



# TECHNOLOGY TREND

## ANALYSIS PRESENTATION

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October 12, 2022

# OUTLINE

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

# EXECUTIVE SUMMARY

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The aim in identifying future skill requirements and trends is to help the firm make more informed data driven hiring and budgetary decisions.

Analyzing data about IT industry:

- Languages:
  - JavaScript and HTML/CSS: the most used now and desired for the next year
  - Python and SQL: more desired for next year than they are used now.
- Databases:
  - PostgreSQL, MySQL: the most used now and desired for the next year
  - Mongo DB and Redis: more desired for next year than they are used now.
- Windows and Linux still dominate all developing platform
- Gender Gap in IT industry:
  - Men: 93.5%
  - Women: 6.5%

# INTRODUCTION

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- Relevant skills required in the field of IT and business consulting are ever-changing and evolving.
- Identifying future skill requirements and trends is important to keep pace with changing technologies and remain competitive.
- This presentation will show current and future trends in Programming Languages, Databases, Platforms and WebFrames.
- This presentation has been created for Human Resources, IT Head, and business decision makers.

# METHODOLOGY

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- Used an initial Stack Overflow dataset; the data was wrangled in order to remove duplicates, impute missing values and normalize data.
- Next, the data underwent exploratory analysis in order to find the distribution of data, presence of outliers and determine the correlation between different columns in the dataset.
- The data was then used to visualize the distribution, the relationship between two features and the composition and comparison of data.
- Finally, after downloading two files, which are also a modified subset of the StackOverflow dataset, Cognos Dashboard Embedded (CDE) was used to create the “Current Technology Usage”, “Future Technology Trends” and “Demographics” slides.

# RESULTS

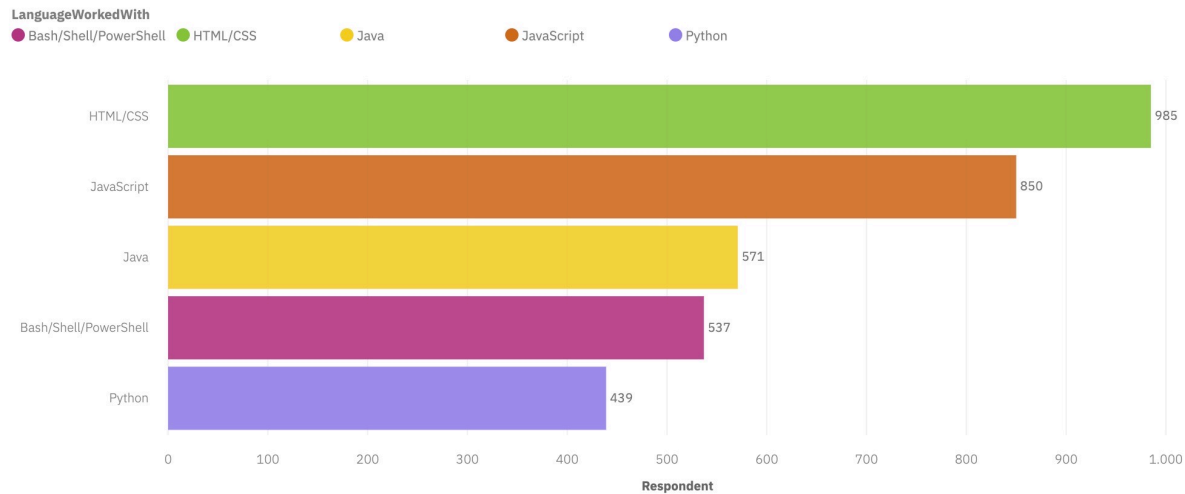
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# PROGRAMMING LANGUAGE TRENDS

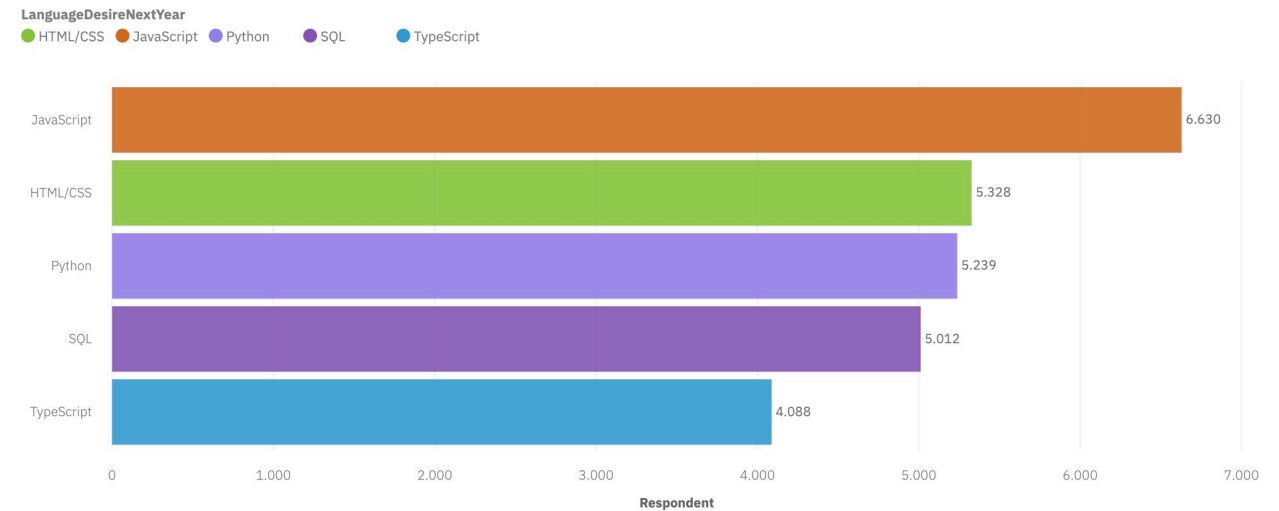
## Current Year

Top 5 Language Worked With



## Next Year

Top 5 Language Desire Next Year



# PROGRAMMING LANGUAGE TRENDS - FINDINGS & IMPLICATIONS

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## Findings

- JavaScript and HTML/CSS remain in the top 2 most popular programming language.
- Python has gained more interest for next year than this year
- SQL and TypeScript are not in the top 5 this year but they are in the top 5 of the desired languages
- Bash/ Shell/PowerShell has decreased: are used but no longer desired in the top 5 for next year

## Implications

- JavaScript and HTML/CS have a solid position and are considered important skills
- Expected growth for Python
- SQL and TypeScript: skills more required
- An expected decrease in interest for Bash/Shell /PowerShell

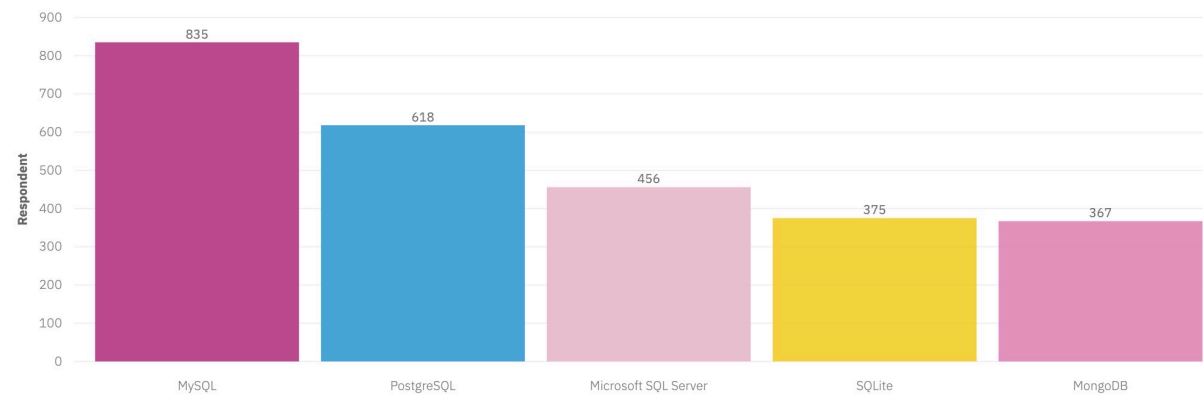


# DATABASE TRENDS

## Current Year

Top 5 Database Worked With

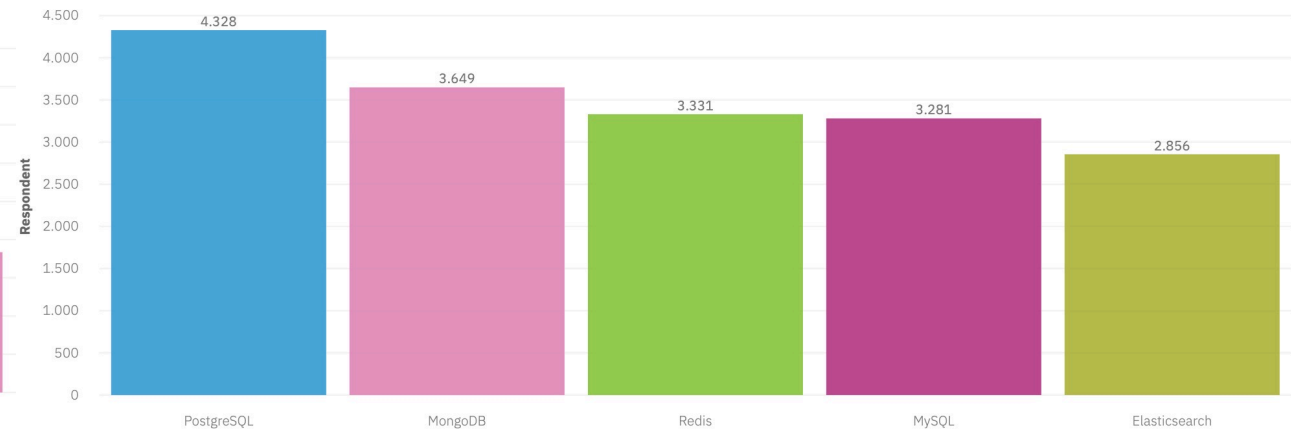
DatabaseWorkedWith  
SQLite PostgreSQL MySQL MongoDB Microsoft SQL Server



## Next Year

Top 5 Database Desire Next Year

DatabaseDesireNextYear  
Elasticsearch MongoDB MySQL PostgreSQL Redis



# DATABASE TRENDS - FINDINGS & IMPLICATIONS

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## Findings

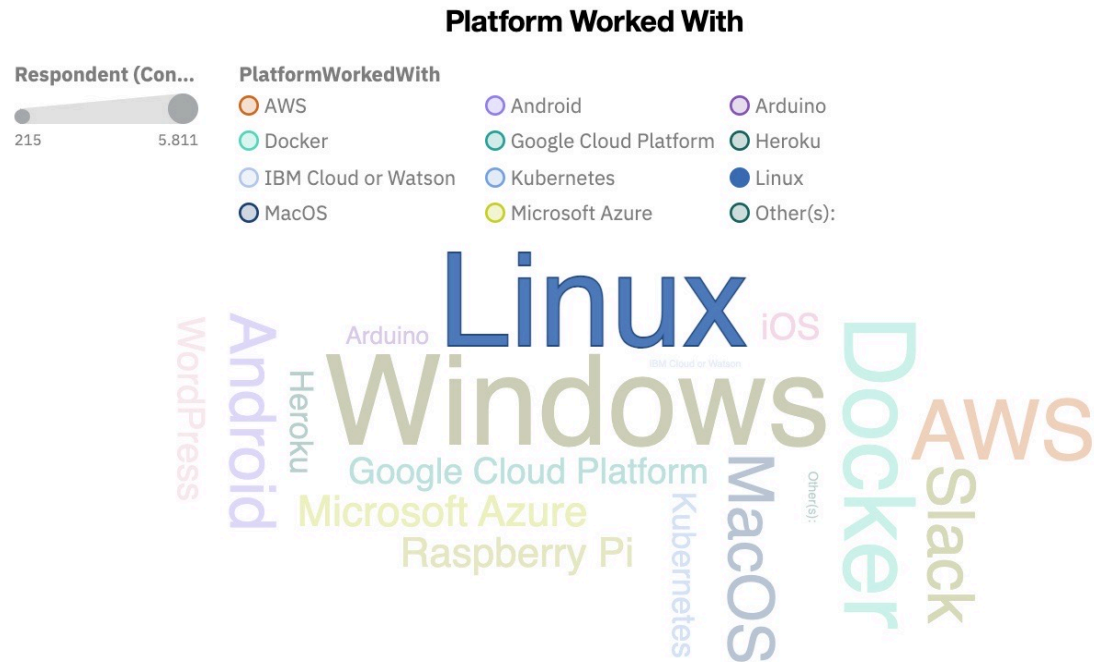
- PostgreSQL is strong in top 2 for this year and next year
- MySQL: remain in the top 5 of used and desired
- Mongo DB and Redis: more desired for next year than they are used now.
- Microsoft SQL Server and SQL Lite are used but no longer desired in the top 5 for next year

## Implications

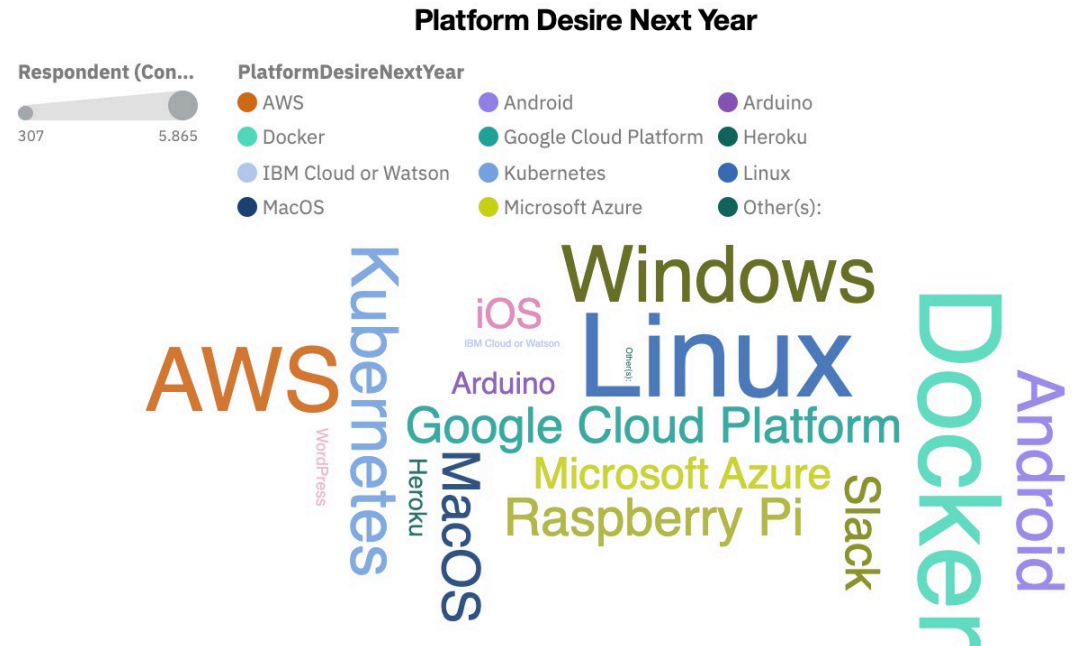
- PostgreSQL and MySQL have a solid position: strong skills
- Expected growth for Mongo DB and Redis: those skills will be more required
- Expected decrease in interest for Microsoft SQL Server and SQL Lite skills.
- Growth of Non-relational DB.

# PLATFORM TRENDS

Current Year



Next Year



# PLATFORM TRENDS - FINDINGS & IMPLICATIONS

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## 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 interest.

## Implications

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

# DASHBOARD

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Click here to see the complete Dashboard:

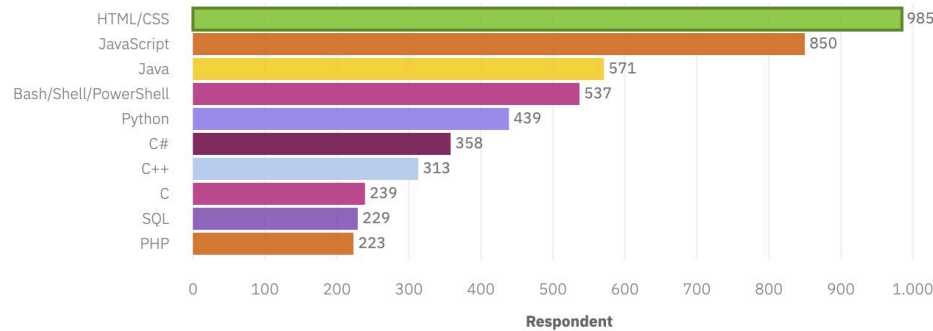
[Dashboard](#)

# DASHBOARD TAB 1

Filtri

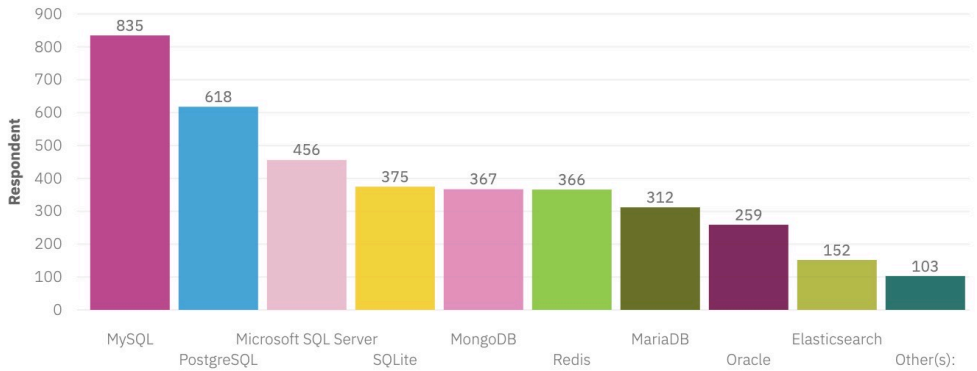
## Current Technology Usage

Python SQL



## Future Technology Trend

## Demographics



## Platform Worked With

Respondent (Con...)

215 5.811

PlatformWorkedWith

AWS Docker Android Arduino Google Cloud Platform Heroku IBM Cloud or Watson Kubernetes Linux MacOS Microsoft Azure Other(s):



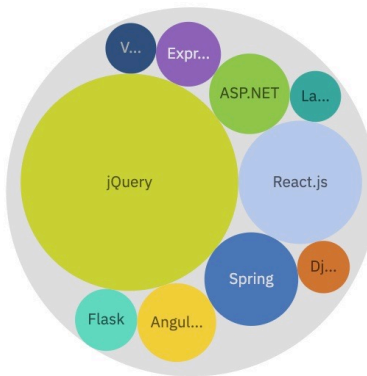
## Top 10 WebFrame Worked With

Respondent (Con...)

148 634

WebFrameWorkedWith

ASP.NET Angular/Angular.js Django Express Flask Laravel React.js Spring Vue.js jQuery



# DASHBOARD TAB 2

## Current Technology Usage

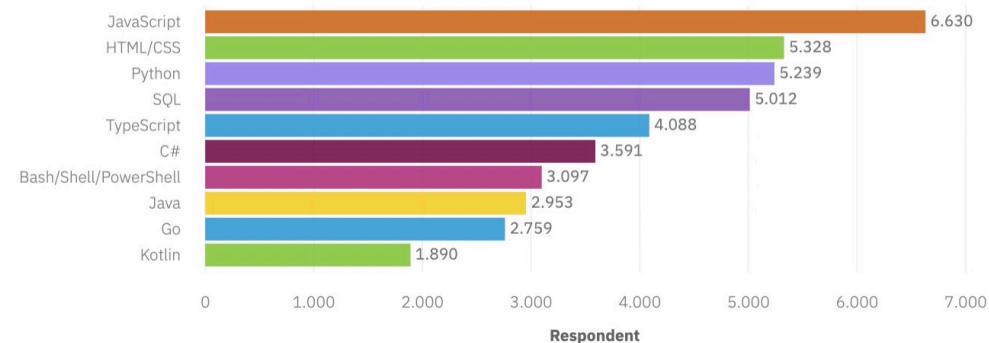
Java  
SQL

JavaScript  
TypeScript

Kotlin

## Future Technology Trend

Python



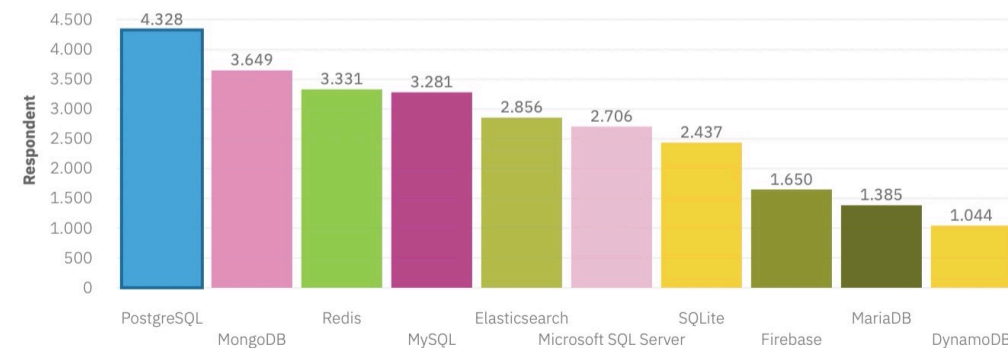
MongoDB

MySQL

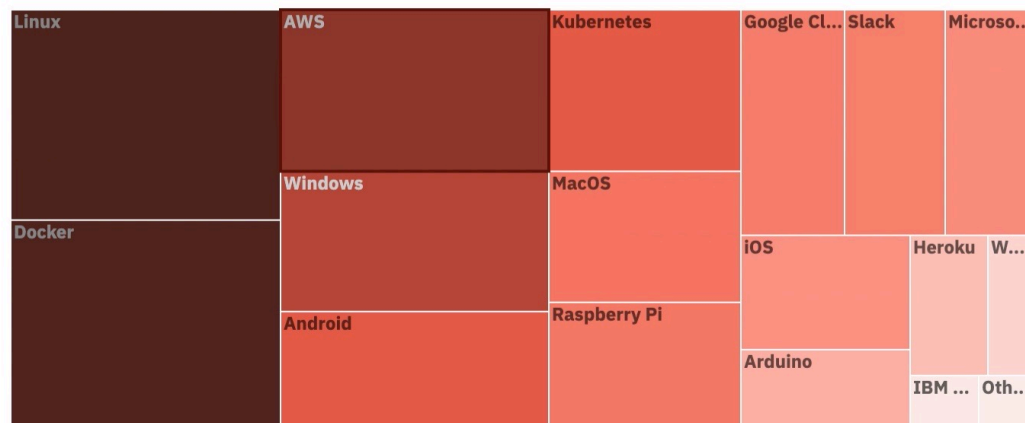
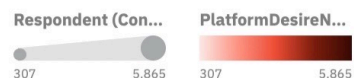
PostgreSQL

Redis

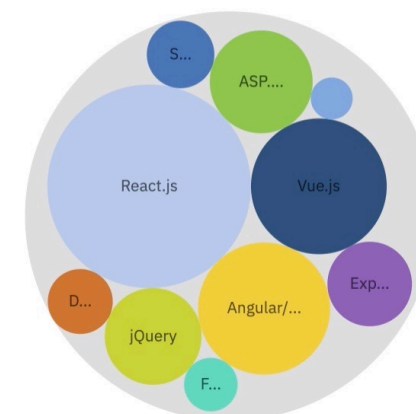
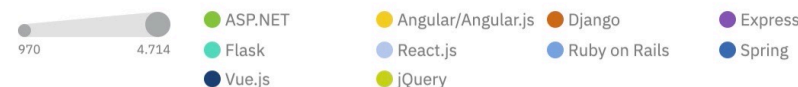
SQLite



## Platform Desire Next Year



## Top 10 Web Frame Desire Next Year





# DASHBOARD TAB 3

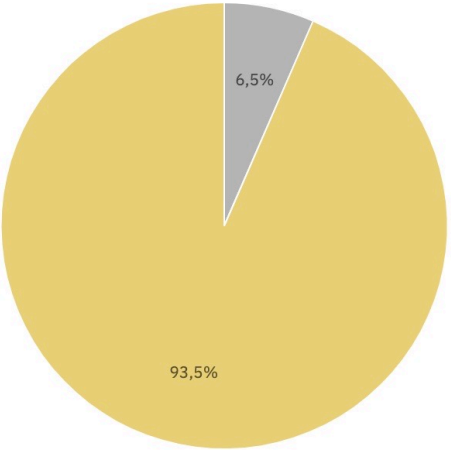
Current Technology Usage

Future Technology Trend

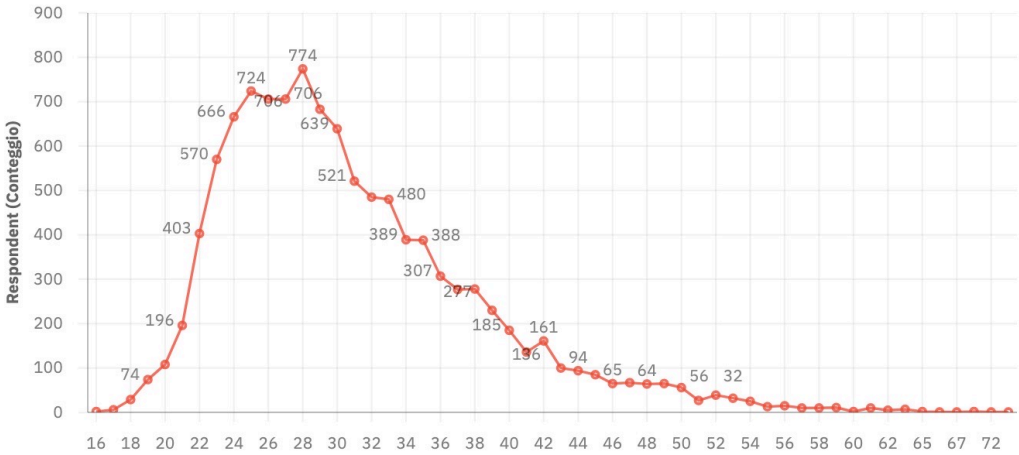
Demographics

Gender

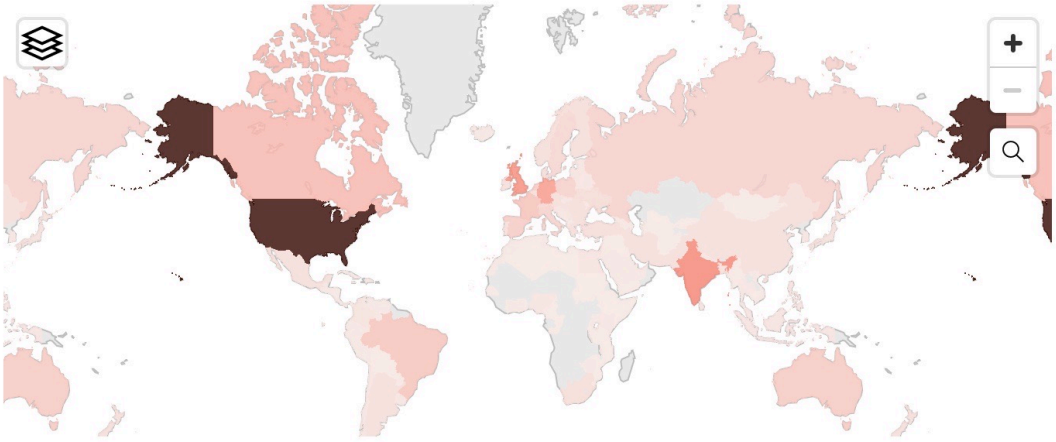
● Woman ● Man



Respondent Count by Age



Respondent (Con...  
1 3.058

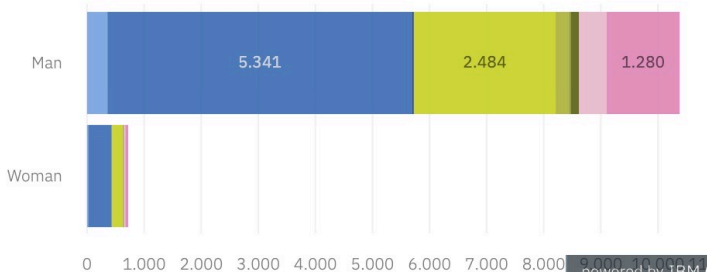


Respondent Count by Gender, classified by Formal Education

Level

EdLevel

- 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, a...
- Secondary school (e.g. Americ...





# DISCUSSION

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## DEMOGRAPHICS:

- Gender: big majority of men
- Country: most of the respondent are from USA
- Age: majority is in the 20-30s
- Educational Level: majority have a Bachelor or Master Degree.

# OVERALL FINDINGS & IMPLICATIONS

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## Findings

- Web-based languages are the most desirable skills, with an expected interest in Python and SQL
- Relational Database continues to be a strong skill, and non-relational databases are becoming more interesting
- Windows and Linux are strong skills and cloud-based platform are becoming more interesting
- There are opportunities to improve the presence of minorities

## Implications

- Web-based application is taking over traditional application.
- Python and SQL are strong skills in the IT industry.
- Non-relational database sees increasing adoption.
- Cloud-based services become top-choice for platform development.

# CONCLUSION

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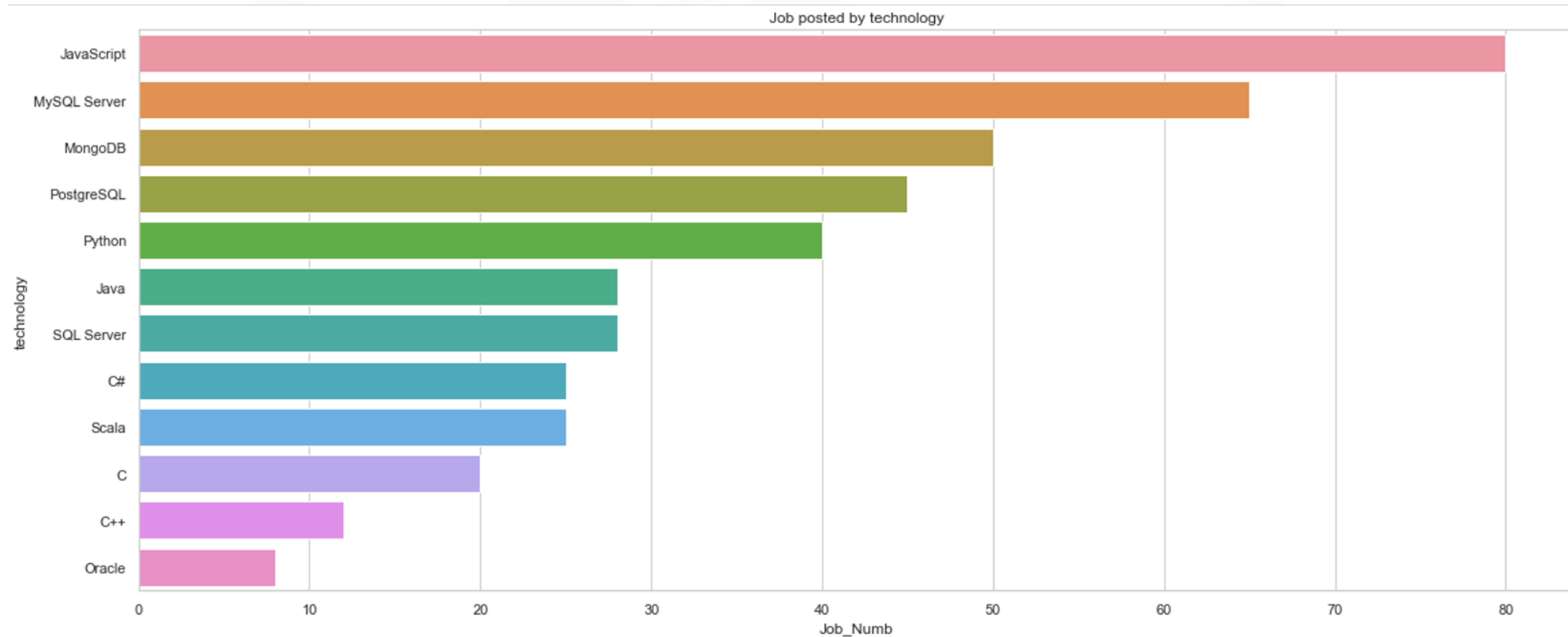
- To stay relevant in the technology field, it's important to learn web-based language & non-relational database.
- Invest the budget in order to hire additional staff with skills needed to fill any gaps.
- Set aside budget or put a program in place to upskill those already employed.
- There are possibilities to work on gender gap in IT industry.

# APPENDIX

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# JOB POSTINGS



# POPULAR LANGUAGES

