



An Analysis of Trends seen in the field of Computer Science

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OUTLINE



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EXECUTIVE SUMMARY



- The past and current trends in technology usage in the software field are analyzed.
- Popular languages and databases
 - Python, Kotlin, Go, Typescript became increasingly popular though JavaScript and HTML CSS remains at the top
 - Database trends are more impacted by the latest developments in the field of computer science(AI, Machine Learning, Cloud Era, Big Data Analytics)
 - Several professionals have moved on to PostgreSQL and other non-relational databases
- The job satisfaction responses are similar for men and women with higher percentage of responses for highly satisfied and slightly satisfied.
- The increased use of programming languages in other sectors like natural science, business and medical field have also resulted in developers with a non computer science background.

INTRODUCTION



Softwares are numerous and Software Professionals are always on demand.

Software Trends:

- Which software skills are on demand?
- What are the typical platforms software professionals use?
- How popular were the on-demand softwares in past and current year?

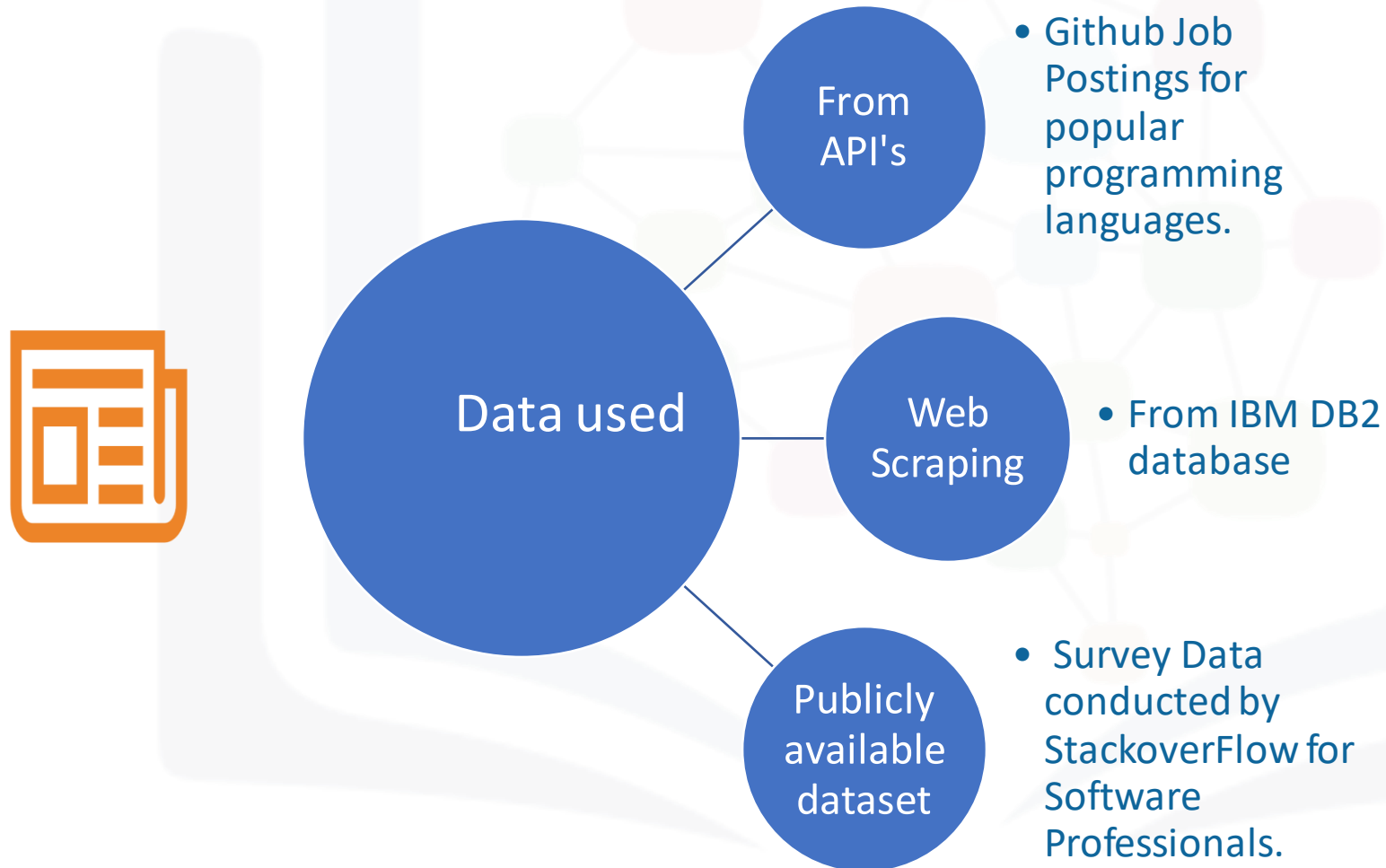
INTRODUCTION contd.



Aim:

- Analysis of the popularity of several technologies in the field of Computer Science.
- Mostly aimed for Software Professionals and for common people and students with some software knowledge.
- Enable aspirants to understand the current trends thereby providing a way to be up to date with the most sort after technologies.

METHODOLOGY

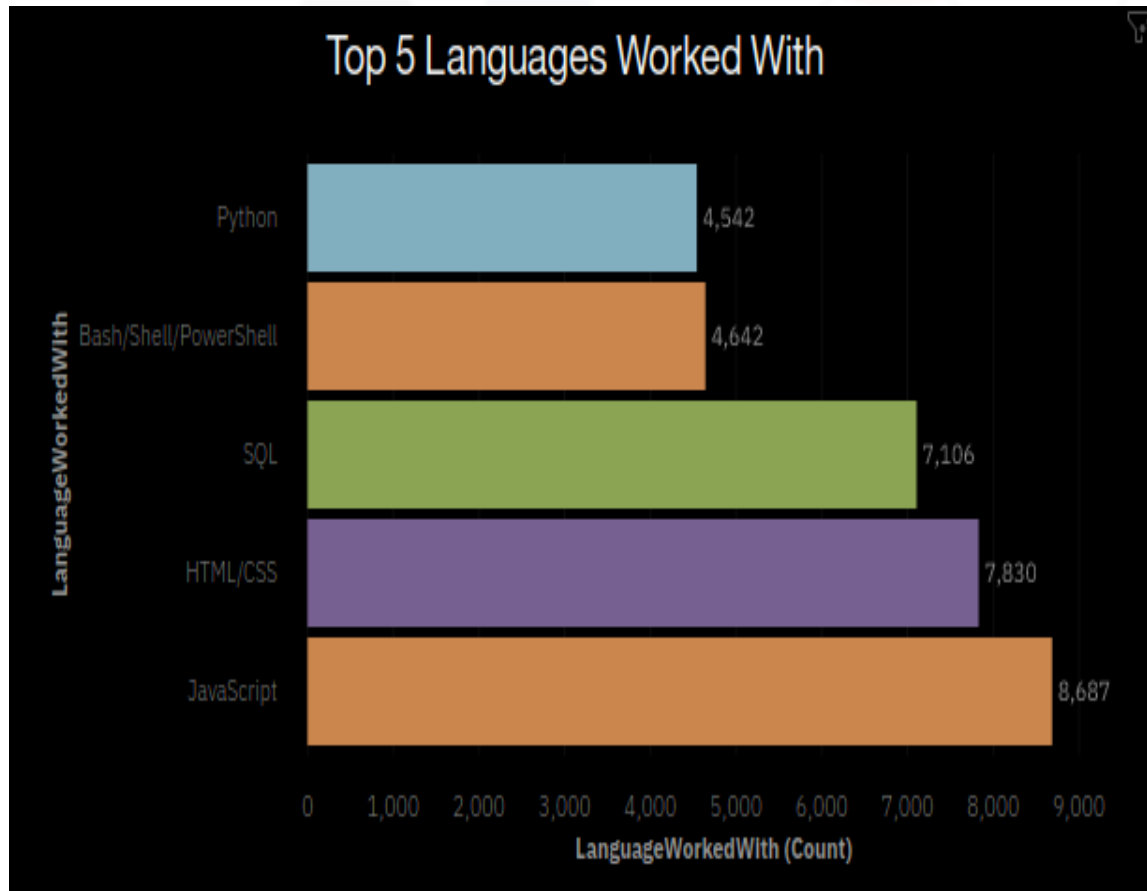


RESULTS-main focus points

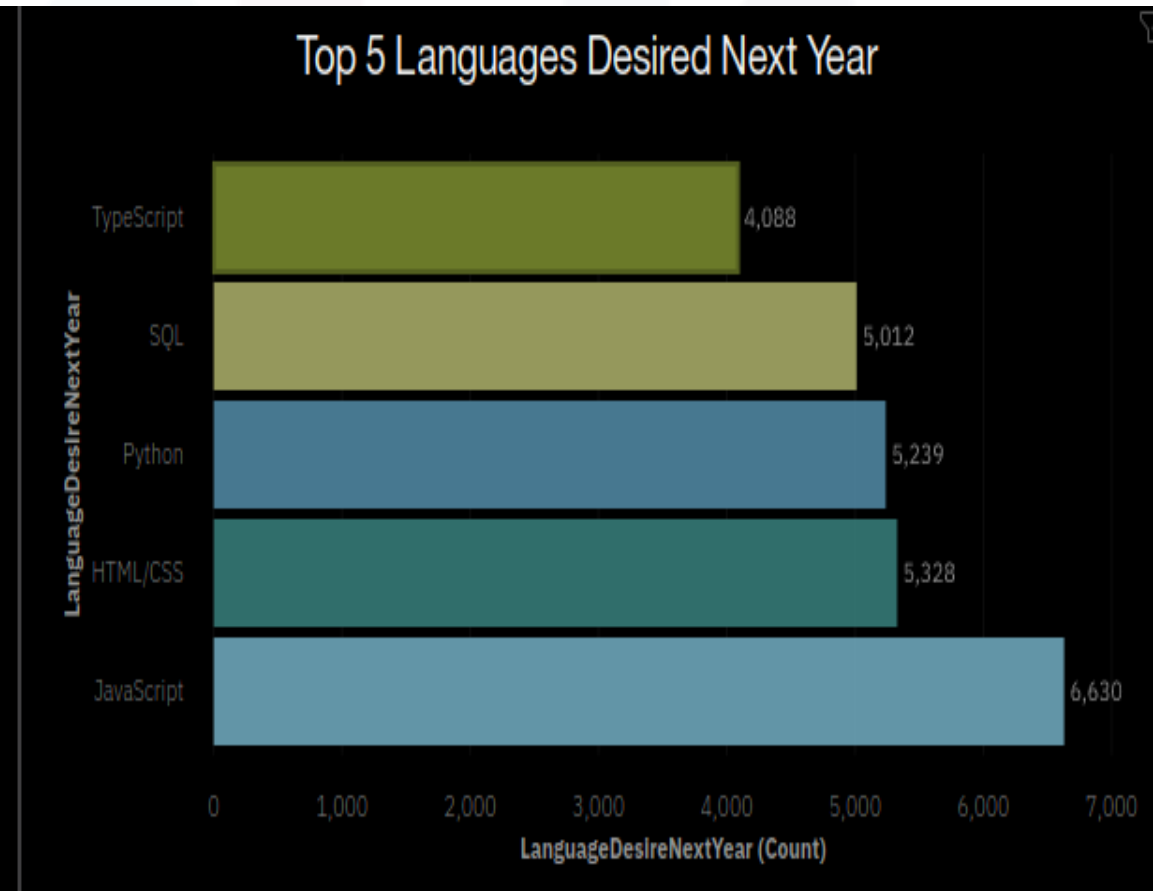
- Programming Language Trends
- Database trends
- How is the male to female ratio among the developer community?
- Are people with a different background interested in computer science related field?

PROGRAMMING LANGUAGE TRENDS

Year 2020



Year 2021



PROGRAMMING LANGUAGE TRENDS - FINDINGS & IMPLICATIONS

Findings

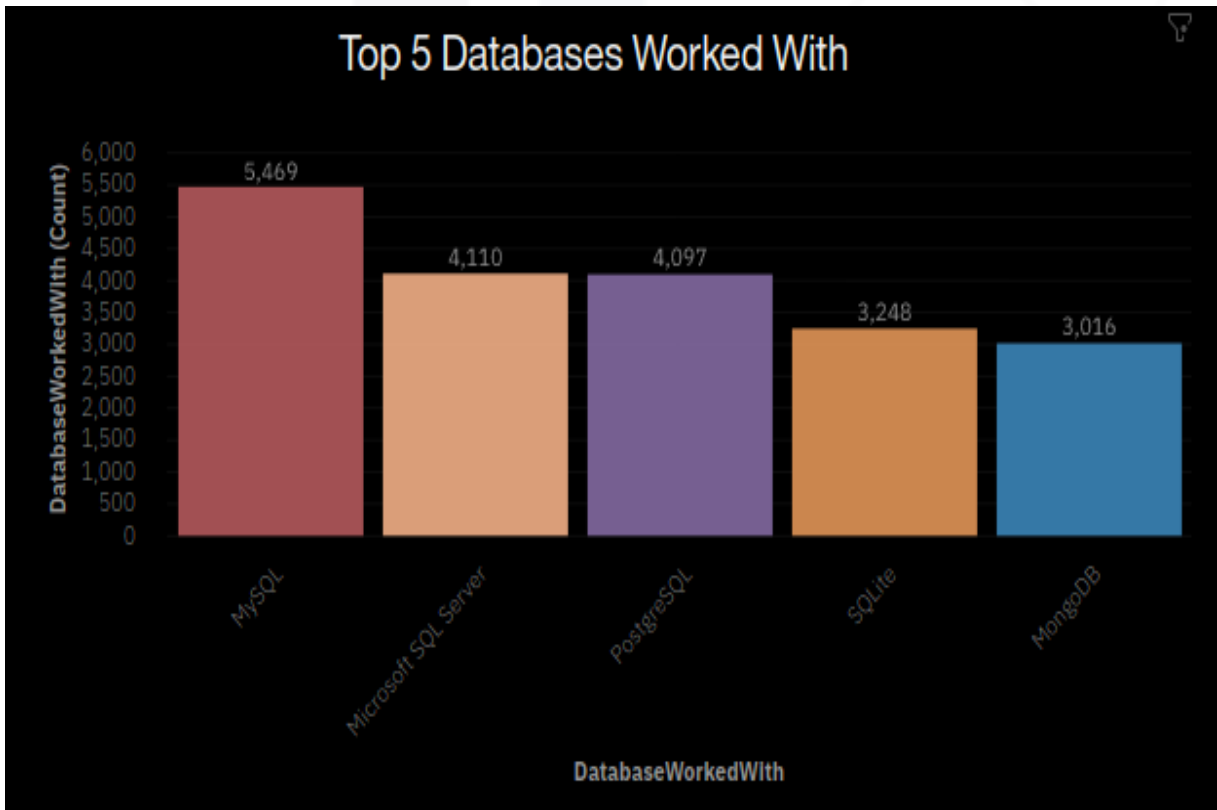
- Most Popular languages- JavaScript and HTML CSS for the current and future year
- Python will be more widely used
- Kotlin and Go among the top 10 desired languages next year with Typescript also gains popularity for next year.
- Popularity of several softwares are seen to be decreasing(Bash/PowerShell)

Implications

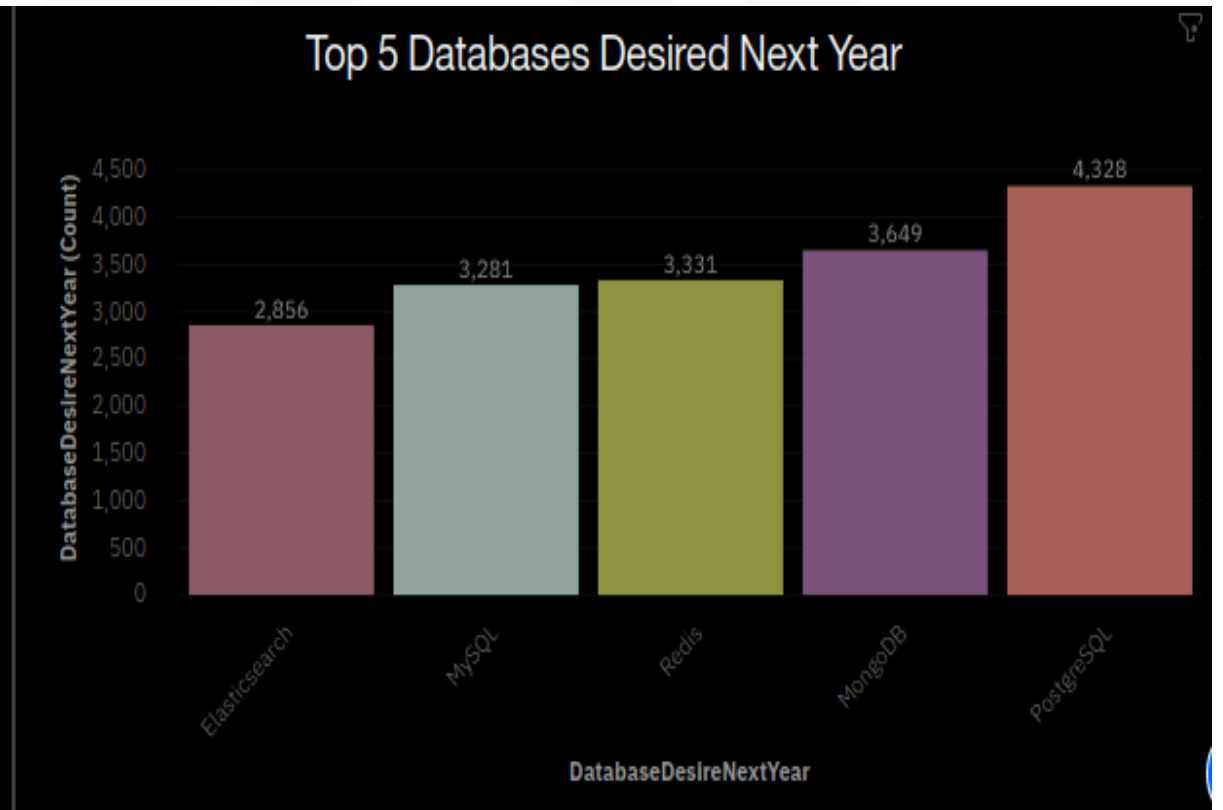
- JavaScript and HTML CSS still remains popular as they are used for web related services
- Ease and continuous support of the python community makes Python popular
- Decreasing popularity for several languages may be due to the shift in the job opportunities for software development platforms such as for mobile applications, web related services and system development.

DATABASE TRENDS

Year 2020



Year 2021



DATABASE TRENDS - FINDINGS & IMPLICATIONS

Findings

- MySQL, the current popular Database will be replaced by PostgreSQL
- MongoDB and Redis attains the second and third position in the most popular databases for next year
- Microsoft SQL Server will no longer be among top 5 preferred databases next year

Implications

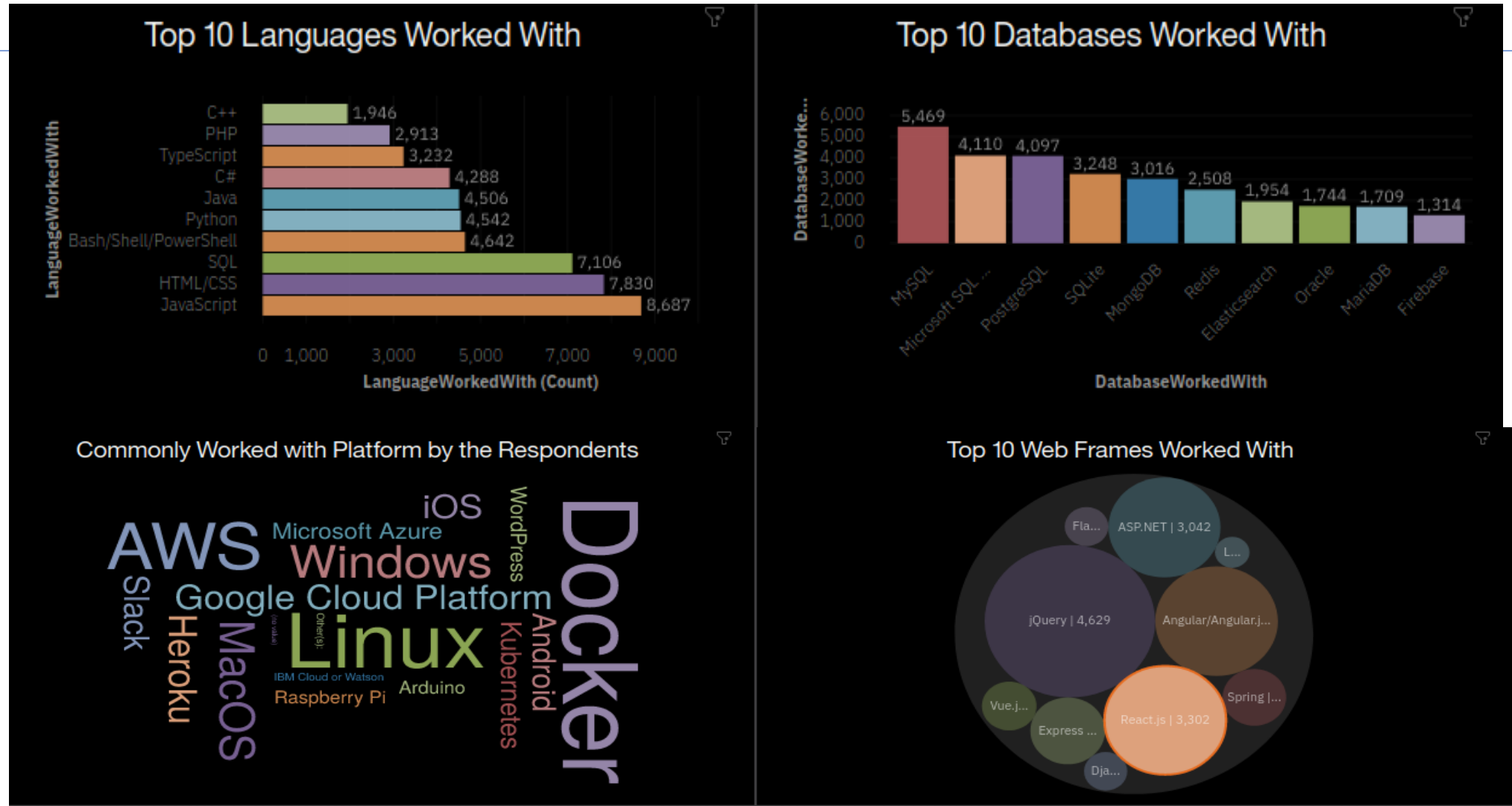
- The database trends shows a reflection of the type of databases in use for the current and upcoming year
- There is a shift in using relational database(MySQL) to non relational database(redis, mongoDB)
- Superior features and modern developments in the computer fields has had an impact in the popularity of PostgreSQL.

DASHBOARD



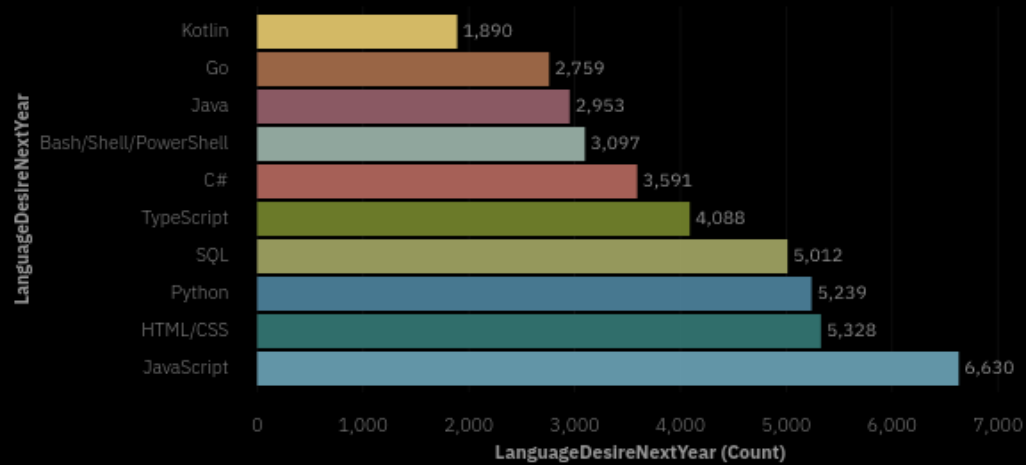
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DASHBOARD TAB 1

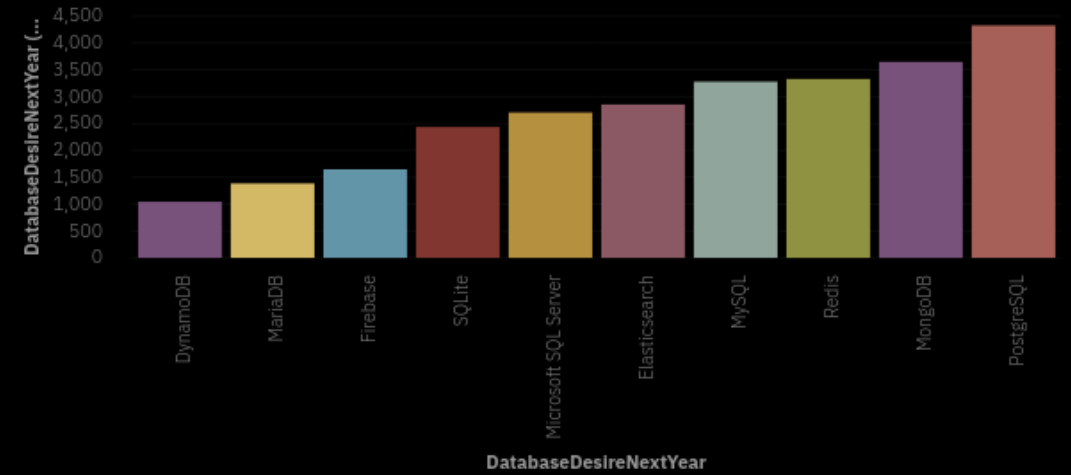


Technology Desired for Next Year

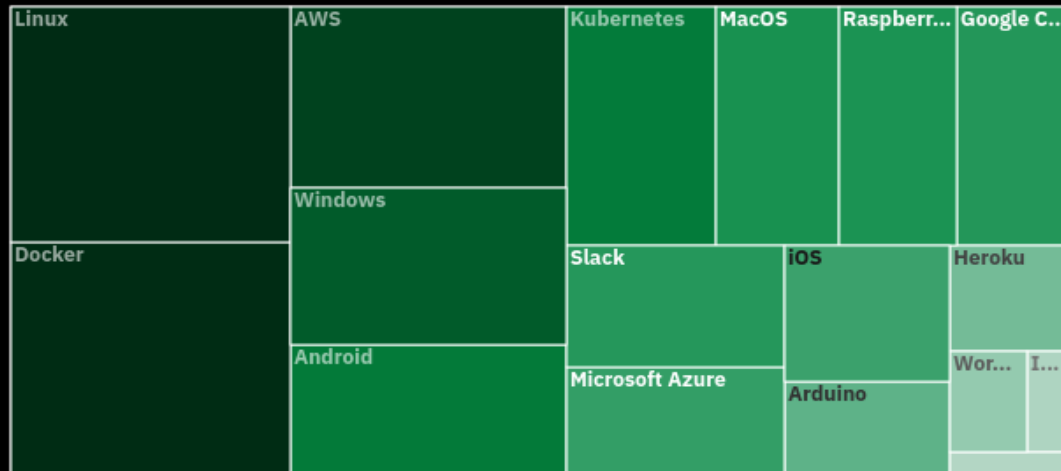
Top 10 Languages Desired Next Year



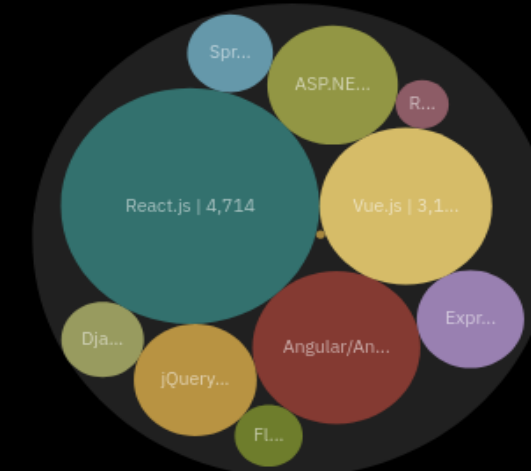
Top 10 Databases Desired Next Year



Top 10 Platforms Desired Next Year



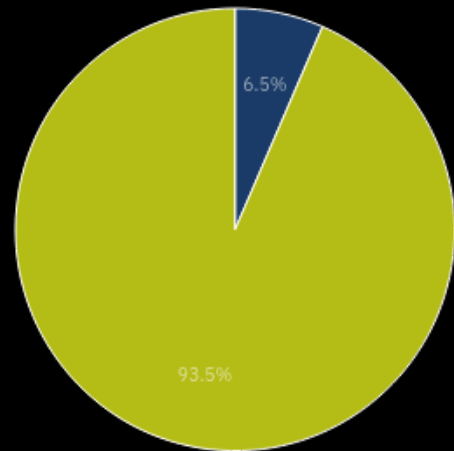
Top 10 Webframe Desired Next Year



Demographics

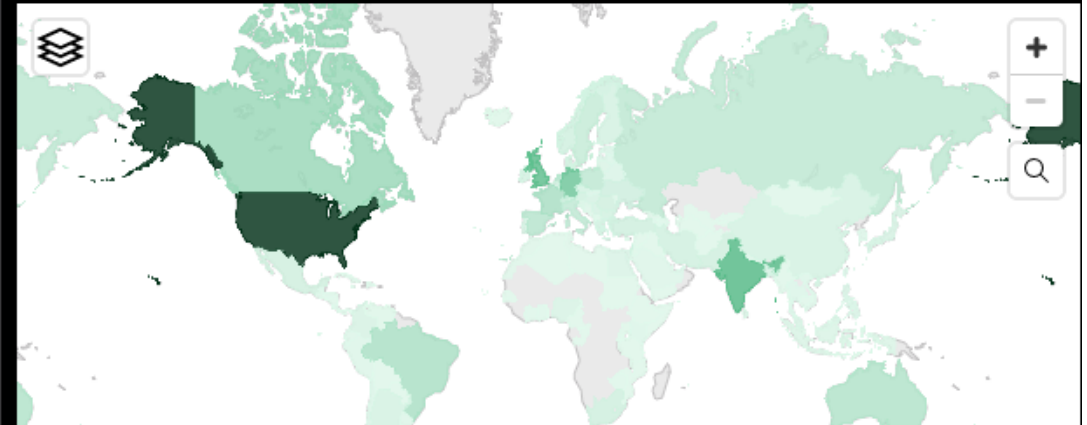
Number of Respondents Classified by Gender

Gender
● Woman ● Man

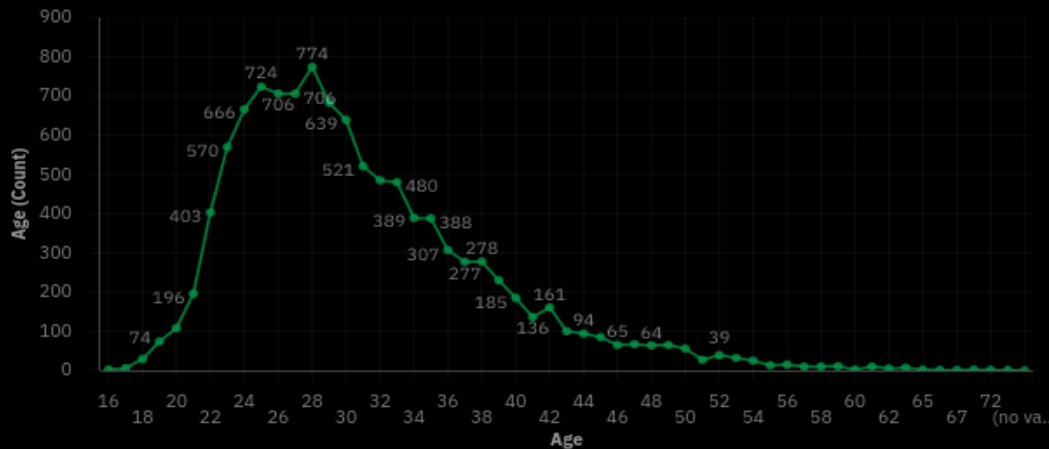


Number of Respondents Country Wise

Country (Count)
1 3,038

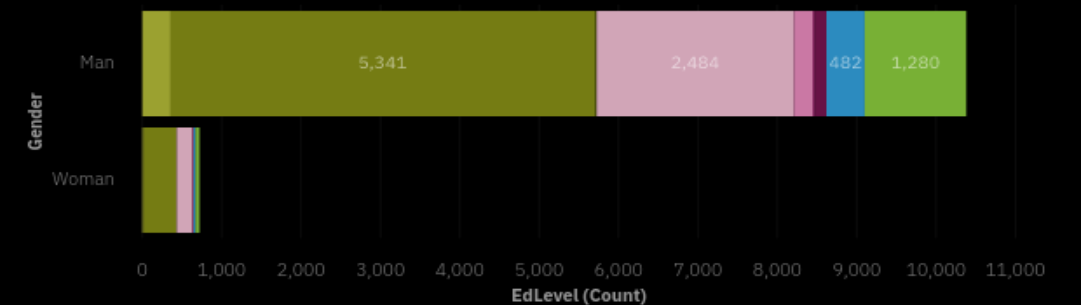


Respondent Count by Age



Formal Education Received by Respondents

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



DISCUSSION



Key Points

- Programming Languages popularity- application and ease of use based
- Databases- non relational and relational
- Gender of the participants and their educational background

OVERALL FINDINGS & IMPLICATIONS

Findings

- Python is increasingly becoming popular with recently developed languages such as Kotlin and Go gaining popularity
- Similar trends in database popularity cannot be seen for several databases in the upcoming year.
- Though a good number of people have a master's degree a large group of people have bachelors degree alone with a small but noteworthy number of people with no computer science backgrounds.
- Though software Professionals are mostly men job satisfaction responses are similar.

Implications

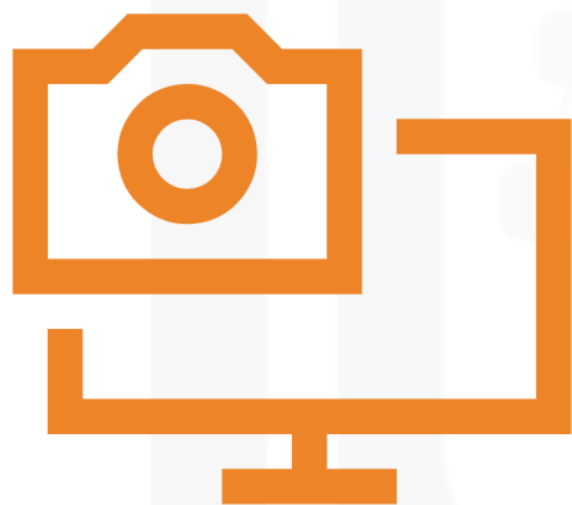
- Though most of the languages are based on Java or C/C++, the ease of use, community support and application to several areas such as web development or mobile application influences the popularity of the languages.
- Database trends can be explained on the basis of the preference of non-relational or object-relational databases from relational database. Cloud era, AI and Big Data analytics have also influenced database trends.
- The impact of computer science in several fields such as health sector or natural sciences have attracted people with no computer science background to become a software professional.

CONCLUSION



- Programming Language trends are similar with some increased popularity for languages such as Python, Kotlin, Go and Typescript.
- Databases for current year shows the ever popular relational database MySQL being replaced by object-relational database PostgreSQL. Several developers will also be shifting to non-relational databases.
- Most of the developers are male though job satisfaction among both the genders are similar.
- Several developers have a non computer science background.

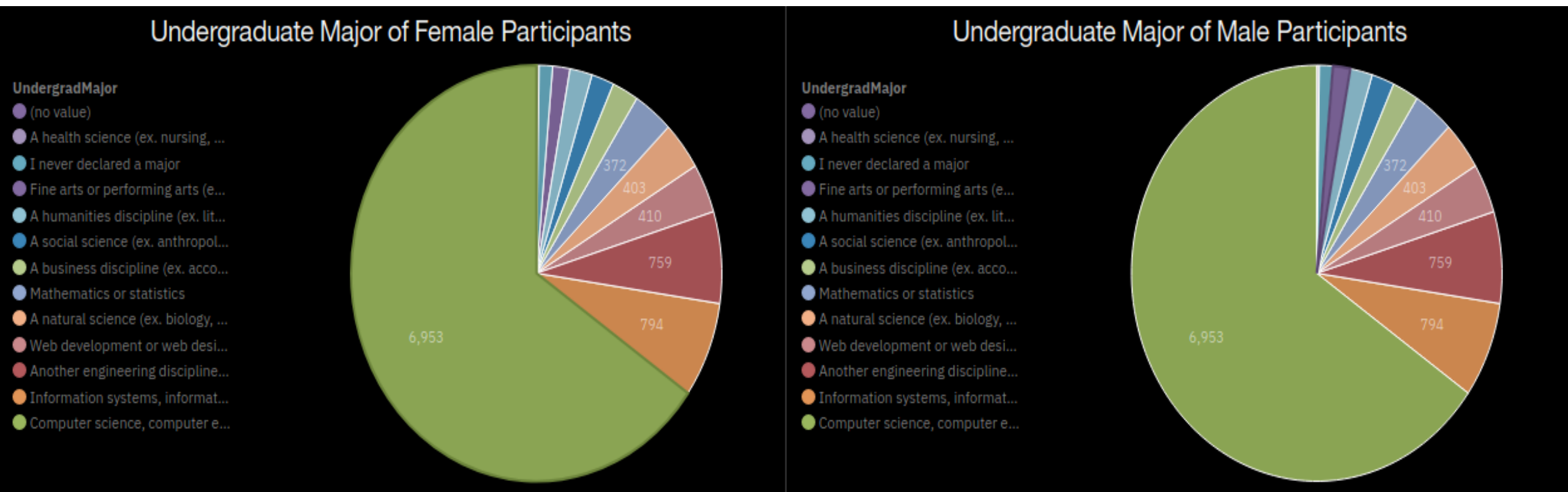
APPENDIX



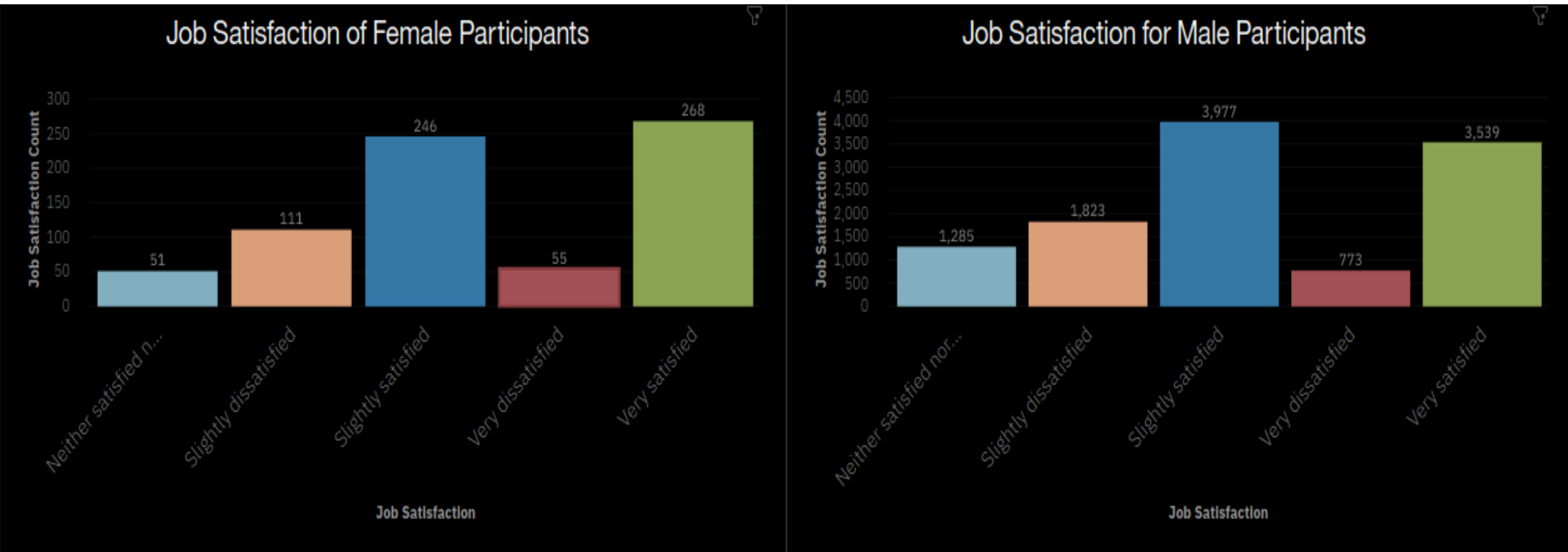
Undergraduate Major Subjects of Software Professionals

The highest educational qualification -----> Bachelor's degree (Dashboard 3)

What is the number of software professionals from other field?



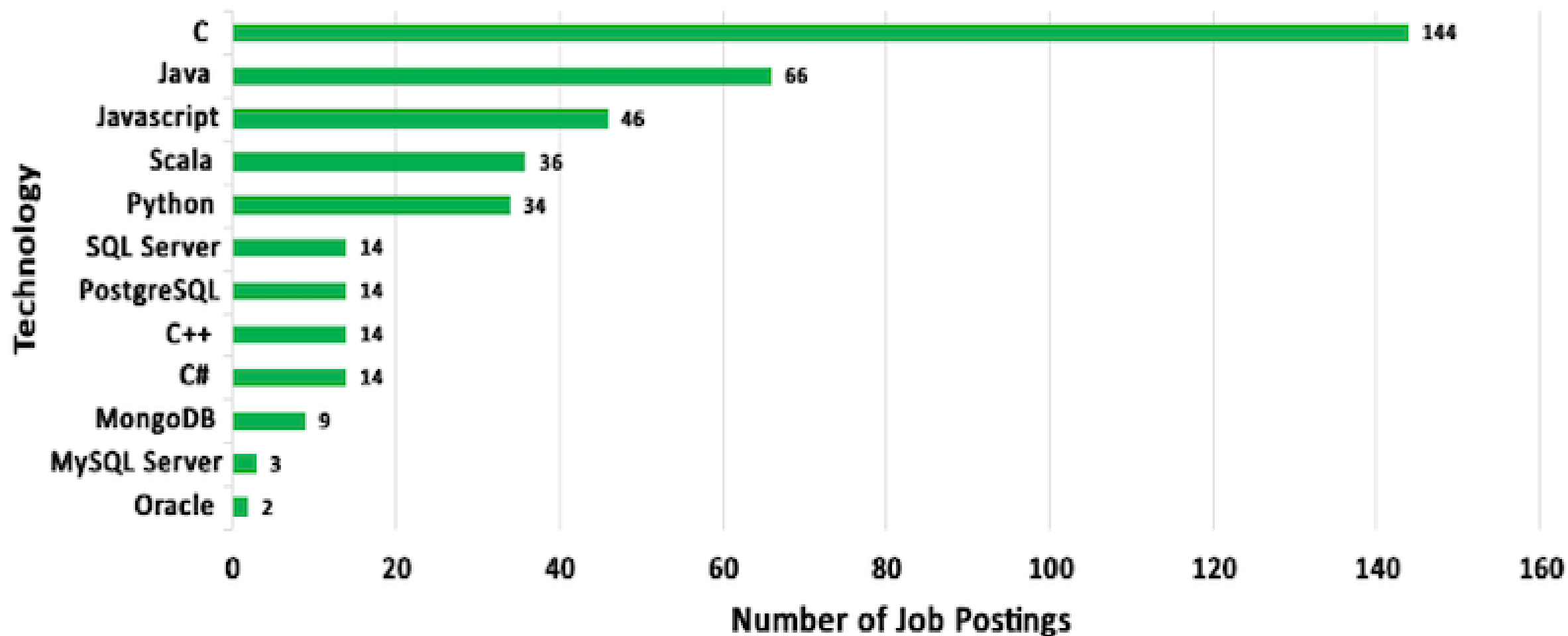
Job Satisfaction of the Software Professionals Based on Gender



Similar Job Satisfaction trend among Women and Men

GITHUB JOB POSTINGS

Job Postings from Github APIs



POPULAR LANGUAGES

