Technology Trends & Analysis

Maheen Sabahath

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OUTLINE

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EXECUTIVE SUMMARY

- Analysis of the competitive and dynamic tech industry

- Analysis of the three main classifications :
  - Current Technology Usage
  - Future Technology Usage
  - Demographics of the IT industry

- Top Programming Languages used

- Top Databases used

- Role of Gender in Tech

INTRODUCTION

- A visual guide to understanding trends and demographics
- Top 10 technology respondents work with and are expected to work with
  - Programming languages
  - Databases
  - Platforms
  - Web Frameworks
- Role of Gender in Tech globally
  - Respondent's age
  - Respondent's education level

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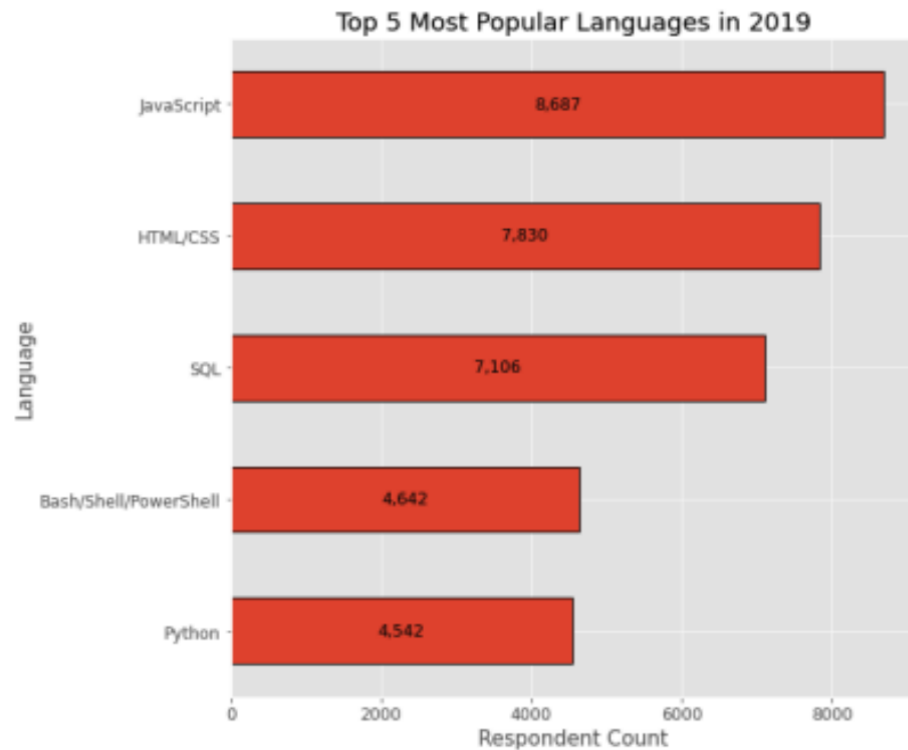
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METHODOLOGY

- Data used is extracted from Stack Overflow
- Survey and Analyze the current and future technological trends
- Analyze the survey of data demographics
- Data Illustration using Python and IBM Cognos Analytics
- Data Transformation
  - Data Cleaning
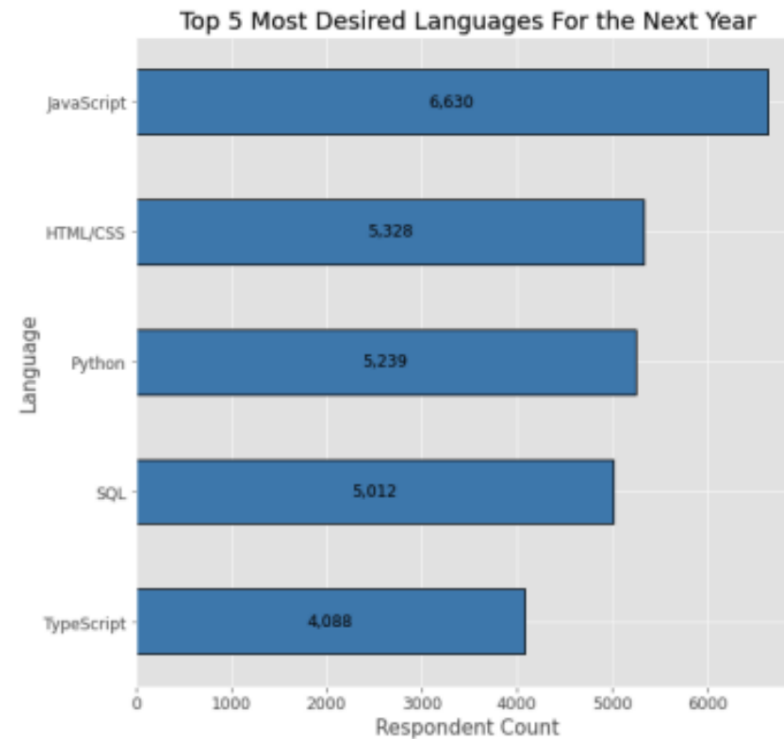 - Data Wrangling
  - Data Visualization

RESULTS

1. Programming Language Trends
2. Database Trends
3. Platform Trends
4. Web Framework Trends

PROGRAMMING LANGUAGE TRENDS

Current Year

Top 5 Most Popular Languages in 2019

Language	Respondent Count
JavaScript	8,687
HTML/CSS	7,830
SQL	7,106
Bash/Shell/PowerShell	4,642
Python	4,542

Next Year

Top 5 Most Desired Languages For the Next Year

Language	Respondent Count
JavaScript	6,630
HTML/CSS	5,328
Python	5,239
SQL	5,012
TypeScript	4,088

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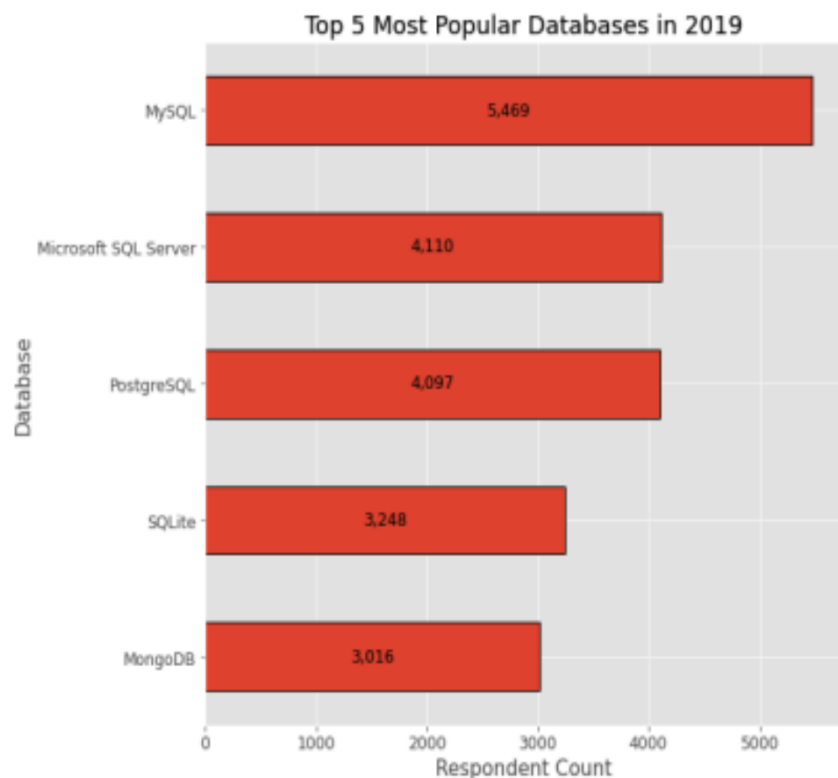# PROGRAMMING LANGUAGE TRENDS - FINDINGS & IMPLICATIONS

Findings

- JavaScript and HTML/CSS were the most popular in 2019 and will likely remain so the following year.

- SQL was popular in 2019 and will likely remain so.

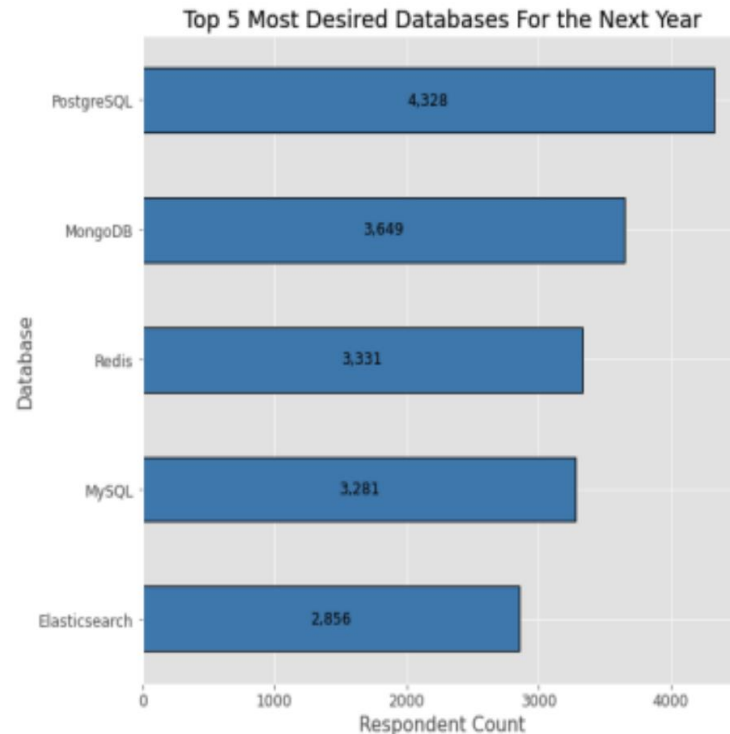- Decreasing interest in PowerShell/Bash.

Implications

- Web development is still in high demand, and JavaScript and HTML/CSS remain the dominant languages

- SQL remains the preferred language for big data storage and querying

- Python's rising popularity likely reflects the growth of AI and ML work

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DATABASE TRENDS

Current Year

Next Year

Top 5 Most Popular Databases in 2019

Database	Respondent Count
MySQL	5,469
Microsoft SQL Server	4,110
PostgreSQL	4,097
SQLite	3,248
MongoDB	3,016

Top 5 Most Desired Databases For the Next Year

Database	Respondent Count
PostgreSQL	4,328
MongoDB	3,649
Redis	3,331
MySQL	3,281
Elasticsearch	2,856

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DATABASE TRENDS - FINDINGS & IMPLICATIONS

Findings

- SQL database programs were the most popular in 2019, with MySQL in the lead.

- PostgreSQL is gaining popularity over other SQL database programs, and it was the overall most desired database for the next year

- MongoDB was popular in 2019 and gaining interest

Implications

- There appears to be increasing developer preference toward open-source database programs

- NoSQL database programs are gaining popularity, which likely reflects a growing need to handle non-relational and unstructured data

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DASHBOARD

The following link contains the full, interactive Cognos dashboard summarizing (a) current technology use, (b) future technology trend, and (c) demographics of the survey respondents :

https://dataplatform.cloud.ibm.com/dashboards/41527516-6d9d-4a36-bf1c-b6a0e2c6381b/view/4c22f20607b114c461e2bde4079a780f79352258b0bbd552848d7b490a607597a96041c3c87c4e59d3185765f0b8125ec0
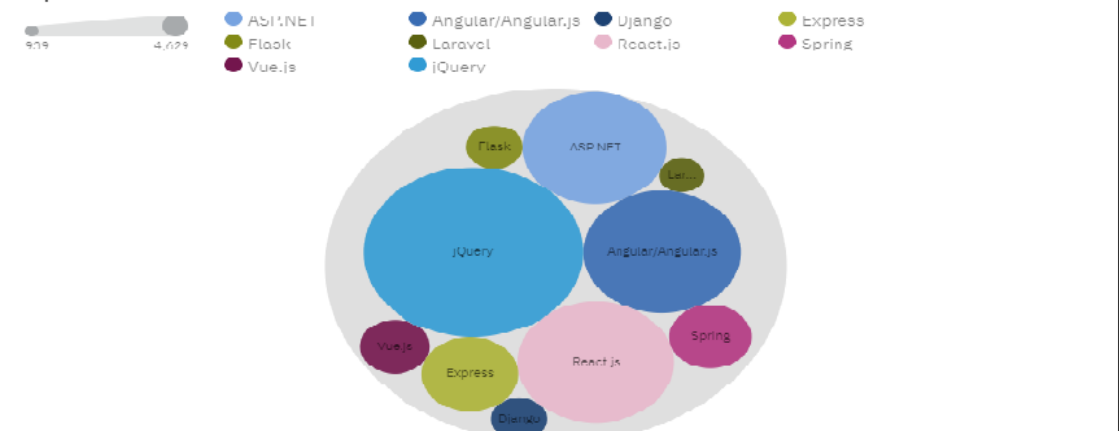
DASHBOARD 1: Current Technology Use
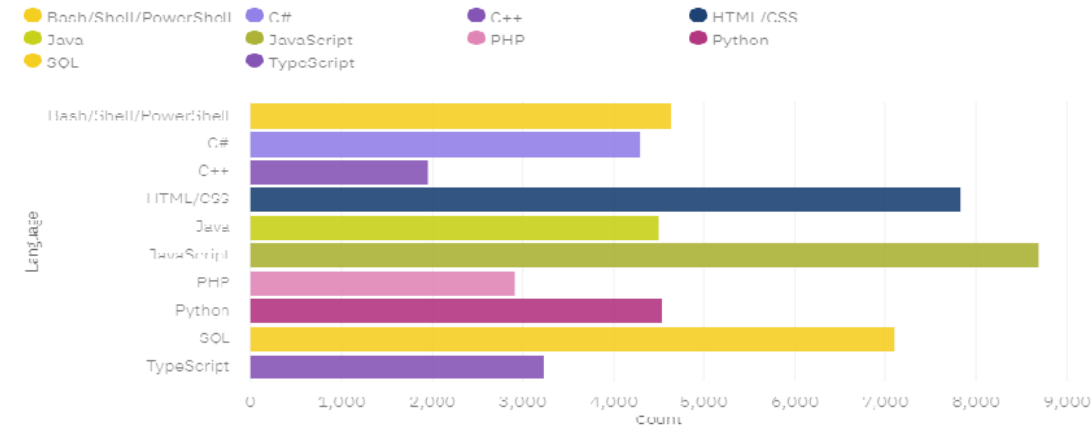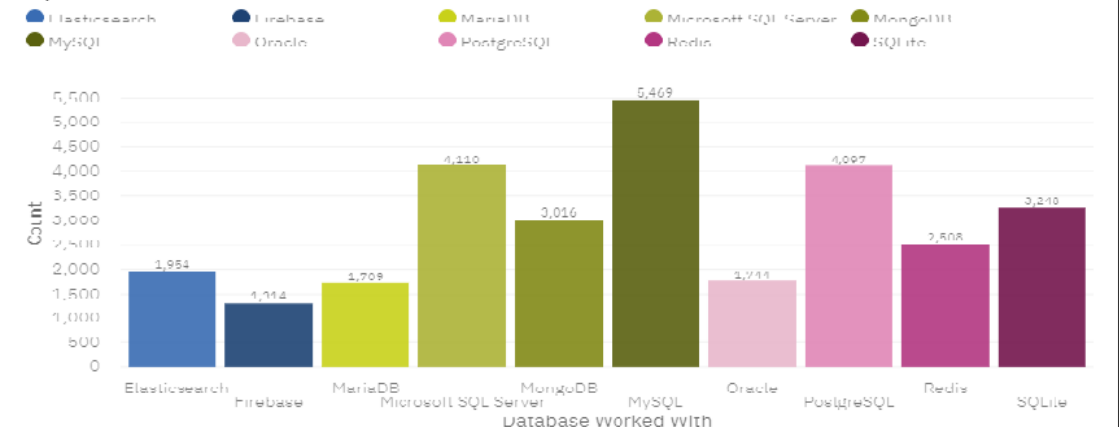
DASHBOARD 2:Future Technology Trend
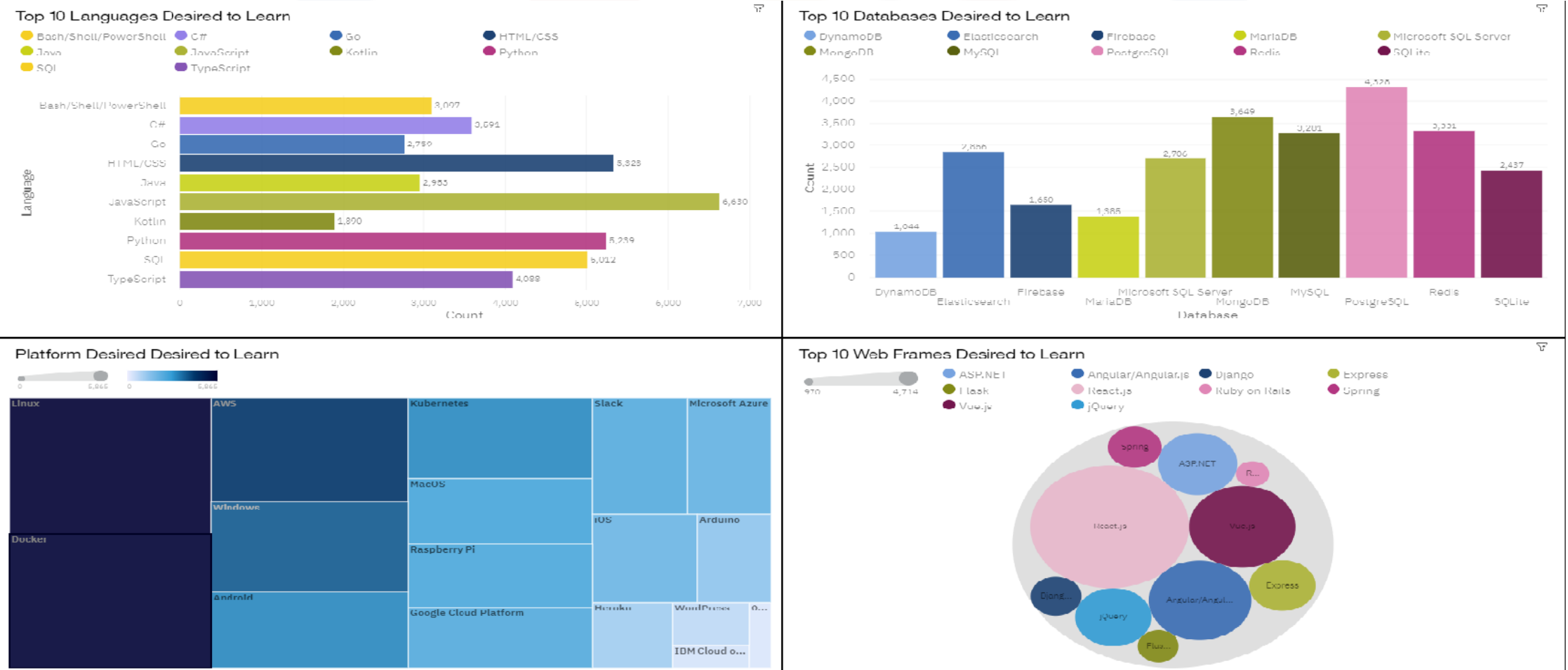
DASHBOARD 3: Demographics
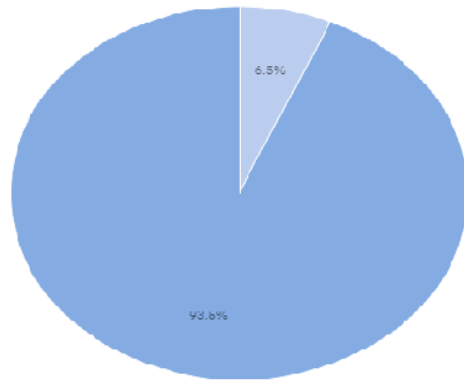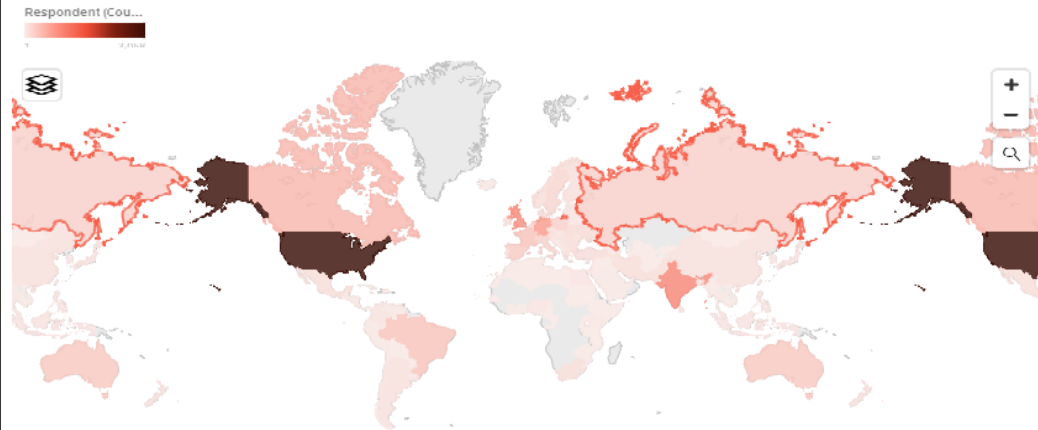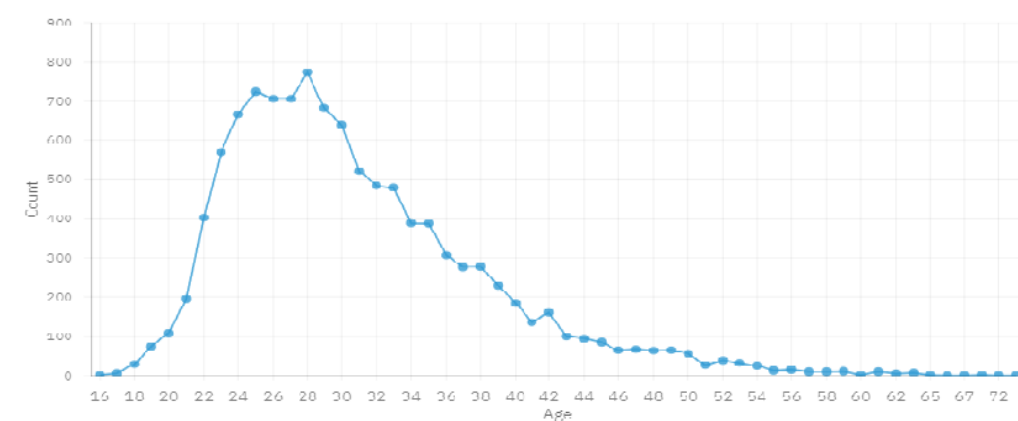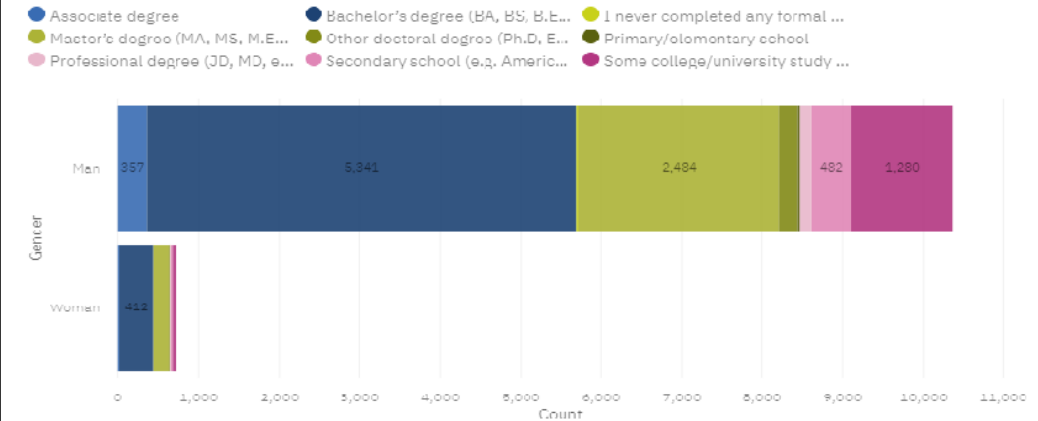
DISCUSSION

Taken together, the findings yield insights into the following questions:

- What kinds of developer technologies are in top demand?

- Which technologies should prospective developers and data professionals be learning?

- Which technologies should educators place more emphasis on teaching in upcoming years?

- What does the distribution of annual compensation for developers look like?

- What is the developer demographic like? Is there a gender representation gap?

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OVERALL FINDINGS & IMPLICATIONS

Findings

- High usage and interest in JavaScript and HTML/CSS remain high usage. There's also increasing interest in Typescript

- Increasing interest in Python

- A severe gender representation gap (in favor of men), despite median compensation being slightly higher for women

Implications

- Web development is still in high demand. Current and prospective developers may consider picking up Typescript in addition to JavaScript and HTML/CSS

- Policy makers, educators, and organizations should work to minimize the gender representation gap in addition to the technology divide between countries
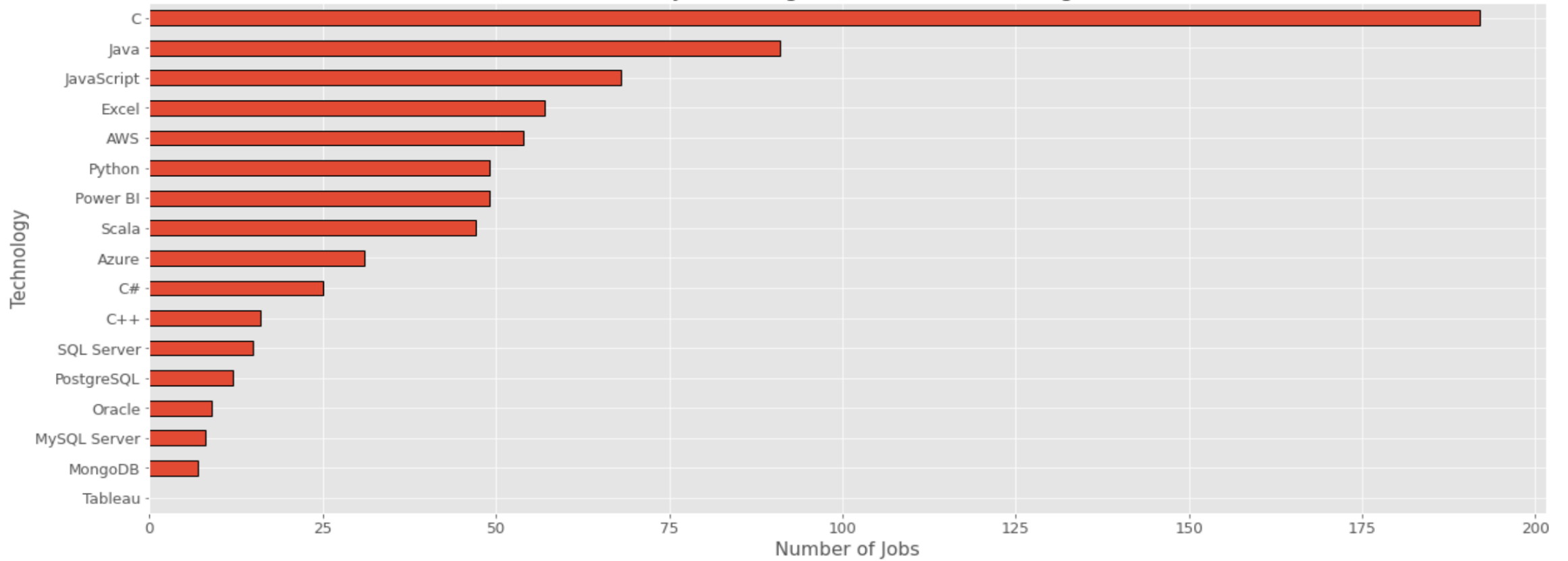
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CONCLUSION

A subset of data collected as part of the Stack Overflow Developer Survey was examined.

- The findings yielded numerous insights into the technologies most used and desired by developers in addition to the developer demographic

- Addressing training helps ensure there are educated workers for the future

- Training for women opens up another group for employers

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JOB POSTINGS

GitHub Job Postings for Selected Technologies

POPULAR LANGUAGES

Popular Programming Languages by Average Annual Salary