



TECHNOLOGY TREND

ANALYSIS PRESENTATION

Beatrice Favella

October 12, 2022

OUTLINE



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

EXECUTIVE SUMMARY



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



- 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



- 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.

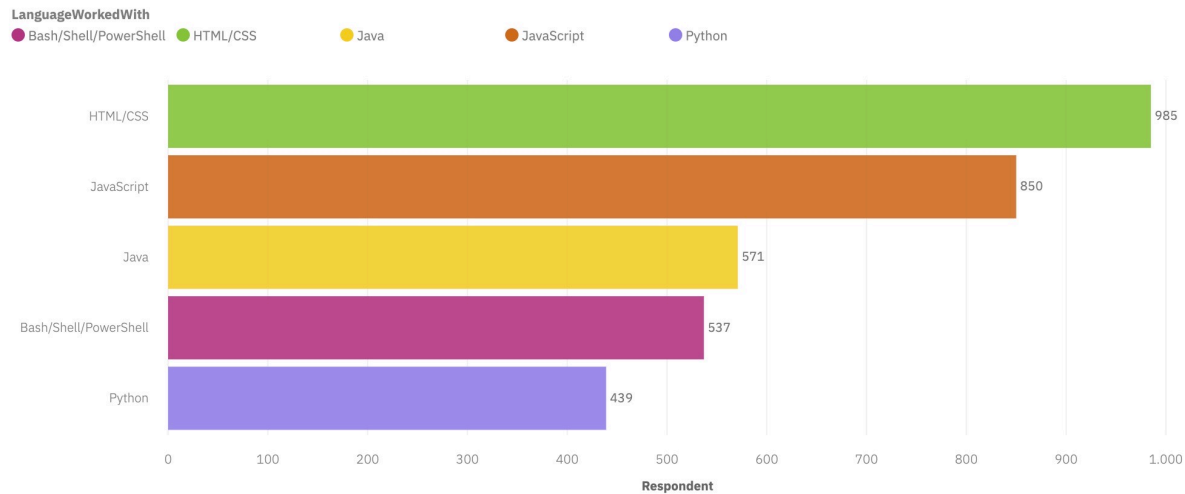
RESULTS



PROGRAMMING LANGUAGE TRENDS

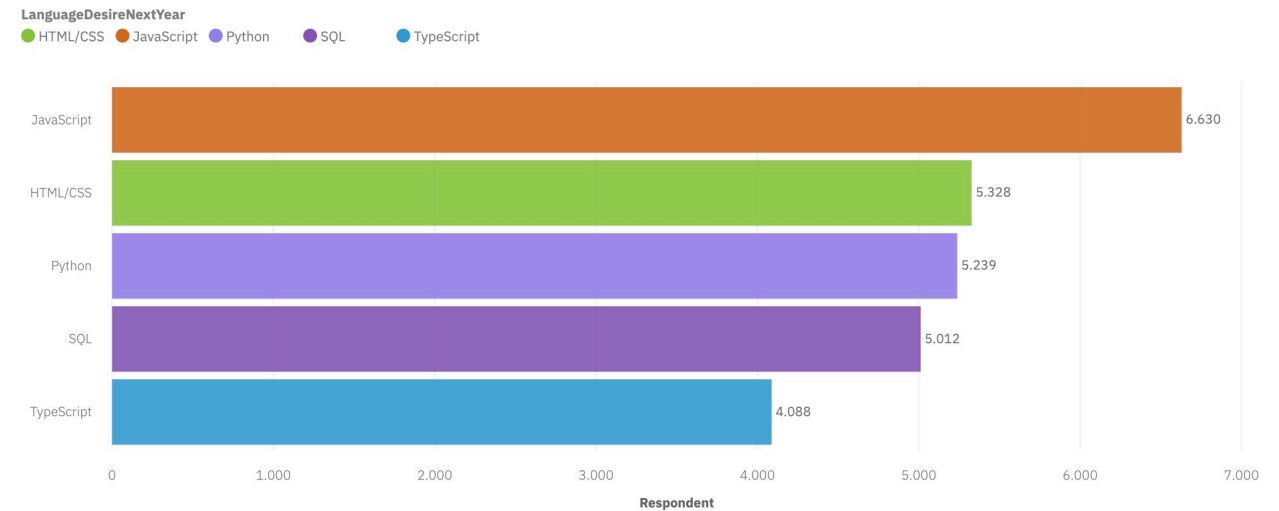
Current Year

Top 5 Language Worked With



Next Year

Top 5 Language Desire Next Year



PROGRAMMING LANGUAGE TRENDS - FINDINGS & IMPLICATIONS

Findings

- JavaScript and HTML/CSS remain in the top 2 most popular programming language.
- Python and SQL have gained more interest for next year
- Bash/ Shell/PowerShell has decreased: are used but no longer desired in the top 5 for next year

Implications

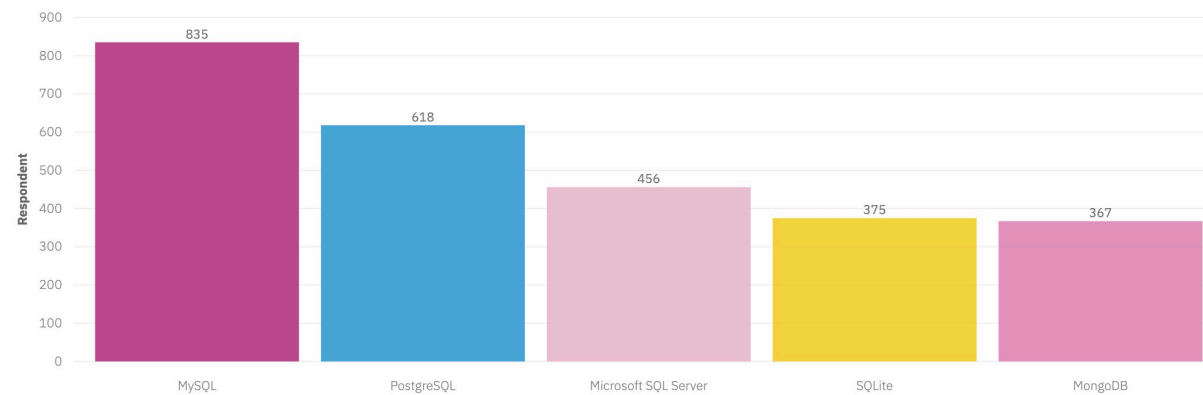
- JavaScript and HTML/CS have a solid position and are considered important skills
- Expected growth for Python and SQL: skills more required
- An expected decrease in interest for Bash/Shell /PowerShell

DATABASE TRENDS

Current Year

Top 5 Database Worked With

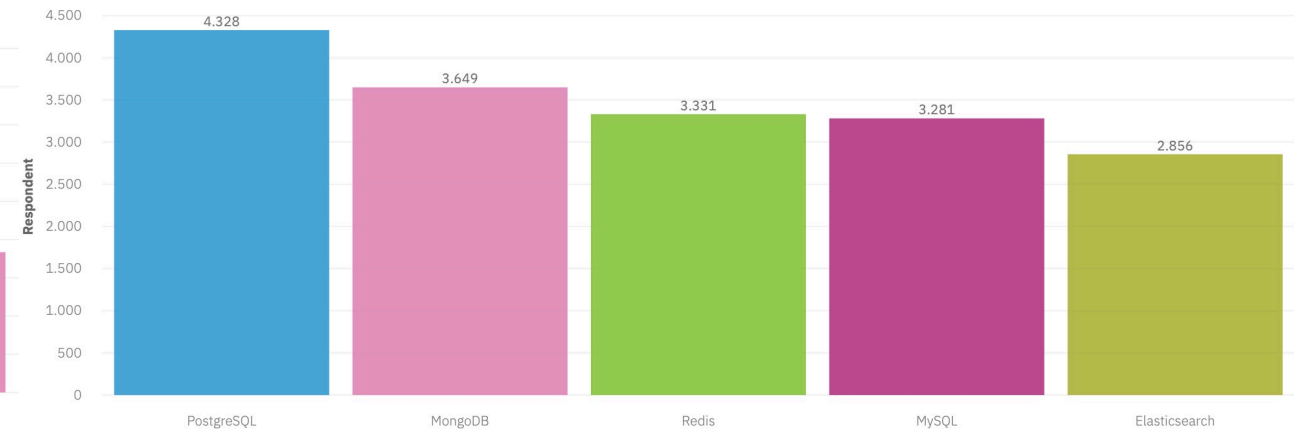
DatabaseWorkedWith
SQLite PostgreSQL MySQL MongoDB Microsoft SQL Server



Next Year

Top 5 Database Desire Next Year

DatabaseDesireNextYear
Elasticsearch MongoDB MySQL PostgreSQL Redis



DATABASE TRENDS - FINDINGS & IMPLICATIONS

Findings

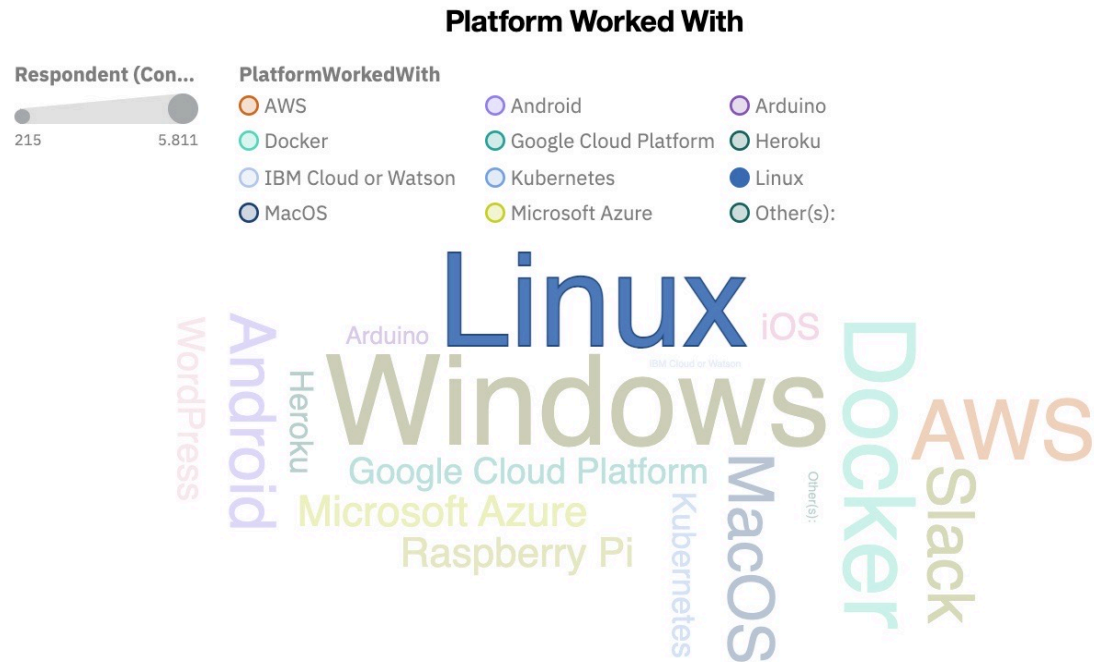
- PostgreSQL and MySQL: remain in the top 5 of used and desired
- Mongo DB and Redis: more desired for next year than they are used now.
- Microsoft SQL Server and SQL Lite are used but no longer desired in the top 5 for next year

Implications

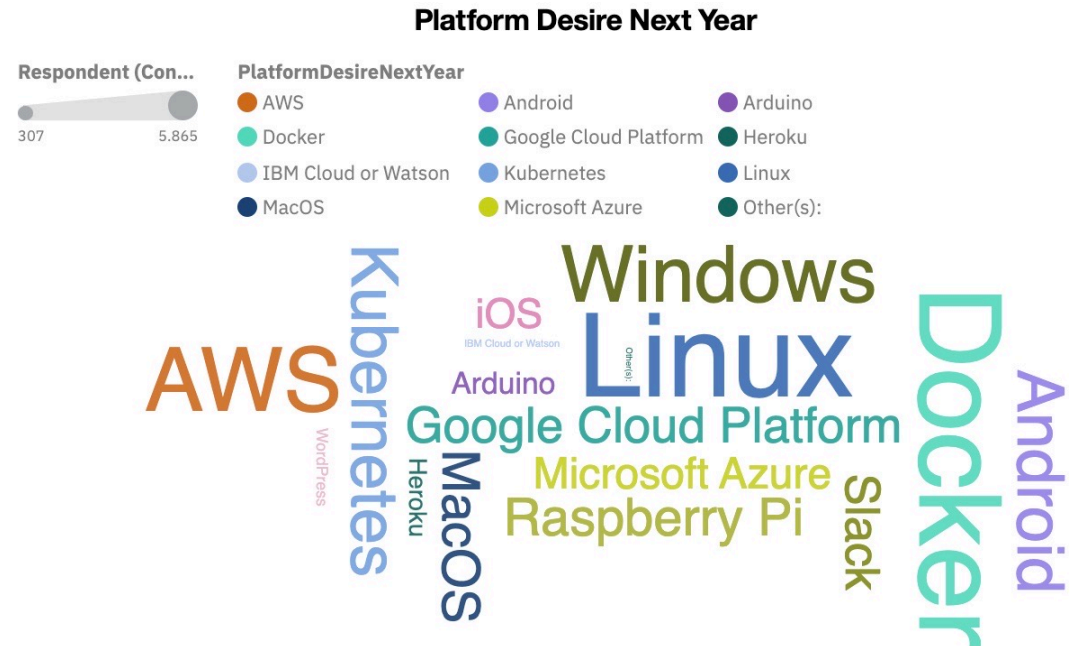
- PostgreSQL and MySQL have a solid position: strong skills
- Expected growth for Mongo DB and Redis: those skills will be more required
- Expected decrease in interest for Microsoft SQL Server and SQL Lite skills.

PLATFORM TRENDS

Current Year



Next Year



PLATFORM TRENDS - FINDINGS & IMPLICATIONS

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



Click here to see the complete Dashboard:

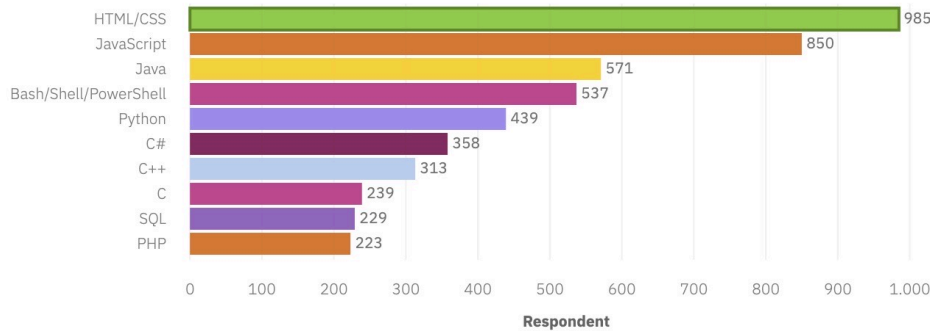
[Dashboard](#)

DASHBOARD TAB 1

Filtri

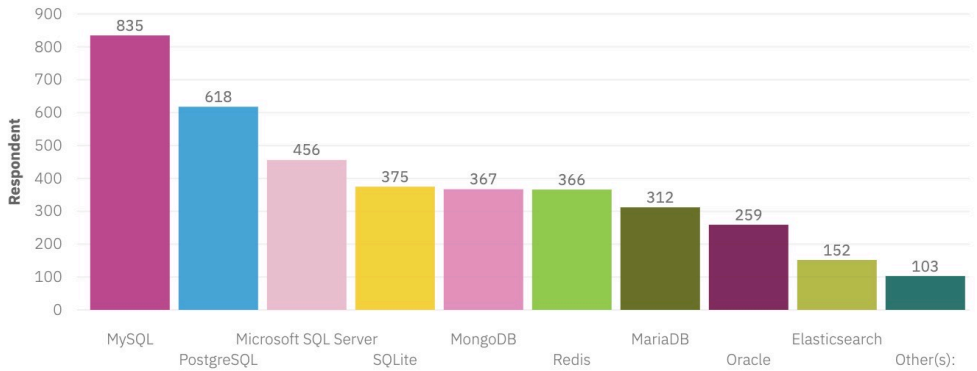
Current Technology Usage

Python SQL



Future Technology Trend

Demographics



Platform Worked With

Respondent (Con...)
215 5.811

PlatformWorkedWith

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

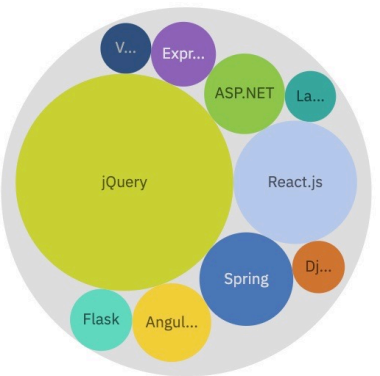


Top 10 WebFrame Worked With

Respondent (Con...)
148 634

WebFrameWorkedWith

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



DASHBOARD TAB 2

Current Technology Usage

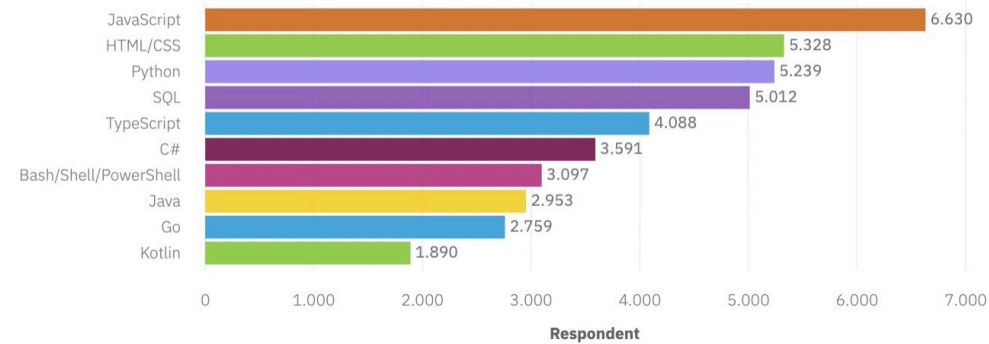
Java
SQL

JavaScript
TypeScript

Kotlin

Future Technology Trend

Python



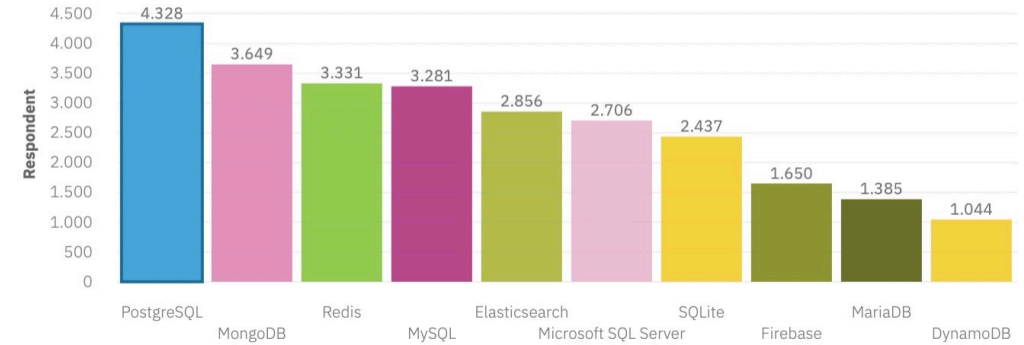
MongoDB

MySQL

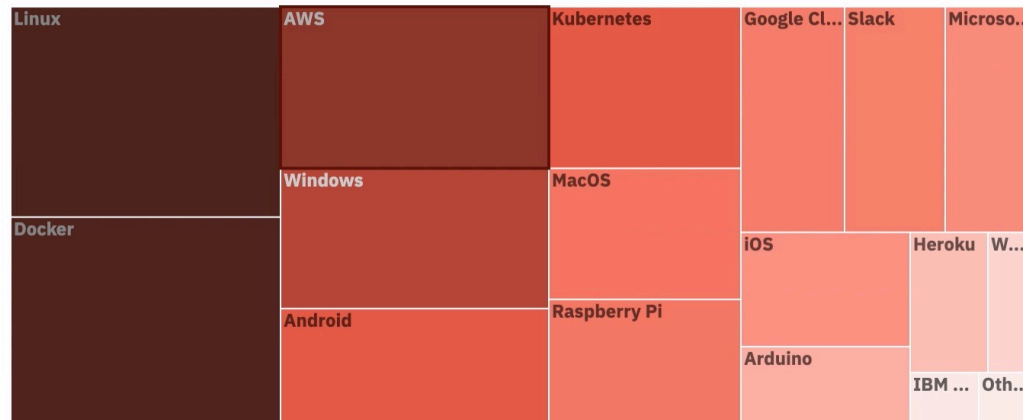
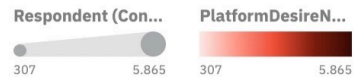
PostgreSQL

Redis

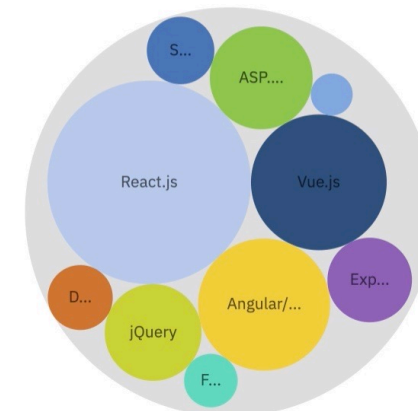
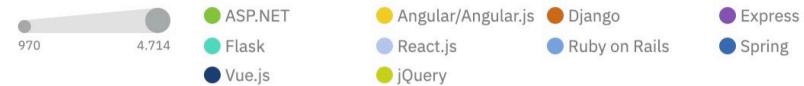
SQLite



Platform Desire Next Year



Top 10 Web Frame Desire Next Year



DASHBOARD TAB 3

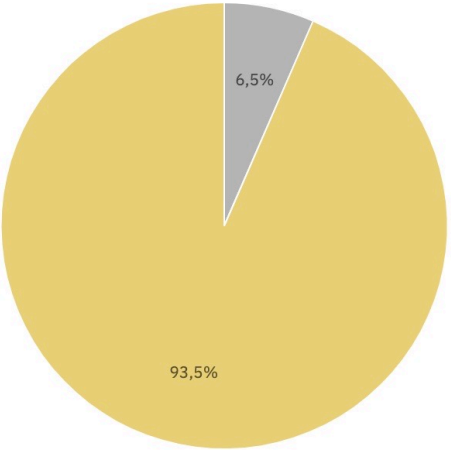
Current Technology Usage

Future Technology Trend

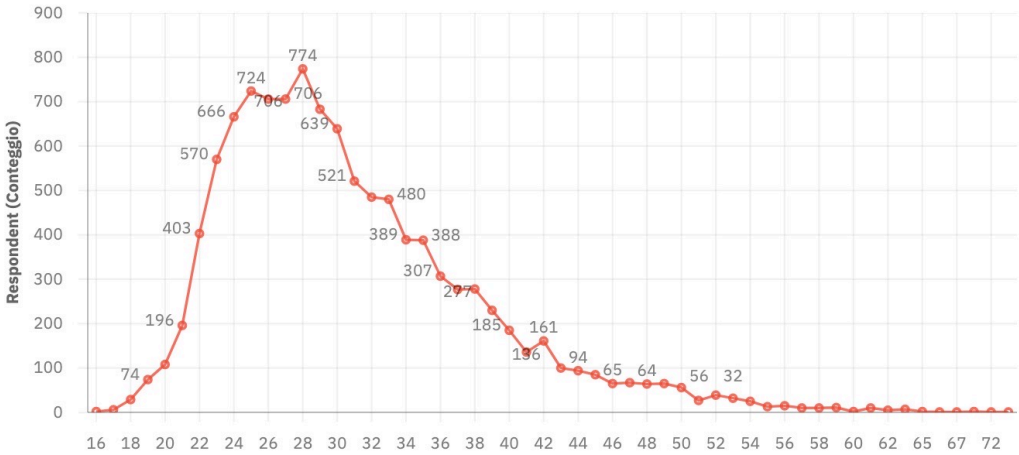
Demographics

Gender

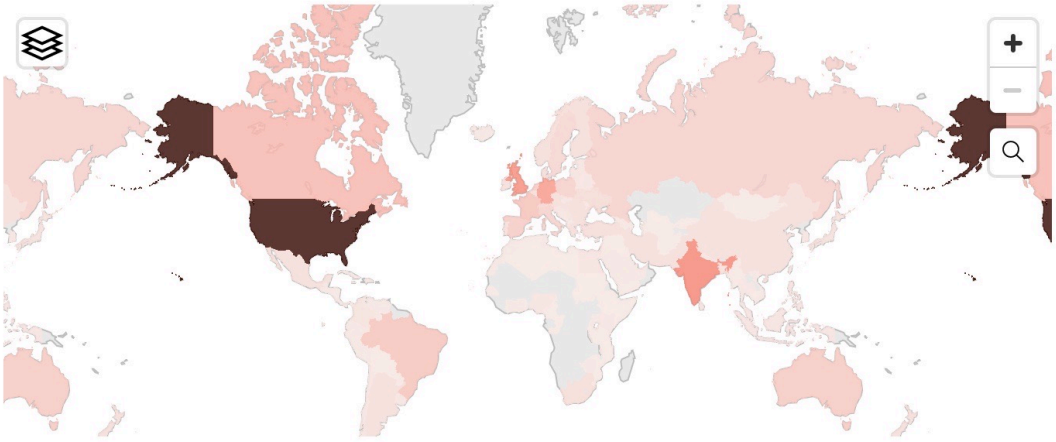
● Woman ● Man



Respondent Count by Age



Respondent (Con...
1 3.058

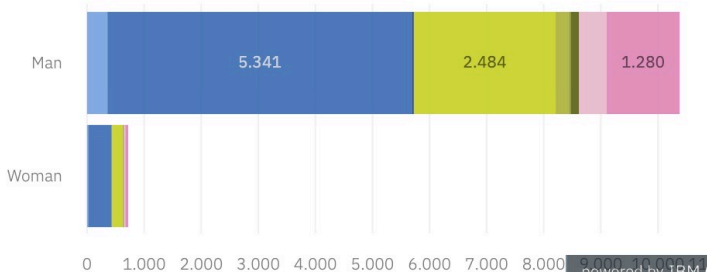


Respondent Count by Gender, classified by Formal Education

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



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

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 the traditional application.
- Non-relational database sees increasing adoption.
- Cloud-based services become top-choice for platform development.

CONCLUSION

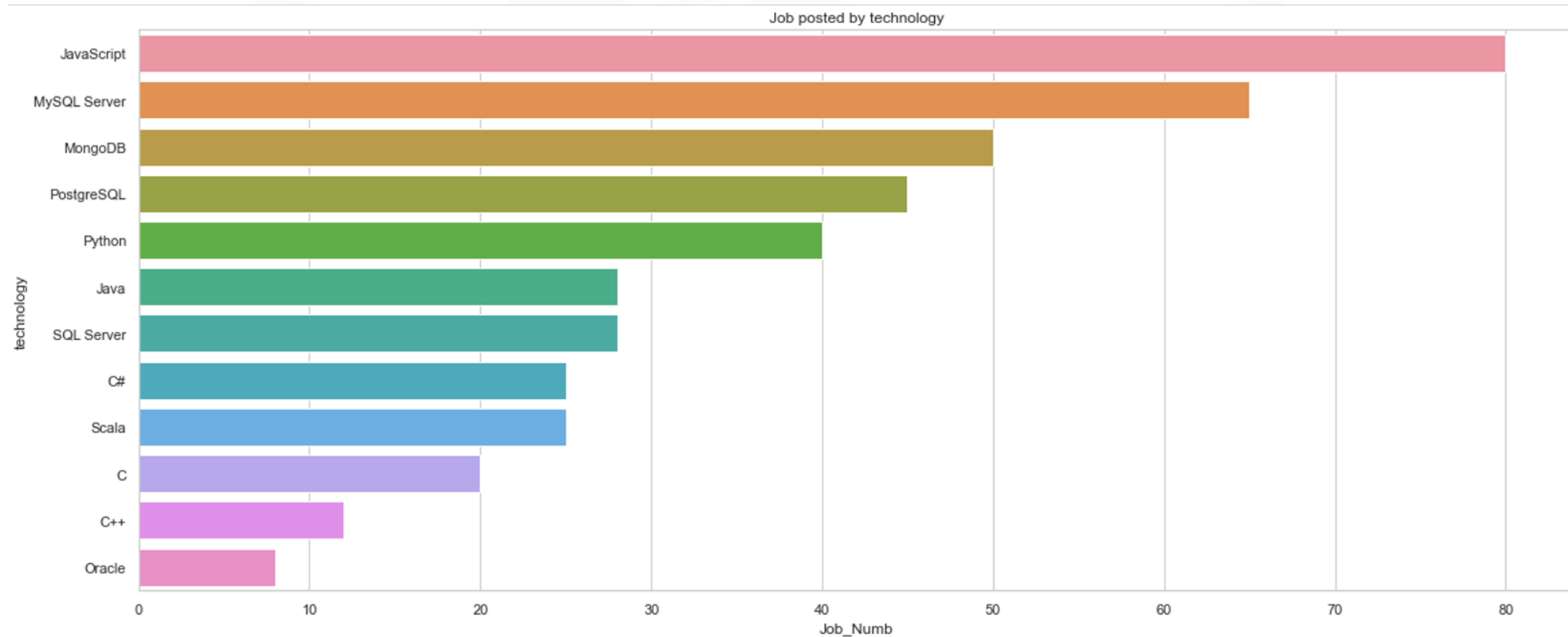


- To stay relevant in the technology field, it's important to learn web-based language & non-relational database.
- Invest the budget in order to hire additional staff with skills needed to fill any gaps.
- Set aside budget or put a program in place to upskill those already employed.
- There are possibilities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

APPENDIX



JOB POSTINGS



POPULAR LANGUAGES

