



# Developer Survey Report

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# OUTLINE



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

# EXECUTIVE SUMMARY



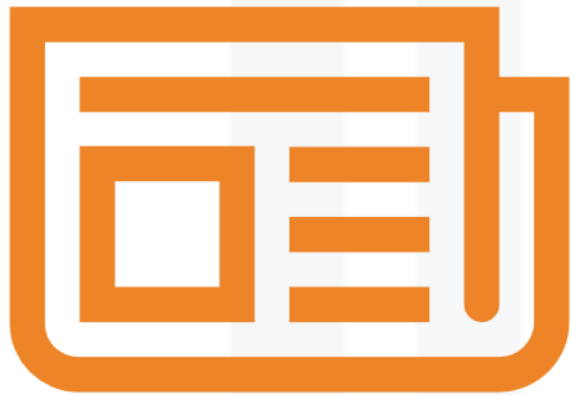
- ▶ JavaScript is ranked as the top programming language for the current year and is the most highly demanded programming language in the future year.
- ▶ HTML/CSS, SQL and Python are also some of the preferred skills to learn as they ranked at high positions for current and future year.
- ▶ PostgreSQL and MongoDB are more recommend as these two ranked the highest for database skills to learn in future year.
- ▶ Typescript and Python are likely to be in demand in future year.

# INTRODUCTION



- Stack Overflow's annual Developer Survey is the largest and most comprehensive survey of people who code around the world.
- Nearly 90,000 developers took the 20-minute survey .
- The Survey is covered everything from developers favorite technologies to their job preferences.
- Future skill requirements particularly based on top programming languages and database skills in demand can be inferred through this report.

# METHODOLOGY



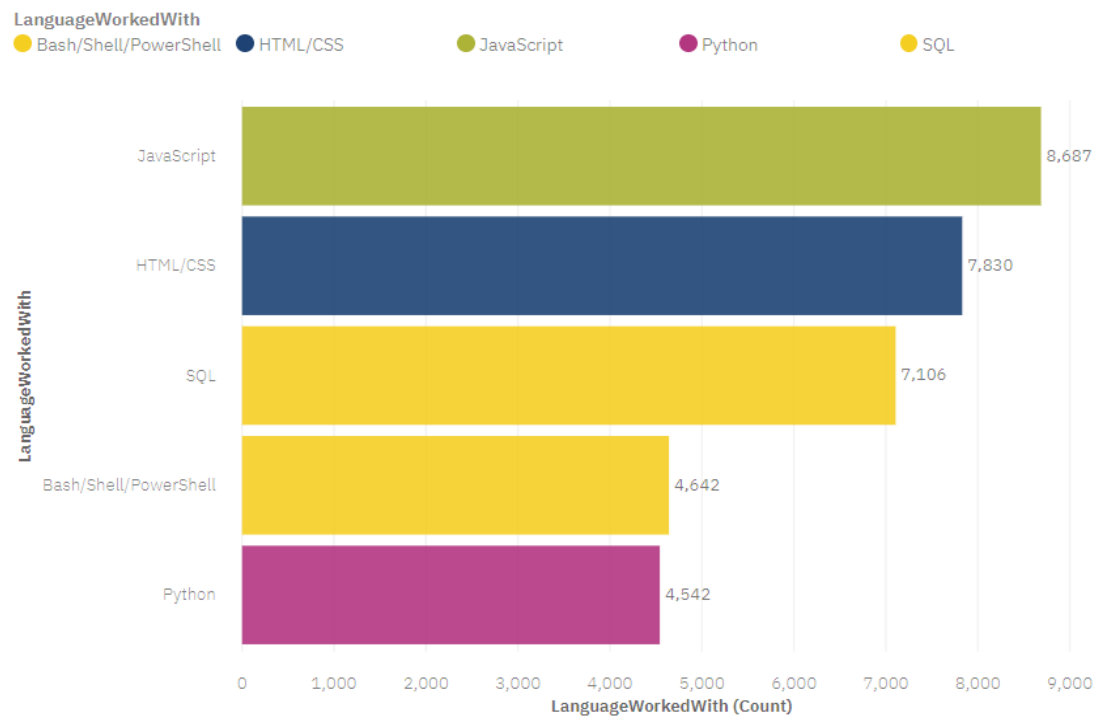
- ▶ Various data sources were used in collecting data for this project .
- ▶ Some of the sources are from online job postings, training portals, surveys which also includes GitHub Jobs API and Stack Overflow Developer Survey 2019 .
- ▶ Data was collected by applying web scraping on internet web sites and accessing APIs , various format such as .csv files, excel sheets and databases .
- ▶ Inconsistent data was then cleaned and processed for data analysis.
- ▶ When the data is ready, statistical techniques are applied to analyze the data
- ▶ A dashboard is then created using IBM Cognos Analytics.

# RESULTS

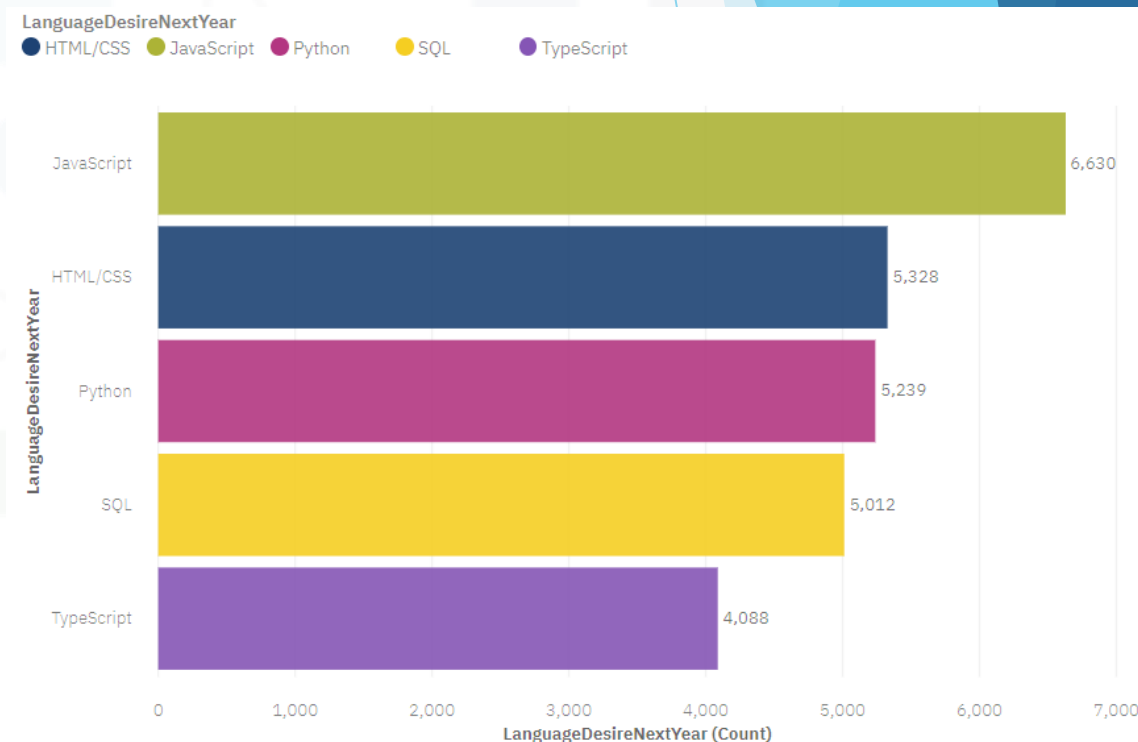
- ▶ JavaScript is ranked as the top programming language for the current year and is the most.
- ▶ HTML/CSS, SQL and Python are also some of the preferred skills to learn as they ranked at high positions for current and future year .
- ▶ PostgreSQL and MongoDB are more recommend as these two ranked the highest for database skills to learn in future year.
- ▶ Typescript and Python are likely to be in demand in future year.

# PROGRAMMING LANGUAGE TRENDS

Current Year



Next Year



# PROGRAMMING LANGUAGE TRENDS - FINDINGS & IMPLICATIONS

## Findings

- ▶ **JavaScript** ranked the highest programming language for current year and remain its position as top 1 for the next year.
- ▶ The demand for **Python** is increasing as it ranked from number 5 in current year to number 3 as the language desired for next year.
- ▶ **Bash/Shell/PowerShell** ranked number 4 at current year but dropped out from the top 5 languages desired for next year.

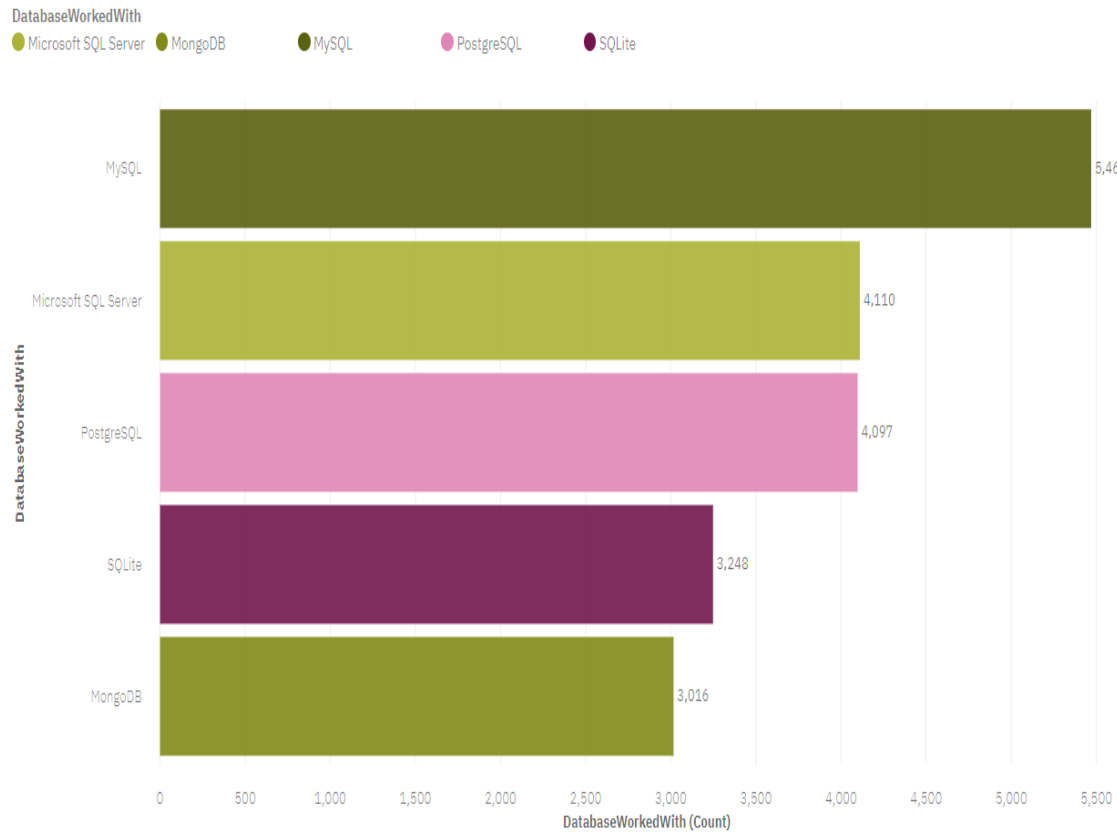
## Implications

- ▶ **JavaScript** is the most recommended programming language to learn according to the trend.
- ▶ **Typescript** is expected to grow next year.
- ▶ This followed by **HTML/CSS, SQL, Python** and other languages.

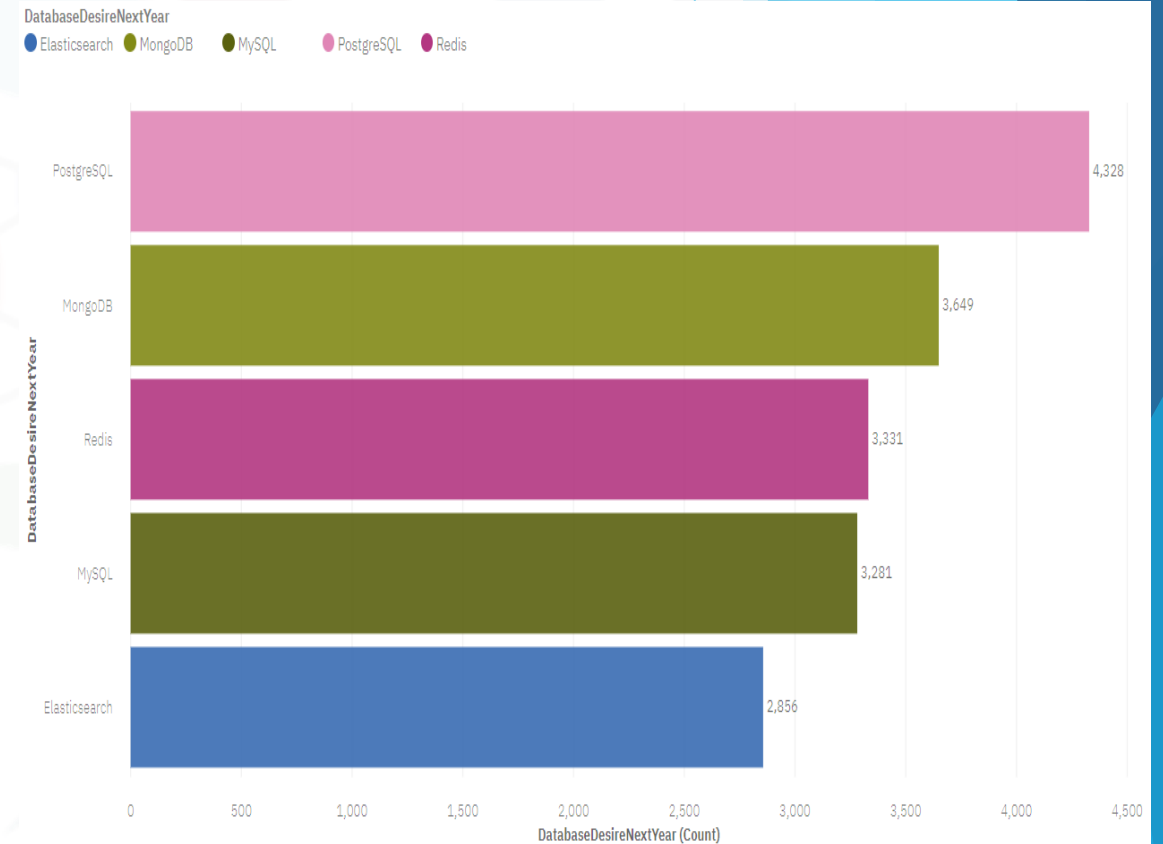


# DATABASE TRENDS

Current Year



Next Year



# DATABASE TRENDS - FINDINGS & IMPLICATIONS

## Findings

- ▶ **MySQL, PostgreSQL and MongoDB** are the only databases that remained in the top 5 database skills desired to learn for next year.
- ▶ The demand for **PostgreSQL and MongoDB** increased to become top 1 and top 2 respectively for the database skills needed on next year.
- ▶ **Microsoft SQL Server** is at the top 2 database skills for current year but is not included in the top 5 skills desired next year.

## Implications

- ▶ Open source databases are in high demand and are extensively used.
- ▶ Databases are continuously growing and it is important to adapt and learn new databases.
- ▶ **Redis** supports abstract data types and is used by many social media companies.

# DASHBOARD



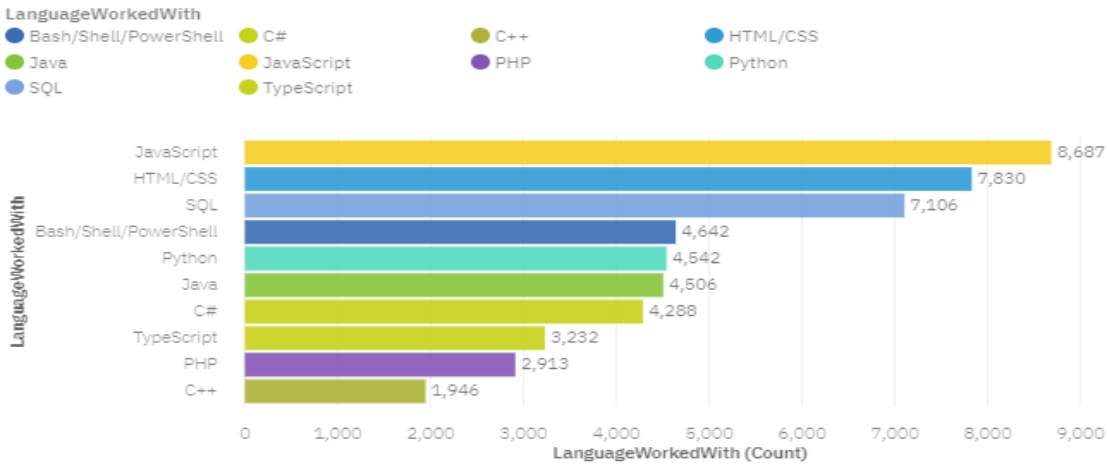
Cognos Dashboard Permalink:

<https://eu-gb.dataplatform.cloud.ibm.com/dashboards/8d406f7d-a14b-47e8-b747-4fb01dbce616/view/7824e52511903dd16acab5e40799290475627308b0bbd251d3d77b4908357897a93815c0c87d180e8b110364faee4058c8>

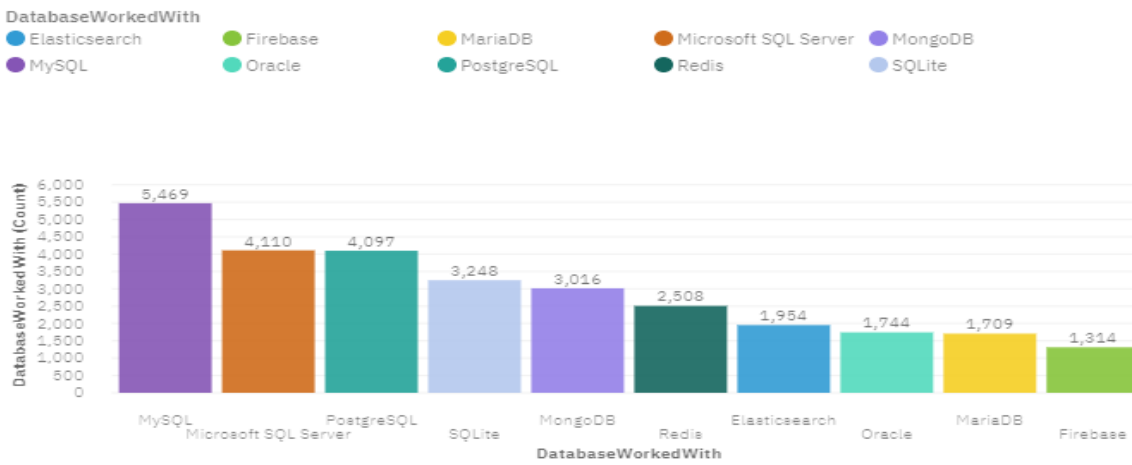
# DASHBOARD ON TECHNOLOGY USAGE

Current Technology Usage   Future Technology Trend   Demographics.   +

## Top 10 Languages worked with



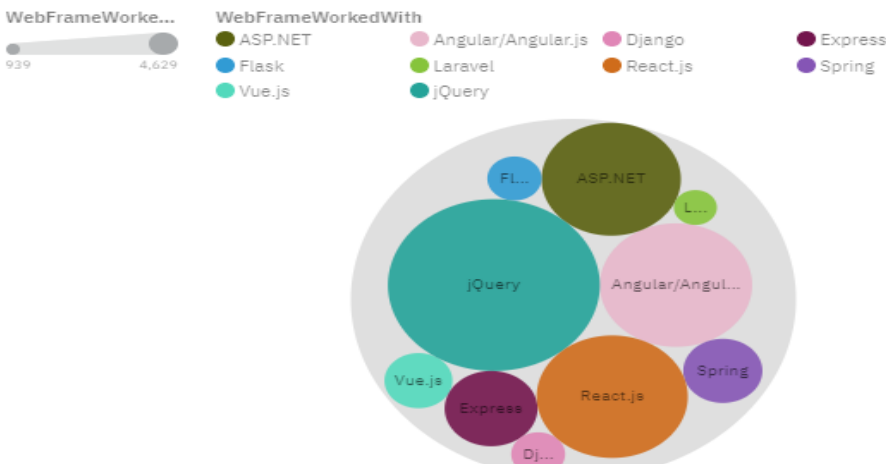
## Top 10 Databases worked with



## Platforms Worked With



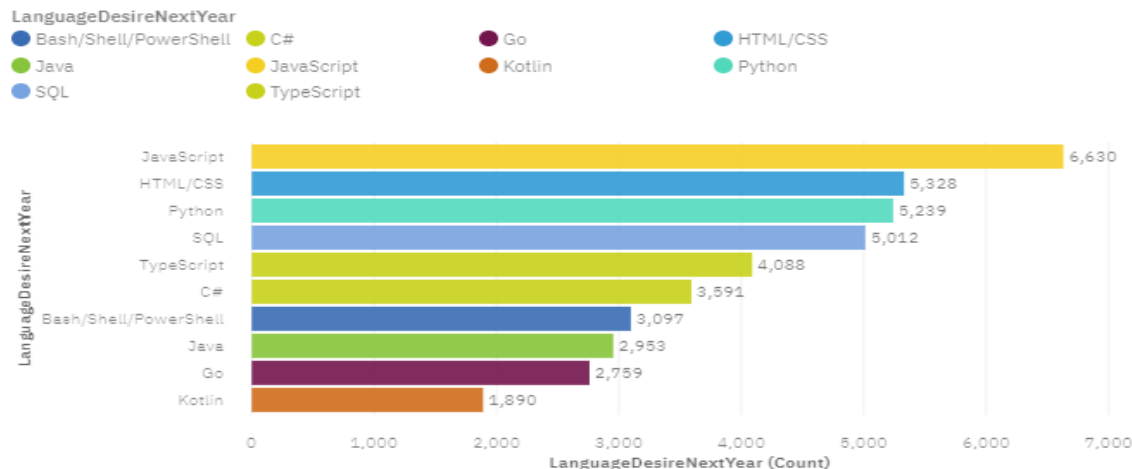
## Top 10 WebFrames worked with



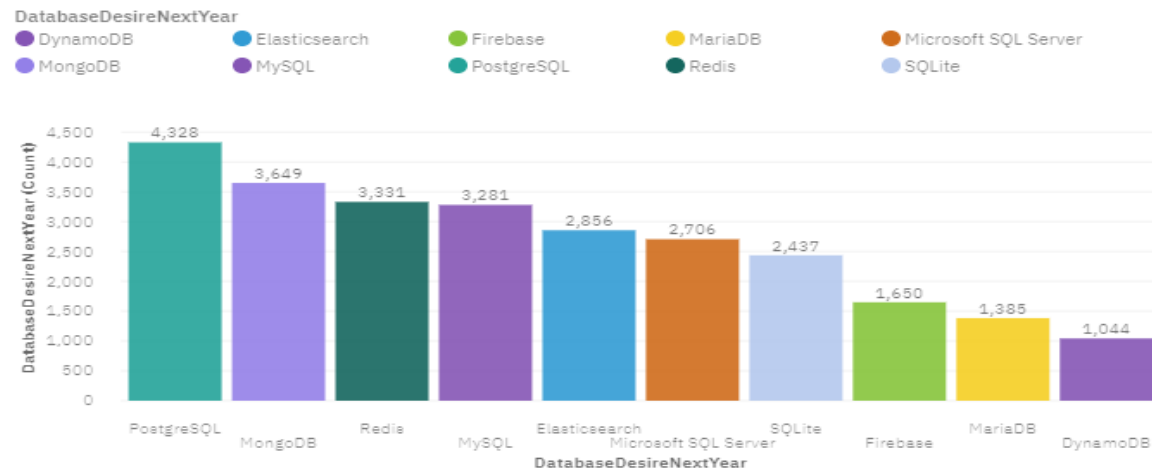
# DASHBOARD TAB ON FUTURE TECHNOLOGY TREND

Current Technology Usage   **Future Technology Trend**   Demographics.   +

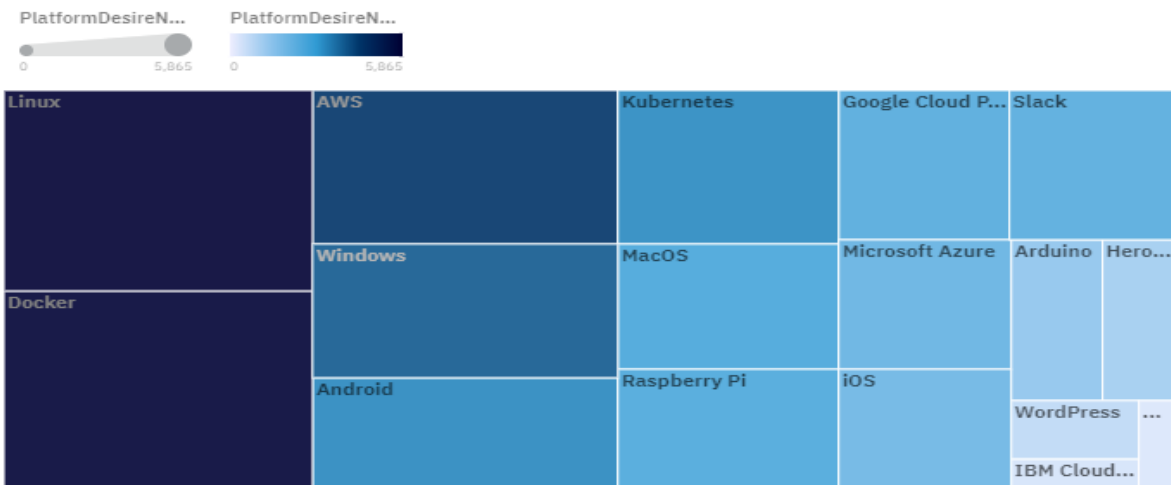
## Top 10 Language Desired Next Year



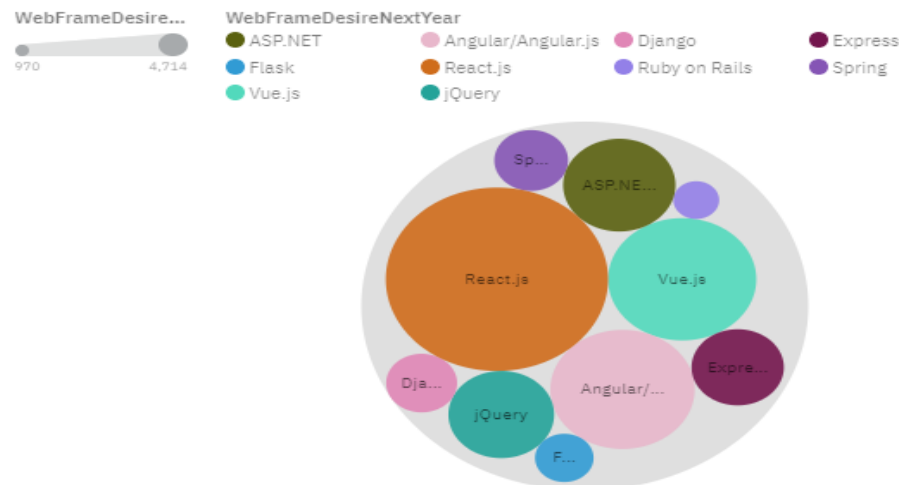
## Top 10 Database Desired Next Year



## Platform Desired Next Year



## Top 10 WebFrame Desired Next Year



IBM Developer

SKILLS NETWORK



# DASHBOARD TAB ON DEMOGRAPHICS

Current Technology Usage

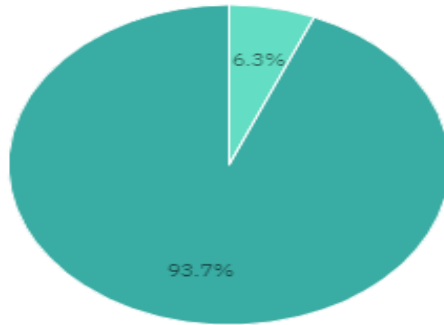
Future Technology Trend

**Demographics.**



## Respondent classified by Gender

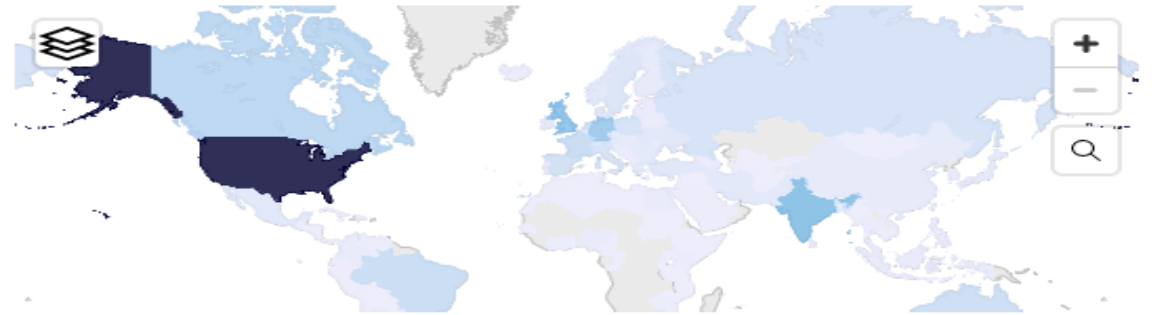
Gender  
● Woman ● Man



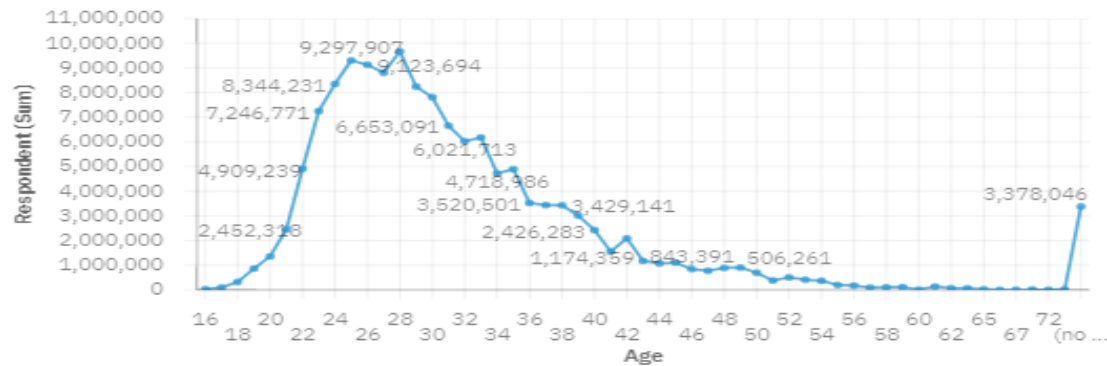
## Respondent Count for Countries

Country (Count)

1 3,058



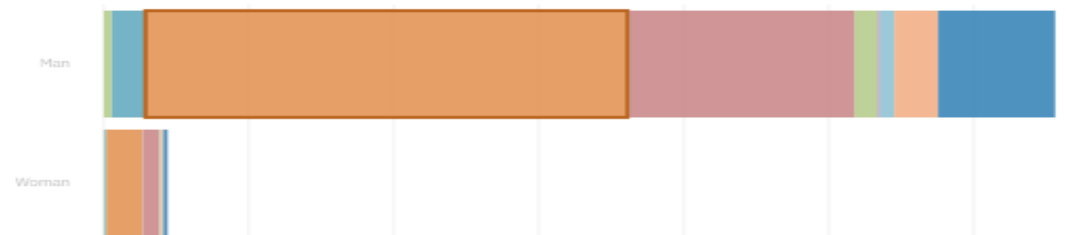
## Respondent Count by Age



## Respondent Count by Gender, classified by Formal Education Level

EdLevel

● (no value) ● Associate degree  
● Bachelor's degree (BA, BS, B.E... ● I never completed any formal ...  
● Master's degree (MA, MS, M.E... ● Other doctoral degree (Ph.D, E...



# DISCUSSION



- ▶ Technology trends in the Future and its impacts.
- ▶ The impacts created by Gender, Age and Education Level effects on the IT sector.
- ▶ Measures to take to adapt to the future technology trends.

# OVERALL FINDINGS & IMPLICATIONS

## Findings

- ▶ **JavaScript** as the most desired language for current and future year.
- ▶ **PostgreSQL and MongoDB** are becoming more desirable database skills to learn on future year
- ▶ Extreme Gender and Age Discrimination
- ▶ HTML/CSS, SQL and Python continue to remain among the top 5 languages for future year.

## Implications

- ▶ Technology is evolving at a much faster rate and companies need to adapt to the trends to keep up with the rate of change.
- ▶ Gender gap need to be reduced. Equal opportunities to be given to both Men and Women.
- ▶ Preferable to have knowledge on multiple languages and database skills to remain competitive in the job market.



# CONCLUSION

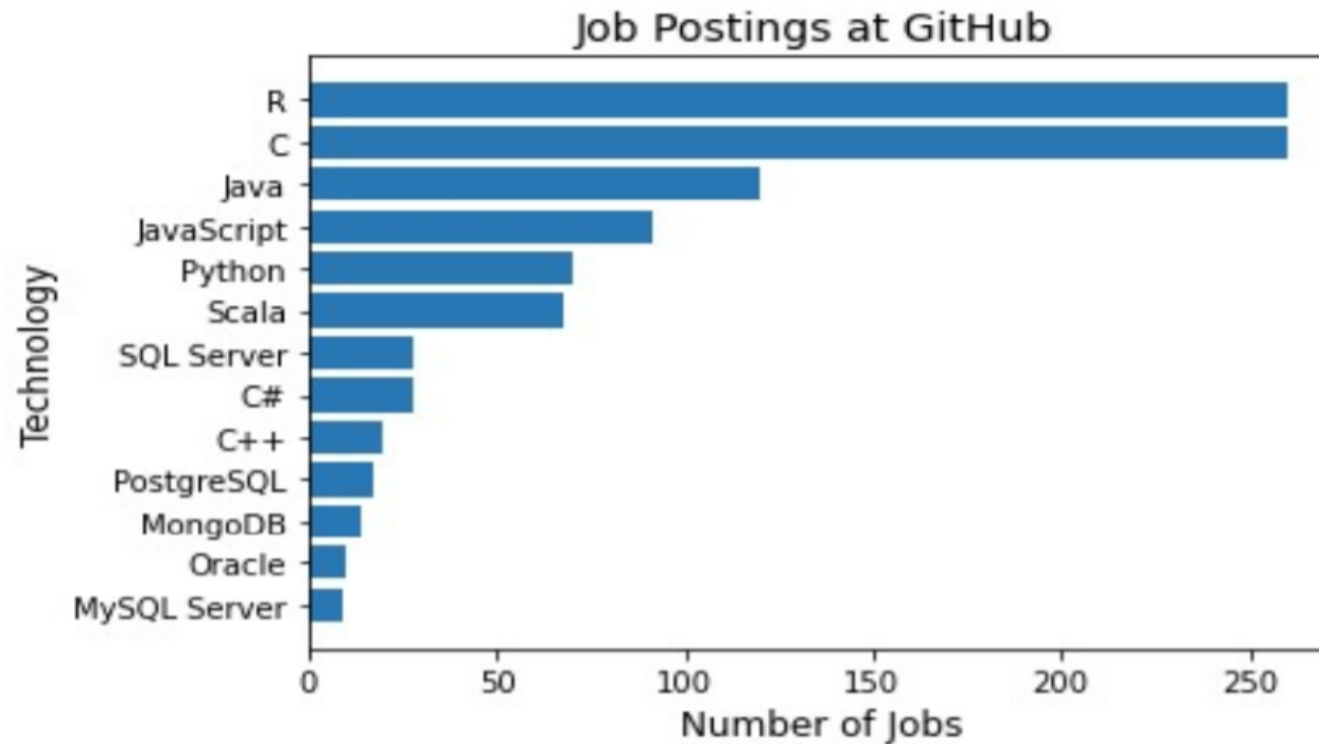


- ▶ Trends in programming languages and databases are constantly evolving as new technologies are emerging.
- ▶ JavaScript is the top programming languages in current and desired for future year.
- ▶ Open source databases are in high demand.
- ▶ The tech industry is highly male dominated.
- ▶ Preferable to have knowledge on multiple languages and database skills to remain competitive in the job market

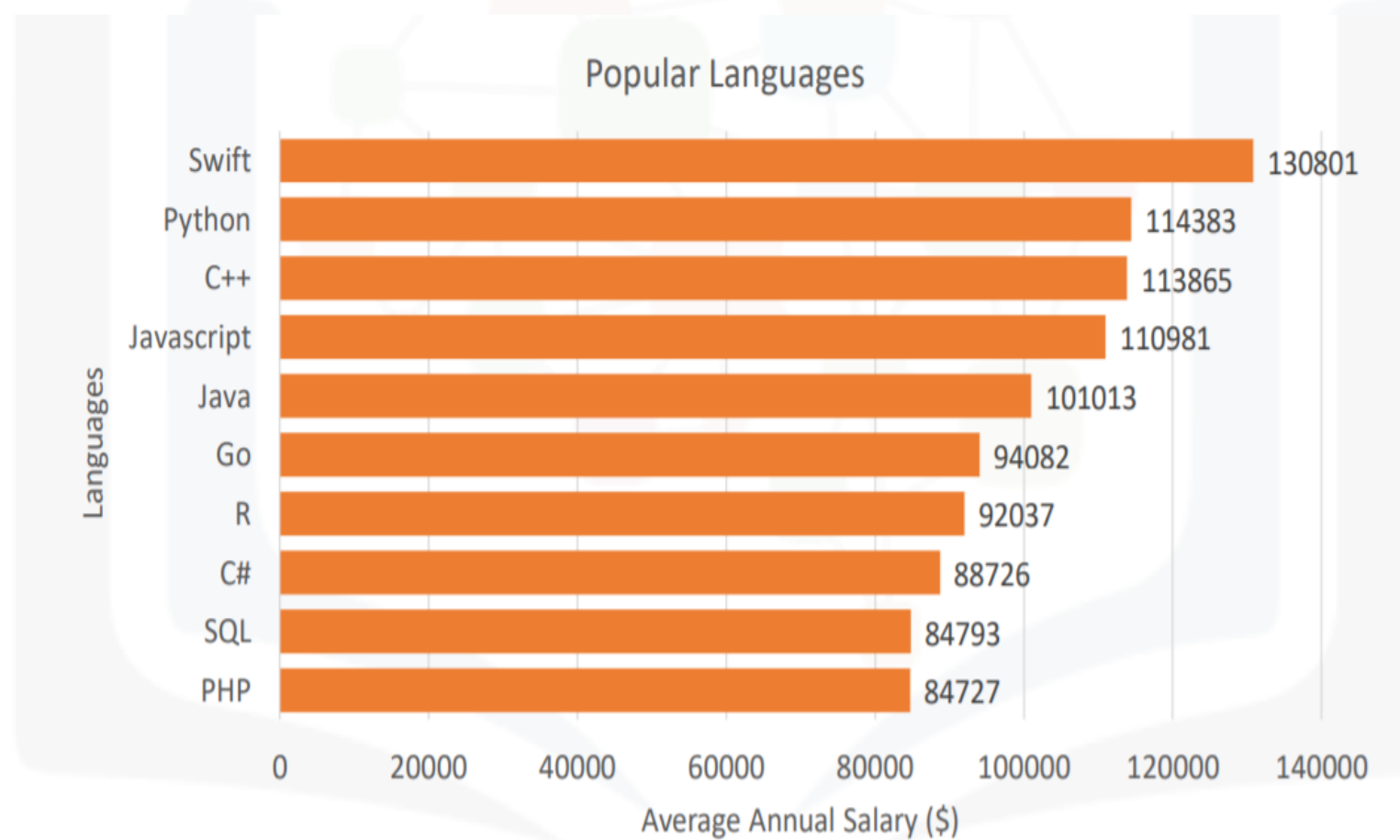
# APPENDIX



# GITHUB JOB POSTINGS



# POPULAR LANGUAGES



A network diagram with various colored nodes (pink, orange, green, blue) connected by lines, set against a light gray background with faint, large, stylized letters 'L' and 'U'.

# THANK YOU