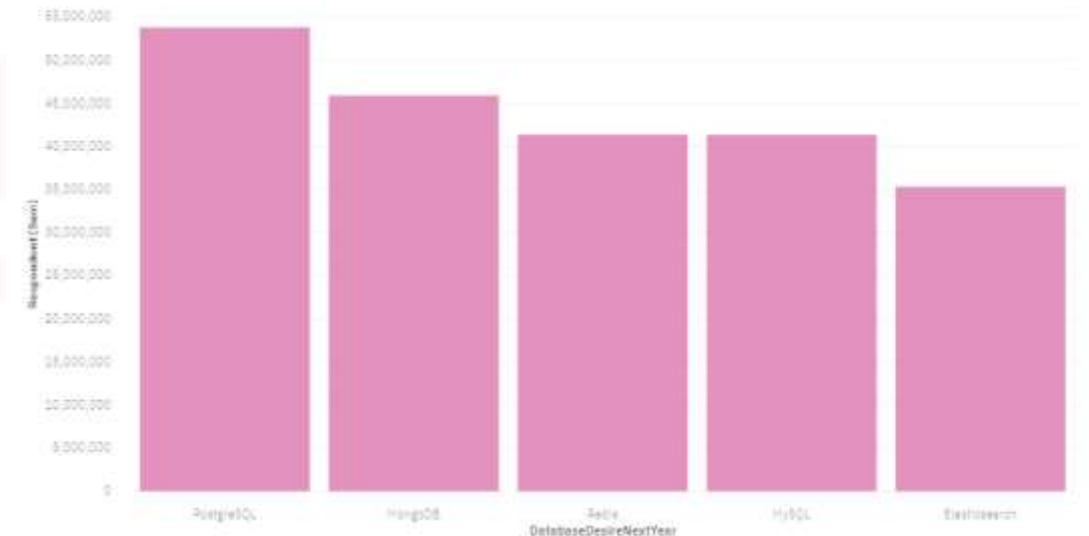
Current Year

Top 5 Databases Worked With



Next Year

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.

PLATFORM TRENDS

Current

Platform Worked With



Next Year

Platform Desire Next Year



PLATFORM TRENDS – FINDINGS & IMPLICATIONS

Findings

- Windows and Linux still dominates the platform trend.
- Android is No.1 in mobile platform.
- Cloud platform such as Kubernetes, Docker, AWS is getting more and more market share.

Implications

- Windows and Linux are still main developing platform in a foreseeable future.
- The transformation to cloud computing is a non-reversible process.

WEB FRAME TRENDS

Current

Top 10 Web Frame Worked With

Respondent (Cou...
939 4,629
WebFrameWorkedWith

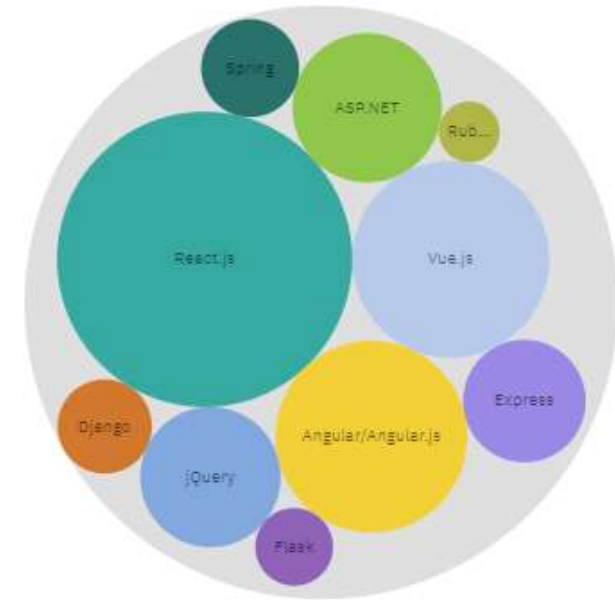


Next

Top 10 Web Frame Desire Next Year

Respondent (Cou... 970 4,714
WebFrameDesireNextYear

- ASP.NET
- Angular/Angular.js
- Django
- Express
- Flask
- Ruby on Rails
- Spring
- Vue.js
- jQuery



WEB FRAME TRENDS – FINDINGS & IMPLICATIONS

Findings

- jQuery decreases from No.1 to No.4.
- React.js moves up from No.3 to No.1
- Vue.js moves from No.9 to No.3.
- Angular.js stays at same position.

Implications

- jQuery quickly loses market share show lack of interest in its future development.
- React.js and Vue.js becomes the new standard for web frame development.

GITHUB REPOSITORY

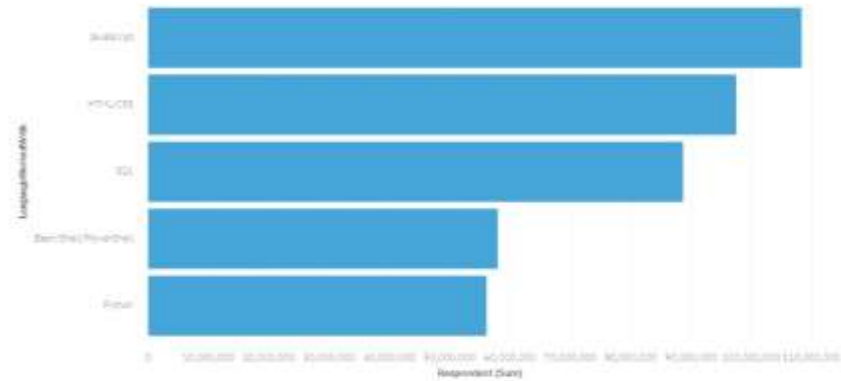
GitHub Repository Name: IBM Data Analyst Capstone Project

Link:
<https://github.com/DinMohammadDohan/IBM-DataAnalyst-Capstone-Project>

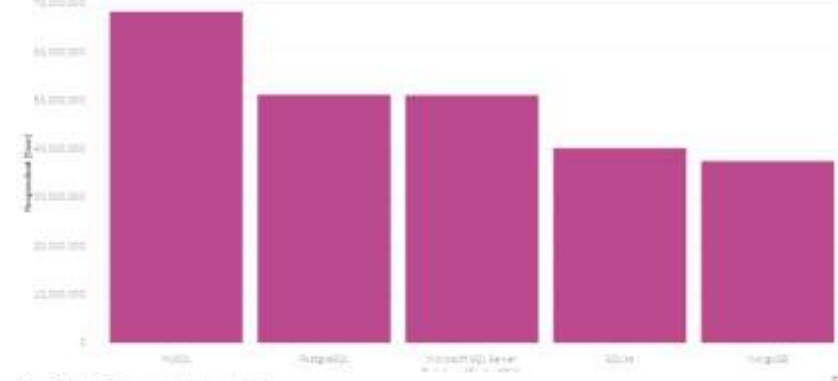
DASHBOARD TAB 1

Current Technology Usage Future Technology Usage Demographics

Top 5 Programming Languages Worked With



Top 5 Databases Worked With



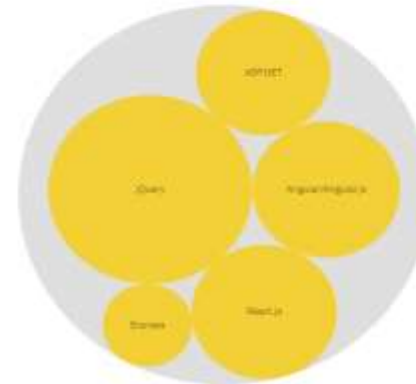
Top 5 Platforms Worked With



Top 5 Web Frames Worked With



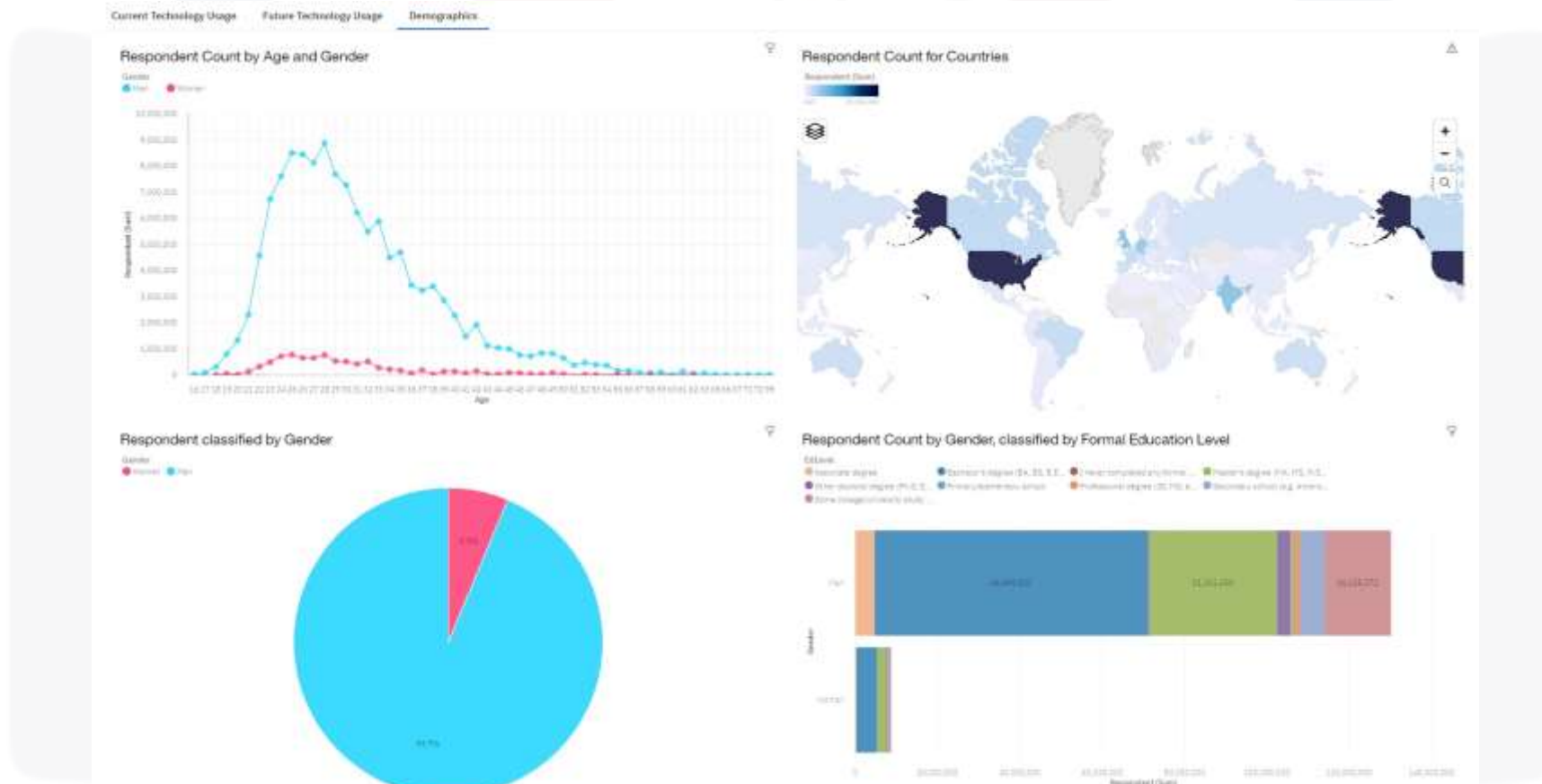
Linux
Docker
Windows
AWS



DASHBOARD TAB 2



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

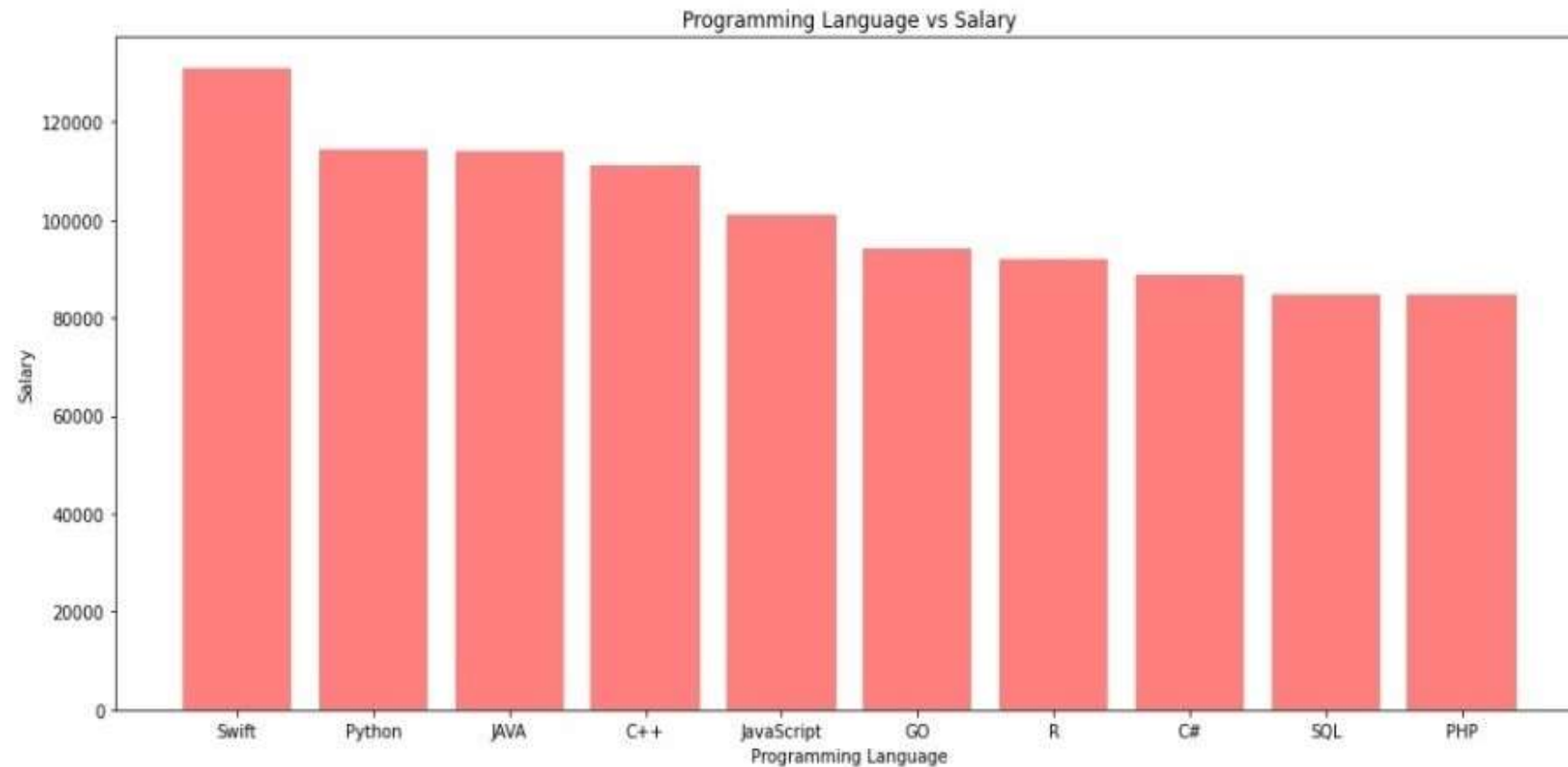
Findings

- 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.

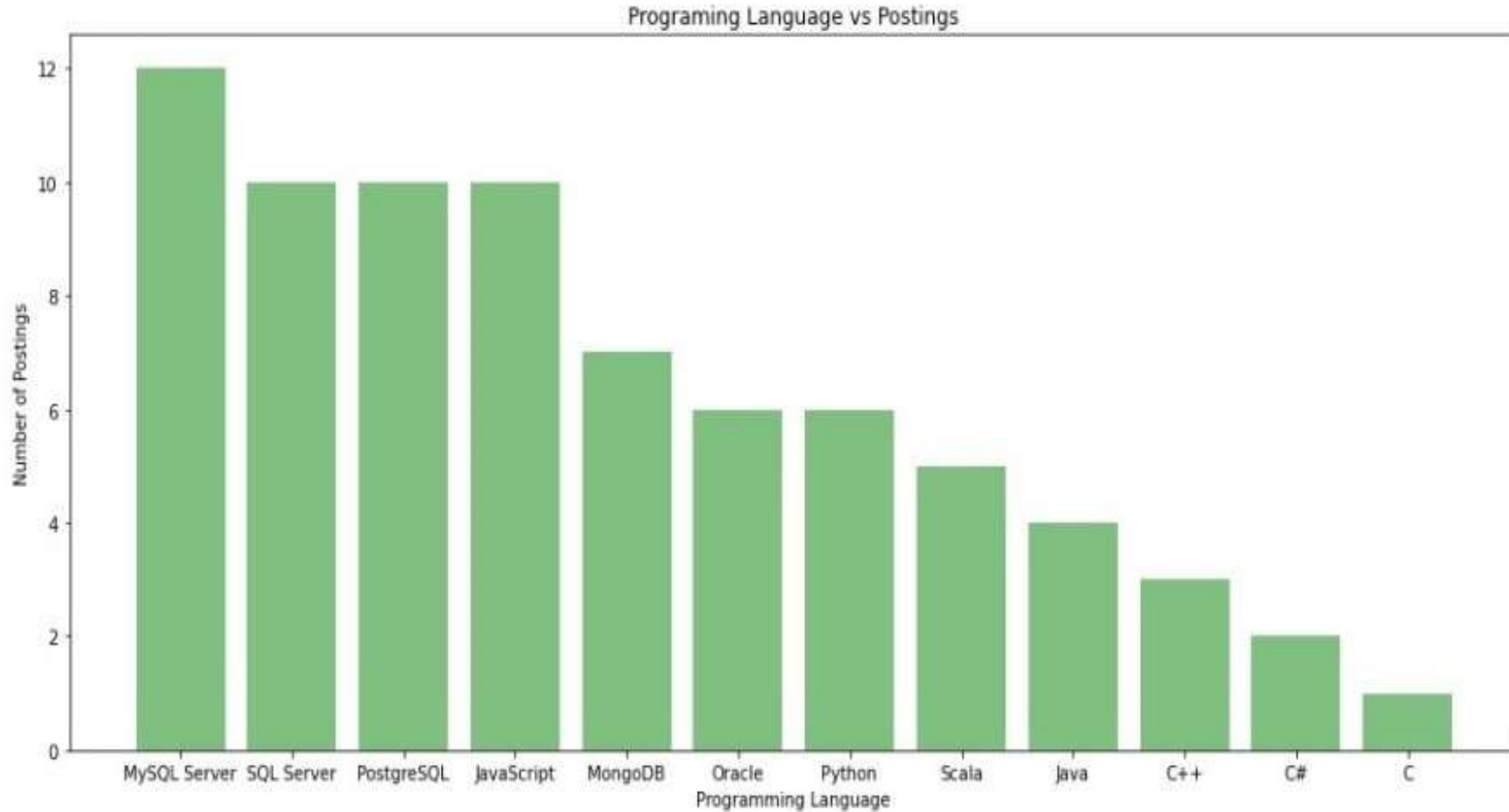
Implications

- 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.

JOB POSTINGS



POPULAR LANGUAGES



CONCLUSION



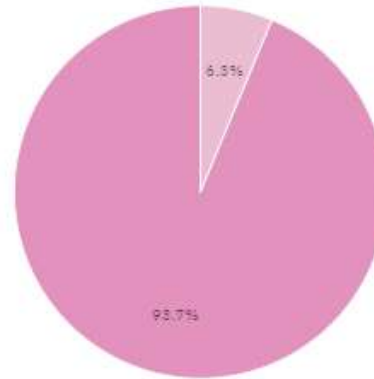
- New technology leads to different trends and demands.
- JavaScript and Python are the most popular programming languages.
- PostgreSQL is the most popular database.
- The IT industry needs to diversify.

APPENDIX



Respondent Classified by Gender

Gender
● Woman ● Man



Respondent Count for Countries

Respondent (Cou...
1 3,058

