



Emerging Technical Skills (2019)

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OUTLINE



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



- Data contextualization and Analysis goals
- Methodology
 - Data Sourcing
 - Analysis
 - Visualizations
- Results backed by graphs and trends
- Overall findings and research implications
- Conclusion

INTRODUCTION



About:

Analyzing the trends in software development and the possible direction of necessary technical skills in the job market

Purpose:

- Identify necessary technical skills in the current/future job market
- Examining necessary skills currently in demand and desired IDEs
- Inferring skill requirements for the future

Audience:

- Programmers, New Graduates, IT industry leaders

METHODOLOGY

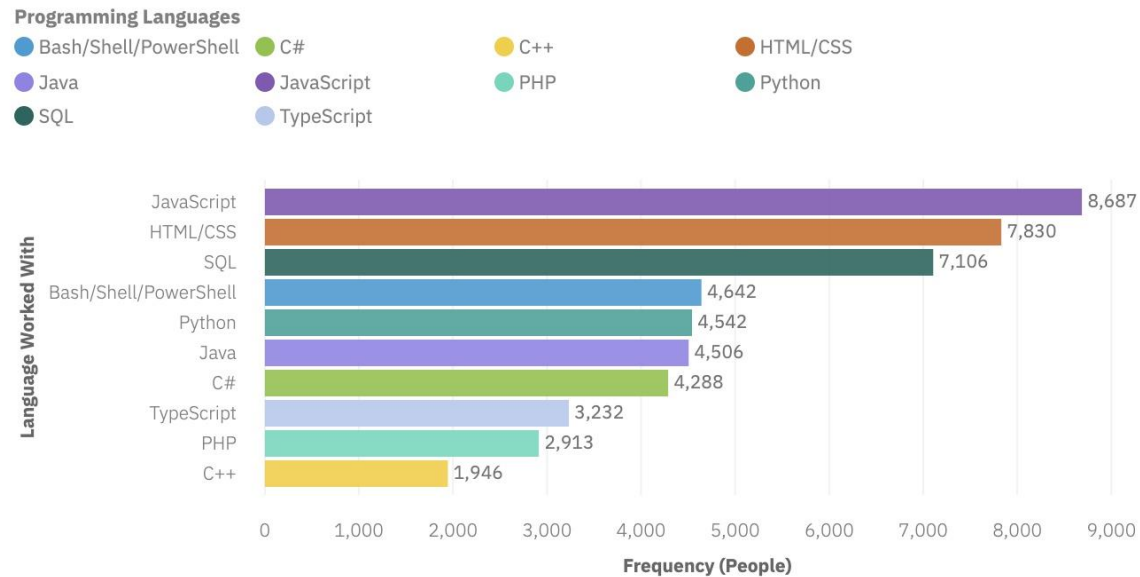


- Data Collection (Sources)
 - Stack Overflow Developer Survey (2019)
 - Github Job Posting
 - Annual Salary correlation with Programming Languages
- Data Wrangling
- Data Exploration
- Data Cleaning
- Data Visualization
 - Python: Matplotlib, Seaborn, Plotly Express
 - IBM Cognos
- Presentation

PROGRAMMING LANGUAGE TRENDS

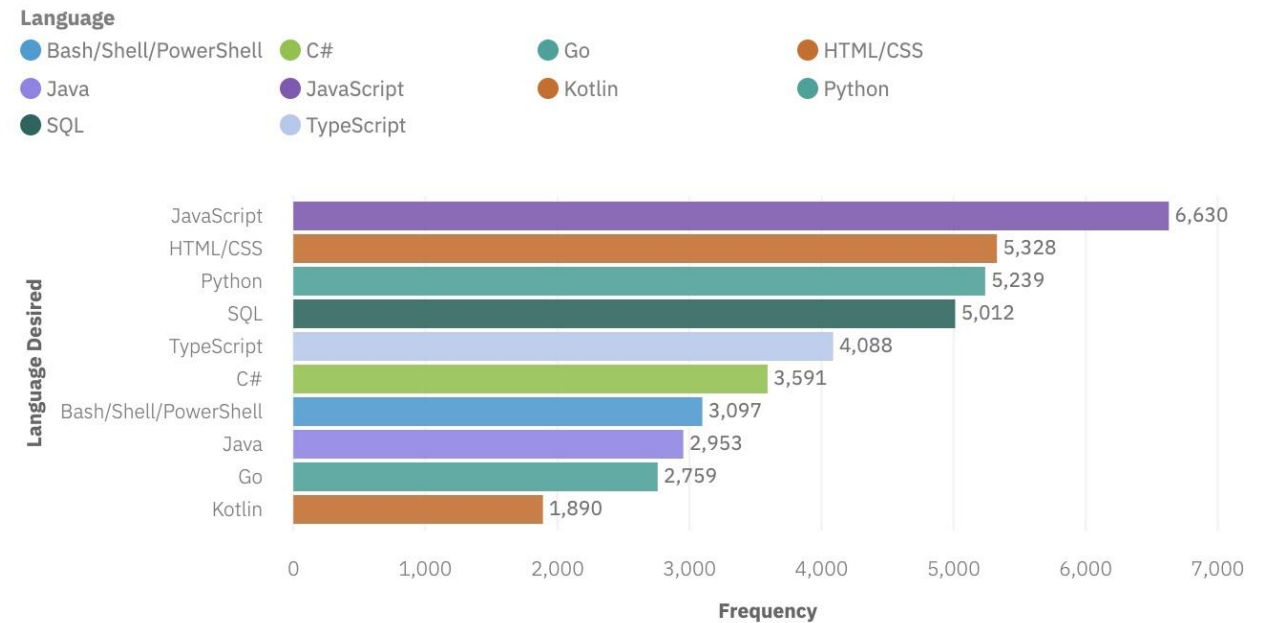
Current Year

Top 10 Languages Worked with



Next Year

Top 10 Languages Desired for Next Year



PROGRAMMING LANGUAGE TRENDS - FINDINGS & IMPLICATIONS

Findings

- JavaScript, HTML/CSS, SQL are top 3 languages used this year (2019)
- Python, Typescript, C# is becoming more relevant for developers in the upcoming year
- PowerShell is becoming less relevant

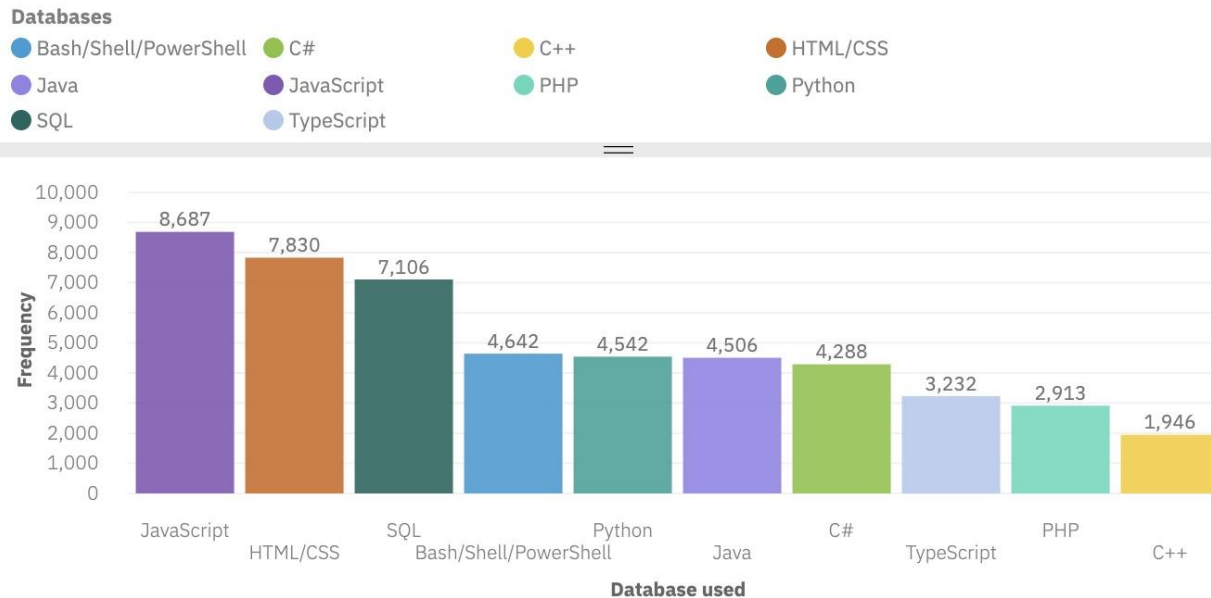
Implications

- Web Development is still high in demand
- Big Data in companies still require SQL as a necessary skill
- With emerging AI and ML technology, Python is becoming a necessary skill more than others

DATABASE TRENDS

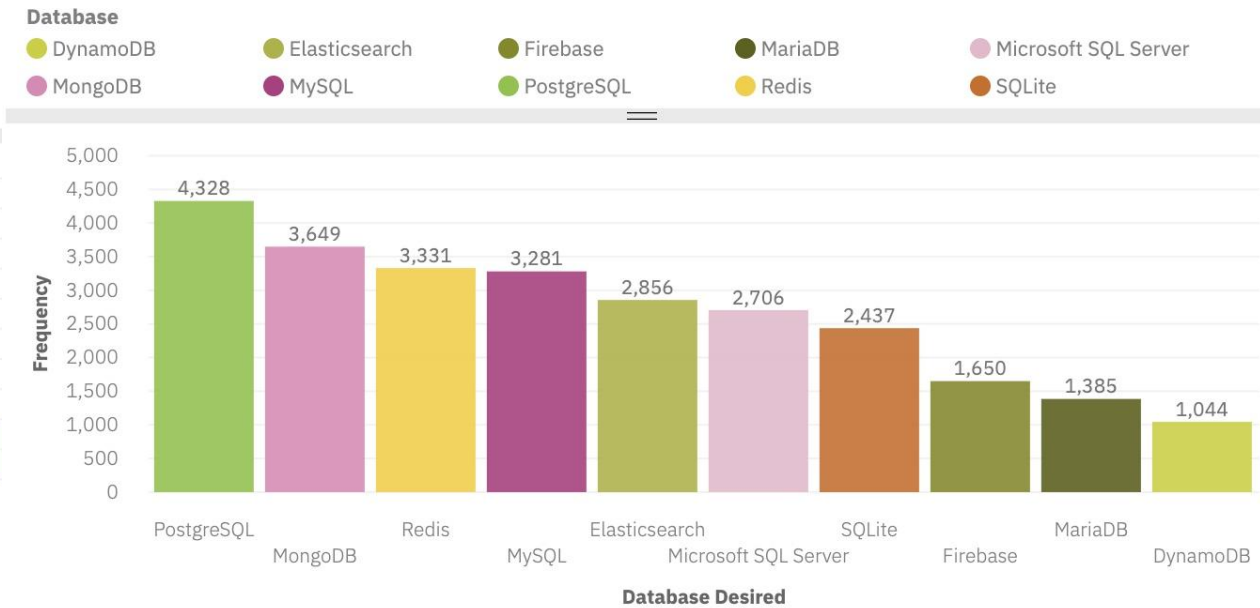
Current Year

Top 10 Databases Worked with



Next Year

Top 10 Databases Desired for Next Year



DATABASE TRENDS - FINDINGS & IMPLICATIONS

Findings

- PostgreSQL, MongoDB, and Redis is becoming more relevant in the upcoming year
- JavaScript, HTML, PowerShell are not favorable technical skills for majority of developers
- SQL variations are considered most desired in the next year

Implications

- Open source databases are still preferable in the majority of companies
- With the emergence of non-relational data, NoSQL will make a drastic impact on required technical skills
- Software development and Big Data technology still require SQL as a necessary skill

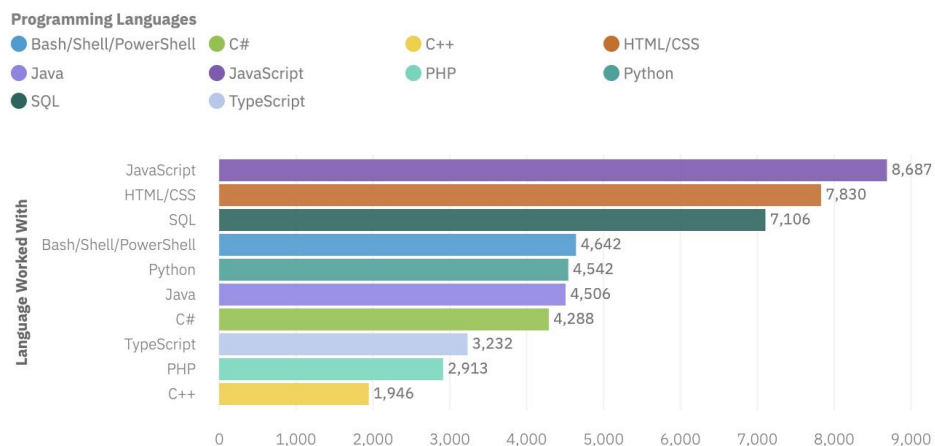
DASHBOARD



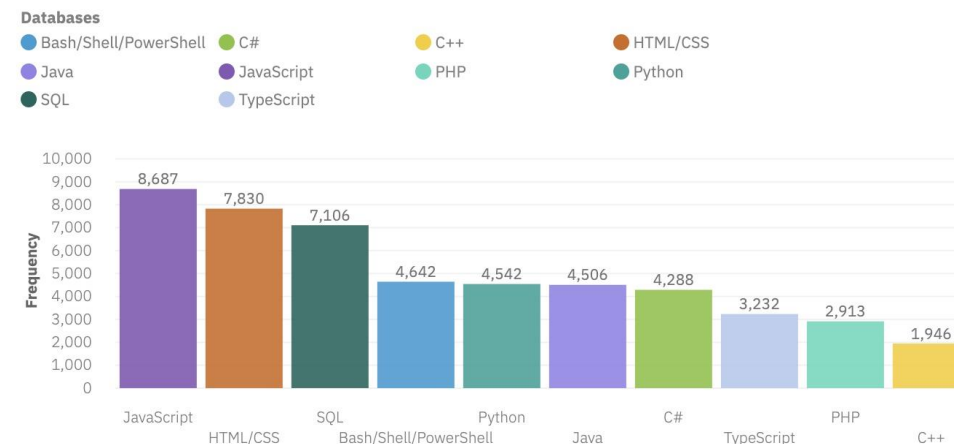
[IBM Cognos Permanent Link to Dashboard](#)

CURRENT TECHNOLOGY USAGE

Top 10 Languages Worked with



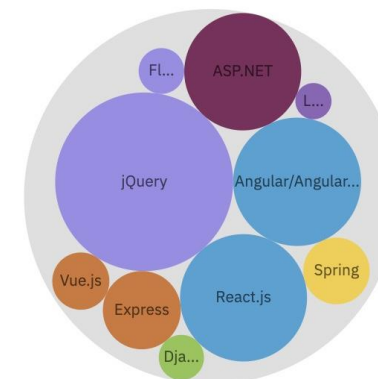
Top 10 Databases Worked with



Platforms Currently In Use

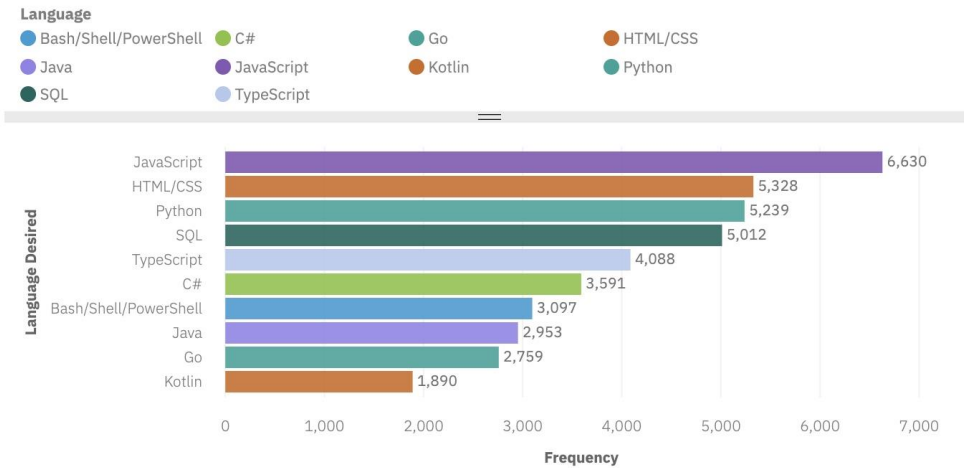


Top 10 Web Frames In Use

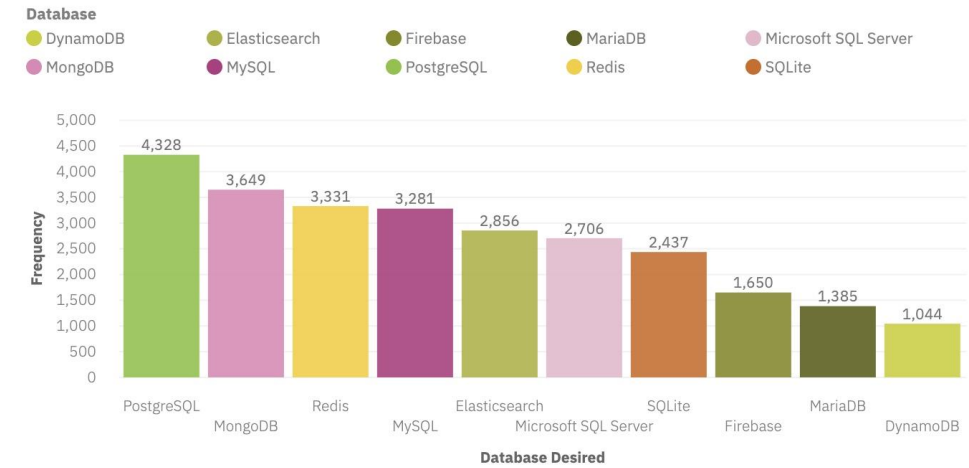


FUTURE TECHNOLOGY USAGE

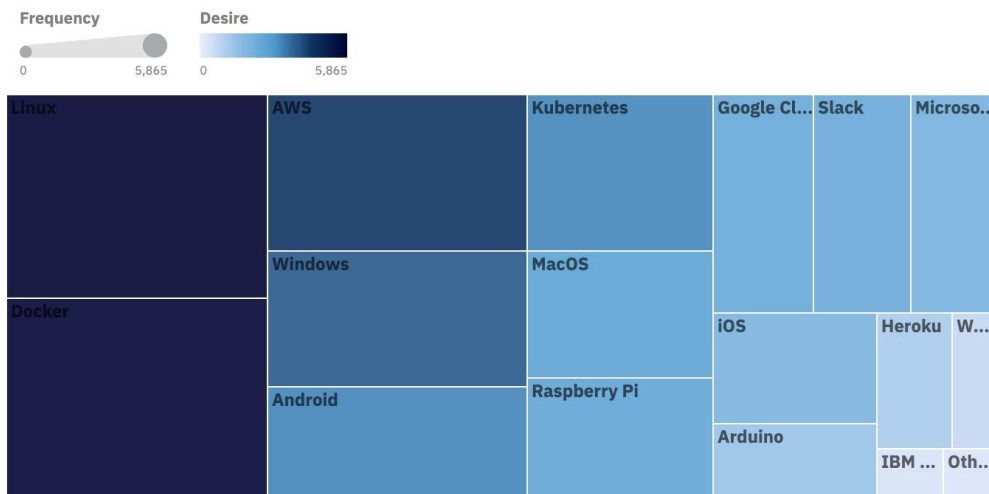
Top 10 Languages Desired for Next Year



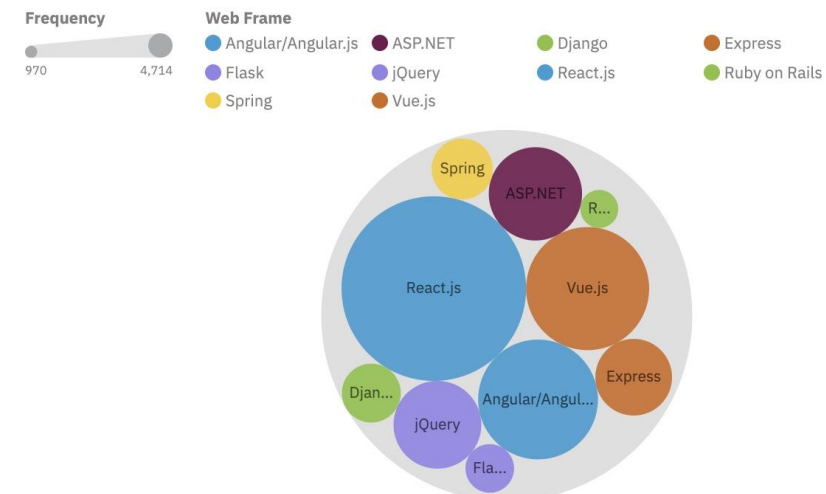
Top 10 Databases Desired for Next Year



Platform Desired for Next Year



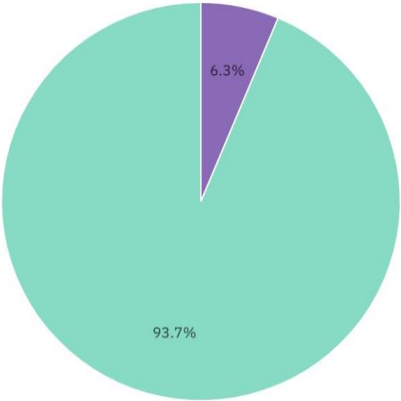
Top 10 Web Frame Desired for Next Year



DEMOGRAPHICS

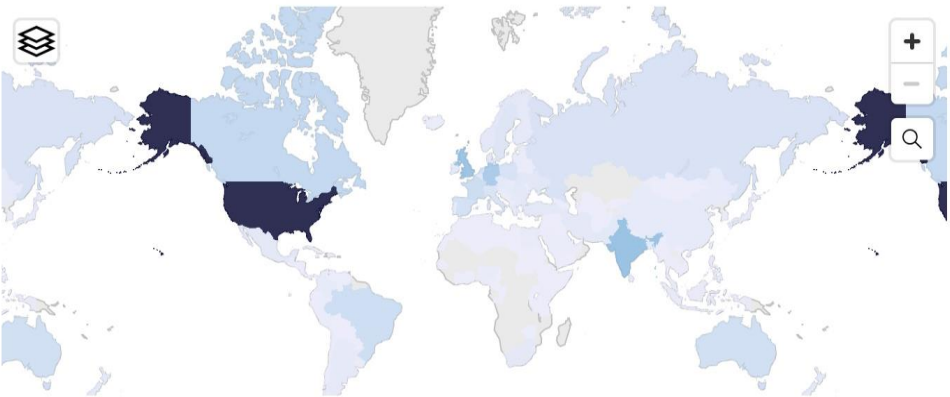
Respondent % By Gender

Gender
Woman Man

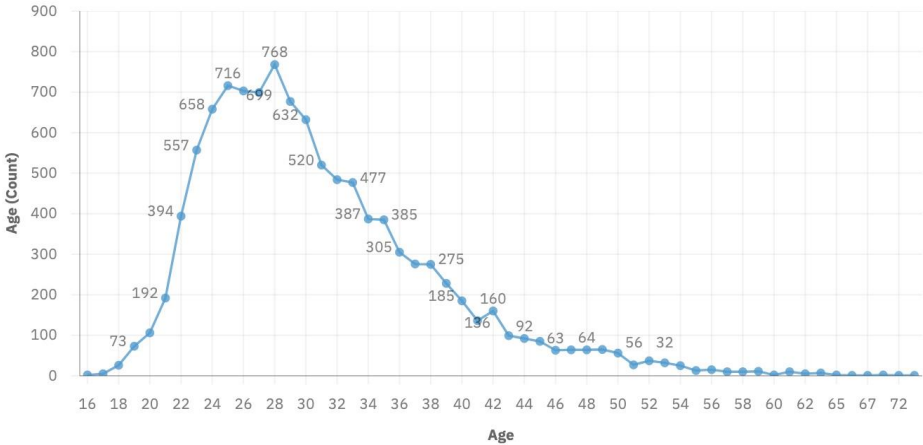


Respondent Count By Country

Country (Count)
1 2,975

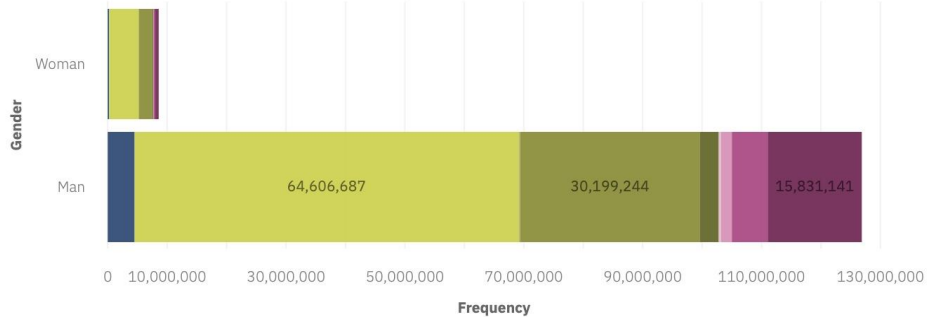


Respondent By Age

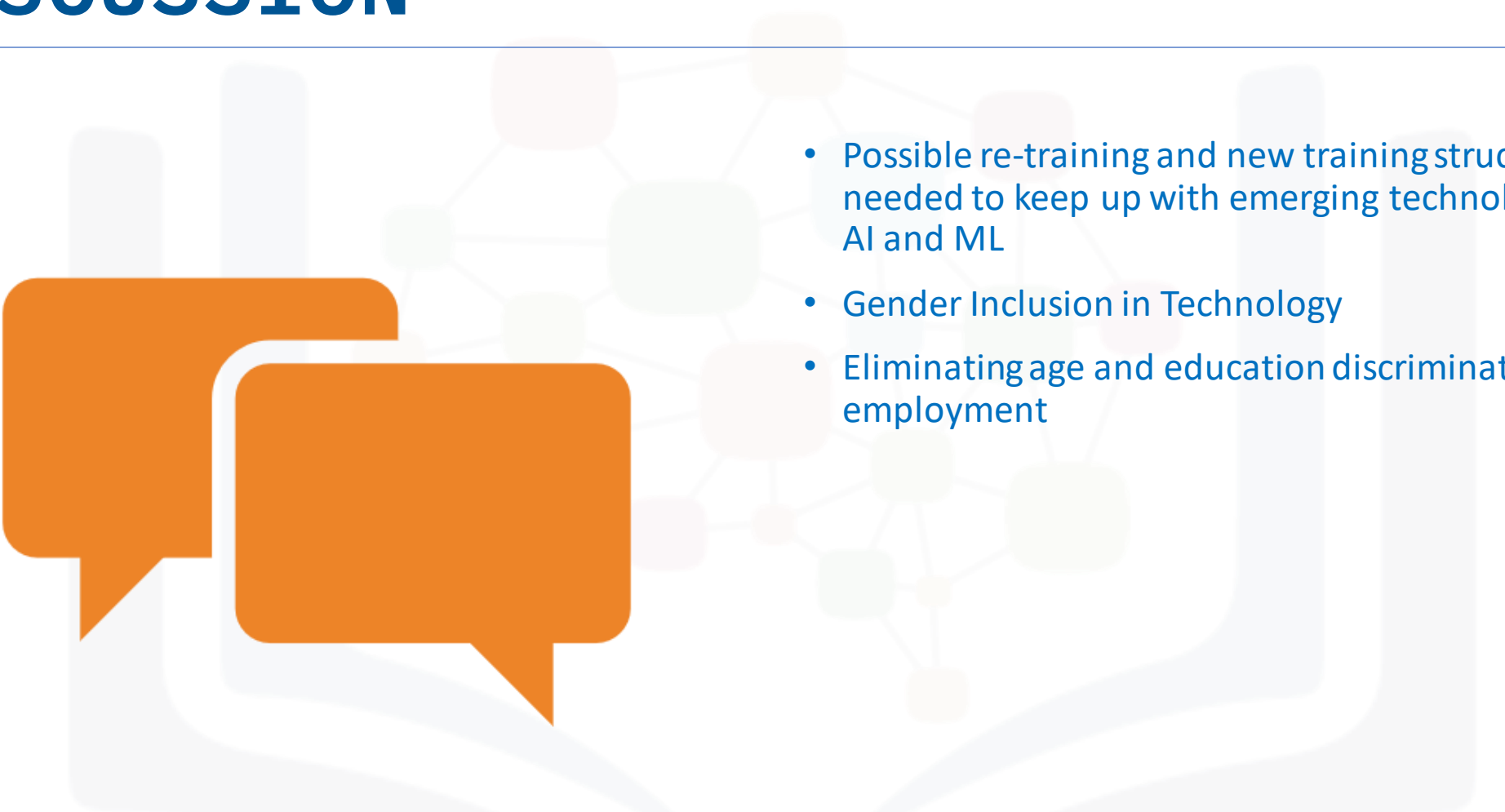


Respondents by Gender classified by Education Level

Education Level
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... Primary/elementary school
Professional degree (JD, MD, e... Secondary school (e.g. Americ... Some college/university study ...



DISCUSSION

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- Possible re-training and new training structures needed to keep up with emerging technology i.e. AI and ML
 - Gender Inclusion in Technology
 - Eliminating age and education discrimination in employment

OVERALL FINDINGS & IMPLICATIONS

Findings

- Constant evolution of Technology impacts necessary skills on an annual basis
- Work force mainly sources from U.S. and India
- Gender Gap in Technology Industry
- Cloud Environments and non-relational data becoming more relevant

Implications

- Change management is necessary in companies to keep up with emerging trends in technology
- Impacts job hiring as schools need to update course material in Technology-relevant roles to keep up with the industry
- Major shift to app deployments and cloud services

CONCLUSION

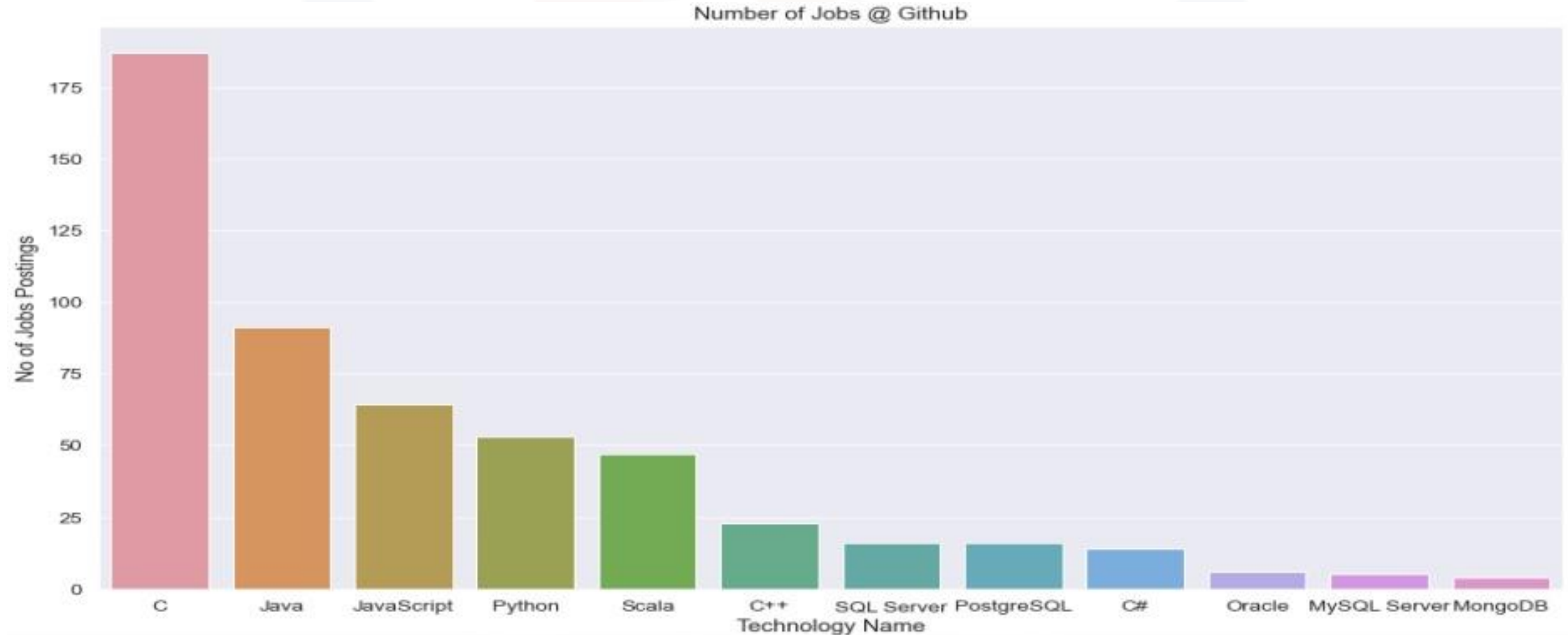


- Emergence of new technology developments leads to ever-changing skill-sets necessary for early professionals
- Education needs to keep up to date with new technical skills to make a college degree maintain its value in the technology industry
- Lots of potential in other countries to source for technology jobs
- Programming Language Trends and Salary Trends

Appendix

- GitHub Job Posting & Popular Languages
 - Displaying the emergence of technology jobs and the implications it has for job growth with technological advancements in the future
 - Annual Salaries reflect the asset value of the position and need for more experienced professionals in the industry

JOB POSTINGS



POPULAR LANGUAGES

