



# TECHNOLOGY ANANLYSIS PRESENTATION

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# 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 dataset for this report consists of **2019 Stack Overflow Developer Survey**.
- A subset of the survey data was considered which consists of 2 datasets i.e. data technologies and demographic to identify the present and future data technologies trends among people of different age groups all across the world.
- Present technology trends were identified as JavaScript as popular language, MySQL as popular database, Linux as popular platform and jQuery as popular web frame.
- Future technology that people wanted to learn were identified as JavaScript language, PostgreSQL database, Linux platform and React.js web frame.
- Most of the respondents of the survey were male with a master's or bachelor's degree between the age group of 21 to 43.

# INTRODUCTION

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- This report was prepared on the data of 2019 , regarding the technology trends in that year, and the upcoming trends over the year.
- This report will be helpful for the aspiring Developers/ software engineers, professionals and educators.
- This report sheds light on the following points –
  - Identifying the current technology trends in the market.
  - identifying which technology will be more used in the future or the technology people will shift to in the future.
  - targeting prospective employees based on the demographic profile .

# METHODOLOGY

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- Data collection: the data used in this report has been collected from 3 different sources
  - subset of stack overflow developer survey 2019
  - Collected number of job postings using Jobs API
  - Collected annual average salary of programming languages using Web scraping
- Data wrangling: the subset data was wrangled in order to remove missing values, duplicates and normalizing data.
- Exploratory data analysis: after cleaning that data exploratory analysis was done to identify outliers, distribution of data and correlation between different columns.
- Data visualization: IBM Cognos was used to creates dashboard using the subset data of survey

# RESULTS

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## The results consists of 4 main parts:

- Programming language trend
- Database trend
- Platform trend
- Web frame trend

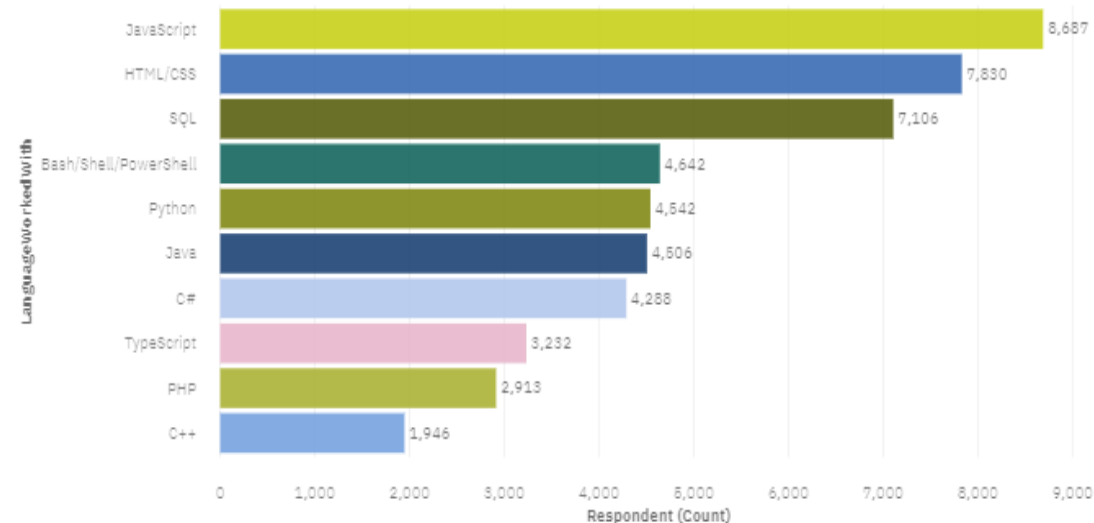
# PROGRAMMING LANGUAGE TRENDS

## Current Year

Top 10 Language Worked With

Top 10 Language

Legend: Bash/Shell/PowerShell, C#, C++, HTML/CSS, Java, JavaScript, PHP, Python, SQL, TypeScript

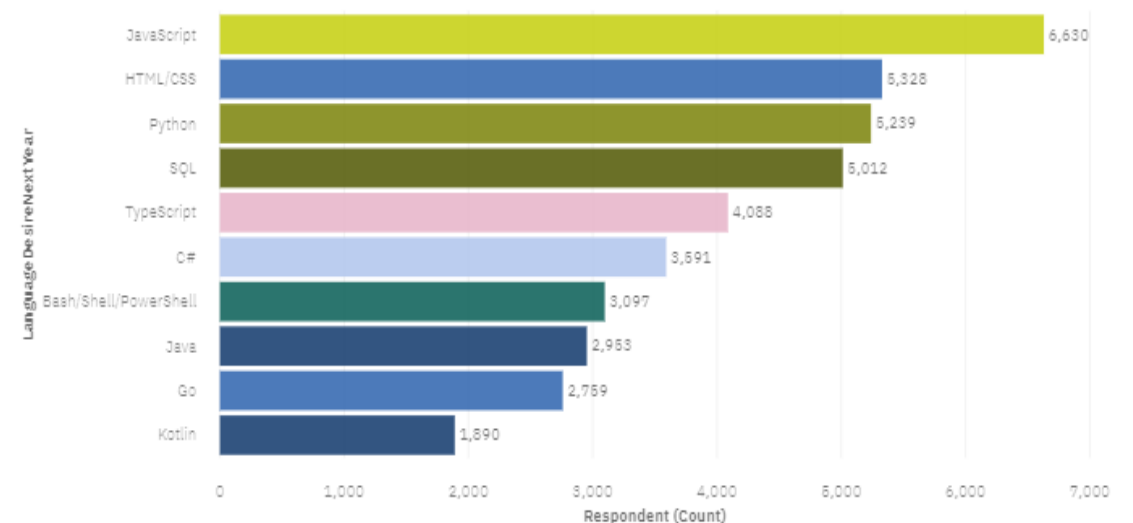


## Next Year

Top 10 Language Desire Next Year

Language Desire Next Year

Legend: Bash/Shell/PowerShell, C#, Go, HTML/CSS, Java, JavaScript, Kotlin, Python, SQL, TypeScript



# PROGRAMMING LANGUAGE TRENDS - FINDINGS & IMPLICATIONS

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## Findings

- JavaScript & HTML/CSS are top programming languages for both current and future trend.
- There is an increased interest in developers to learn python and TypeScript next year
- SQL is an important language among developers and will likely remain in upcoming years as well.

## Implications

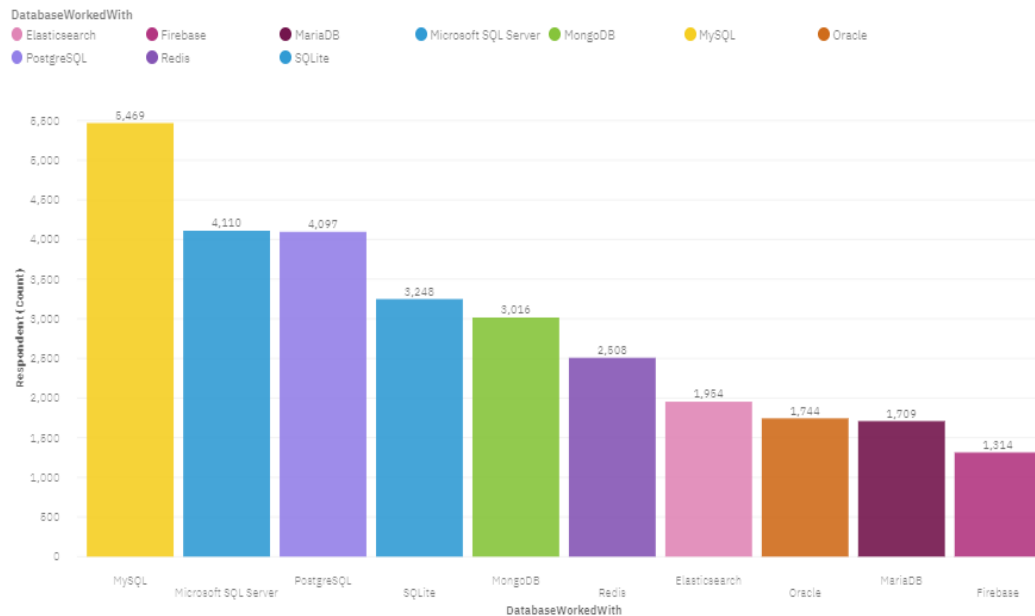
- Web development jobs will continue to remain in high demand in the future as there is an increased interest in TypeScript as well along with JavaScript and HTML/CSS.
- AI and ML related jobs will see a growth trend in the future.
- There is a fall in the interest of Legacy language such as C++, PHP .



# DATABASE TRENDS

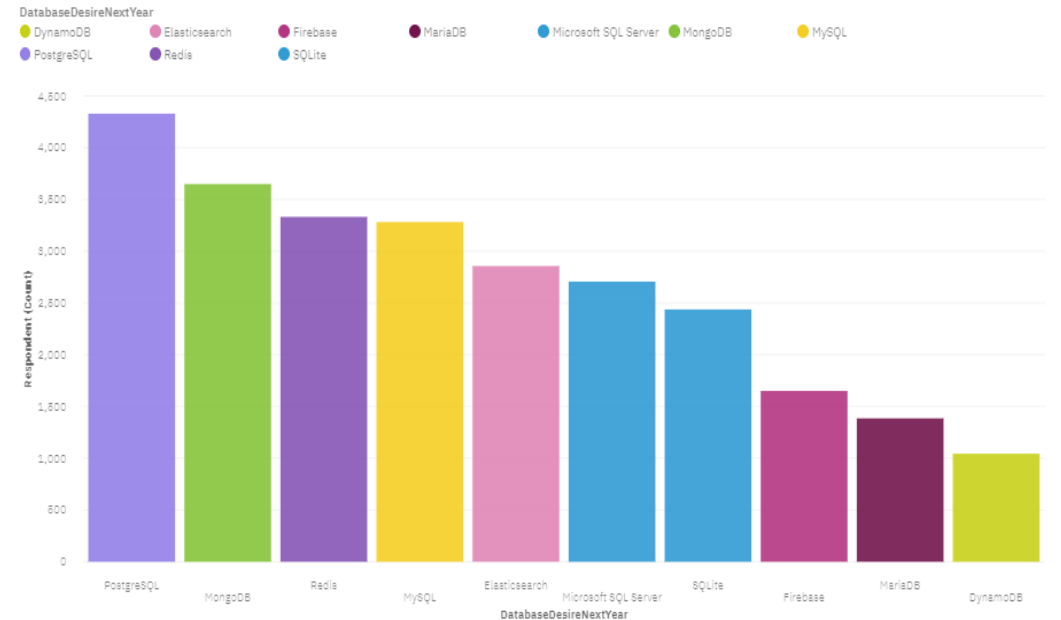
- Current Year

Top 10 Database Worked With



- Next Year

Top 10 Database Desire Next Year



# DATABASE TRENDS - FINDINGS & IMPLICATIONS

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## Findings

- SQL based databases are the main demanded databases system in the market.
- MySQL takes the top spot followed by Microsoft SQL.
- In upcoming year PostgreSQL seems to take the top spot.

## Implications

- Open source database becomes more and more popular compared with commercial one.
- Non-relational database see increasingly usage in the future.
- Relational database still takes a leading position in the near future.
- Upcoming developers must also give importance to NoSQL db also.

# DASHBOARD

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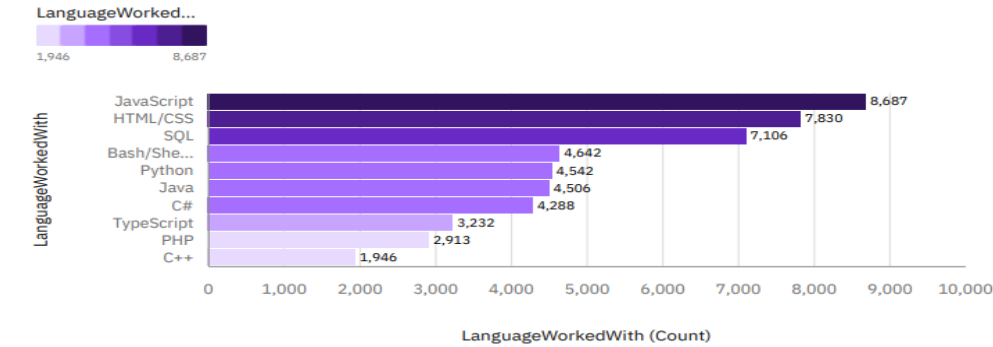


[https://github.com/Aditya-S2000/coursera/blob/main/Dashboards\\_Cognos.pdf](https://github.com/Aditya-S2000/coursera/blob/main/Dashboards_Cognos.pdf)

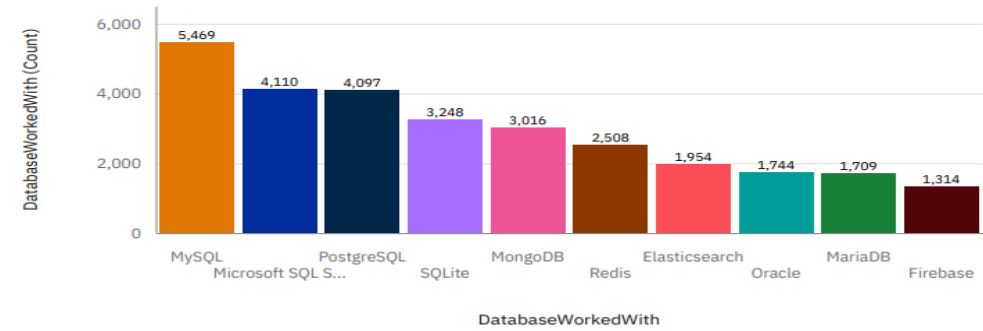
### Top 10 Language Worked With

| LanguageWorkedWith | Count |
|--------------------|-------|
| JavaScript         | 8,687 |
| HTML/CSS           | 7,830 |
| SQL                | 7,106 |
| Bash/Shell         | 4,642 |
| Python             | 4,542 |
| Java               | 4,506 |
| C#                 | 4,288 |
| TypeScript         | 3,232 |
| PHP                | 2,913 |
| C++                | 1,946 |

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| DatabaseWorkedWith | Count |
|--------------------|-------|
| MySQL              | 5,469 |
| Microsoft SQL S... | 4,110 |
| PostgreSQL         | 4,097 |
| SQLite             | 3,248 |
| MongoDB            | 3,016 |
| Redis              | 2,508 |
| Elasticsearch      | 1,954 |
| Oracle             | 1,744 |
| MariaDB            | 1,709 |
| Firebase           | 1,314 |



PlatformWorkedW... PlatformWorkedWith

0 5,811

(no value)  
 Arduino  
 Heroku

AWS  
 Docker  
 IBM Cloud or Watson

Android  
 Google Cloud Platform  
 Kubernetes

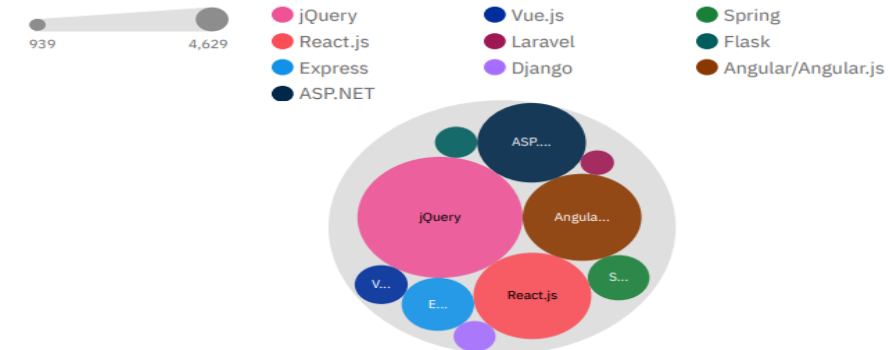
Docker  
 Linux  
 Windows  
 MacOS  
 WordPress  
 Android  
 AWS  
 Google Cloud Platform  
 Microsoft Azure  
 Slack  
 Heroku  
 Raspberry Pi  
 iOS  
 Kubernetes  
 IBM Cloud or Watson  
 Oracle  
 Arduino



939 4,629

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

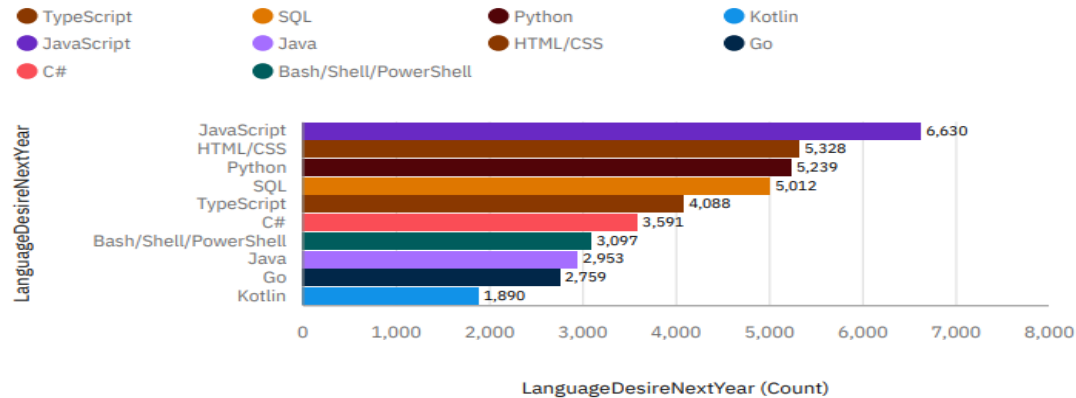
ASP...  
jQuery  
Angula...  
React.js  
S...  
V...  
E...



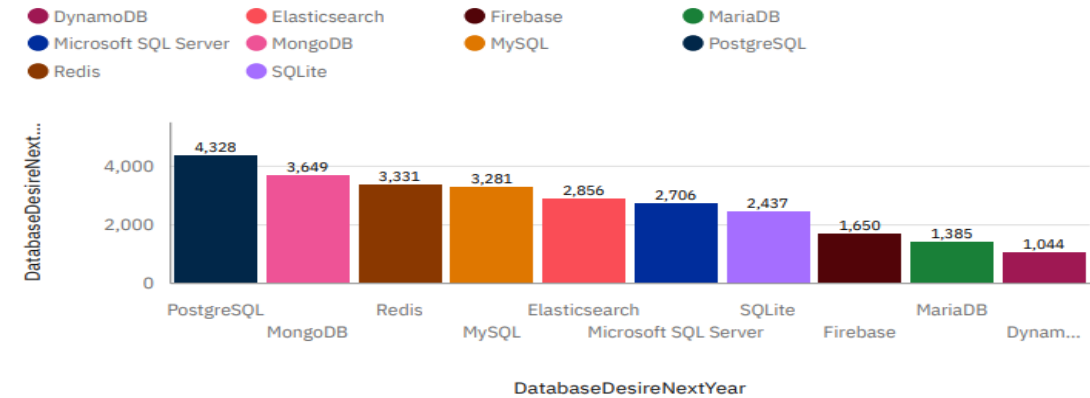
# DASHBOARD TAB 2

## Future Technology Trend

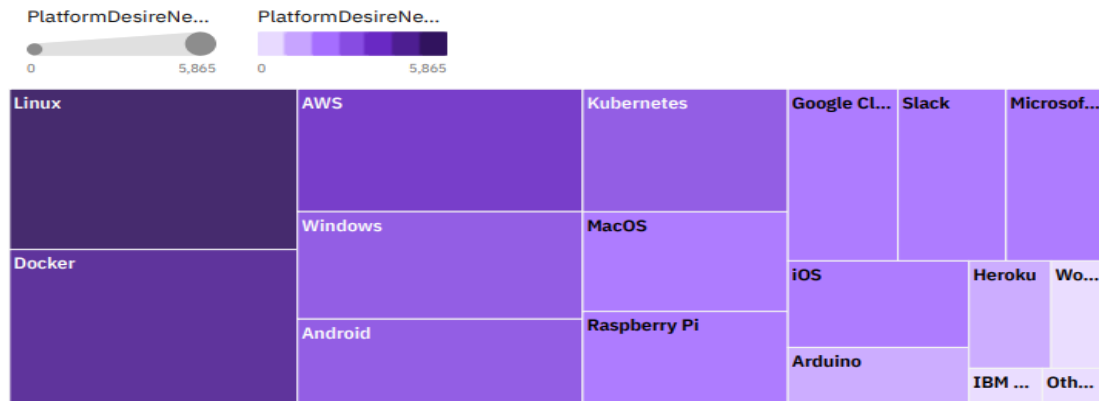
### Top 10 Language Desire Next Year



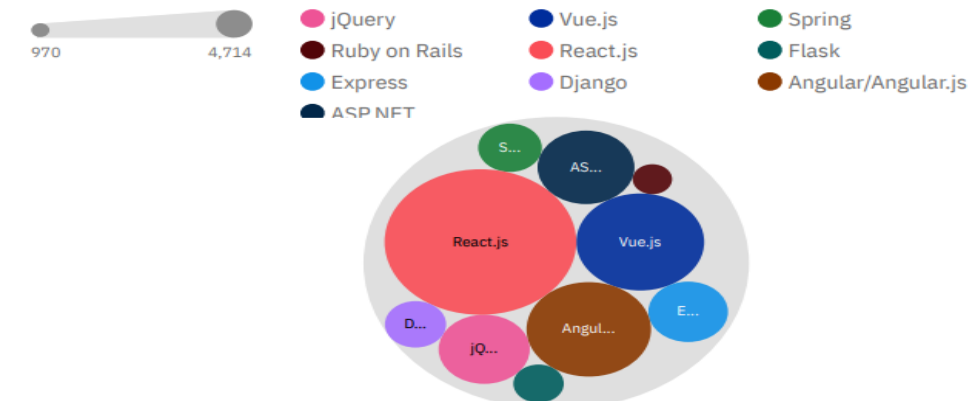
### Top 10 Database Desire Next Year



### Platform Desire Next Year



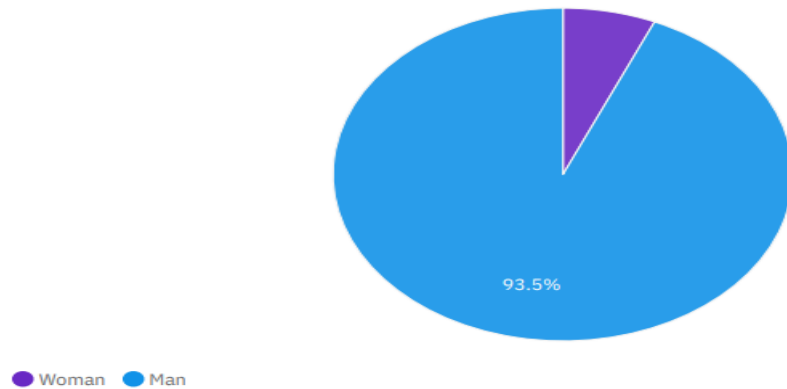
### Top 10 Web Frame Desire Next Year



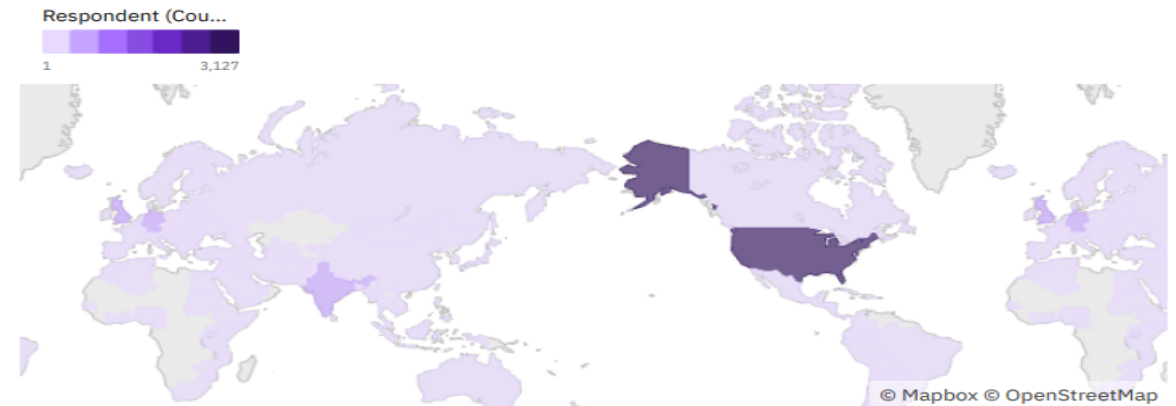
# DASHBOARD TAB 3

## Demographics

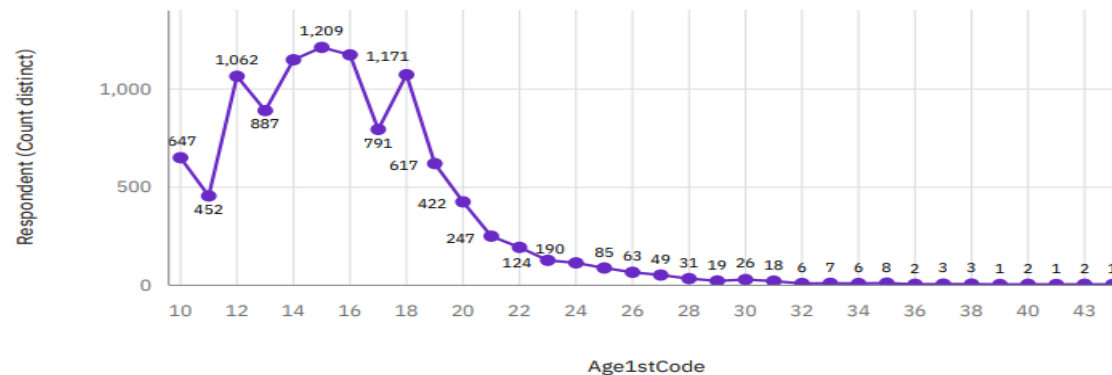
Respondent classified by Gender



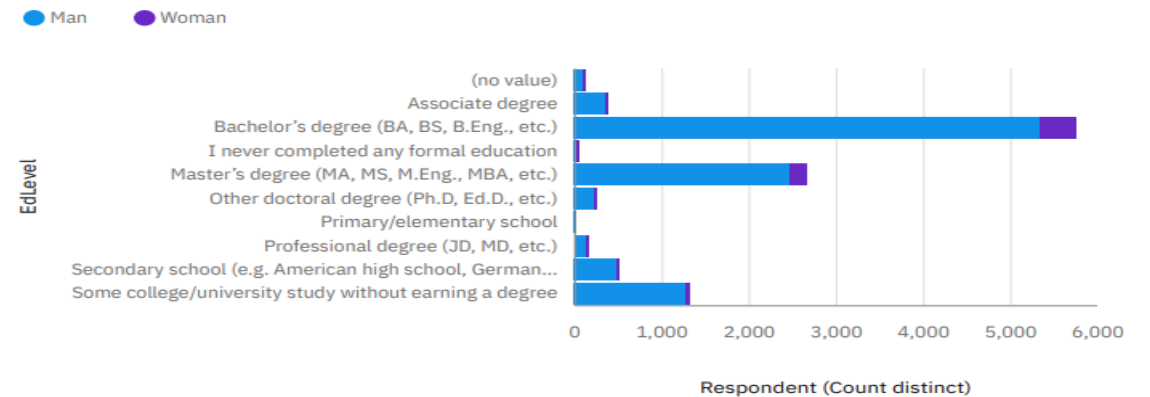
Respondent Count for Countries



Respondent Count by Age



Respondent Count by Gender and Formal Education Level



# DISCUSSION

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- Why is there such a huge demand for web developers.
- Which technologies should perspective developers and data professionals be learning?
- Why is the popularity of MySQL declining so drastically?
- Will NoSQL completely overtake relational databases?
- Is there a correlation between language and annual compensation?
- Why is there such a huge gap in gender, age and education in IT industry?

# OVERALL FINDINGS & IMPLICATIONS

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## Findings

- Web based languages are the current demand, which happens to remain same in future.
- SQL based database occupy the current demand, while in future.
- Linux and Windows are the current demand in platform, while in future docker looks to climb stairs.

## 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

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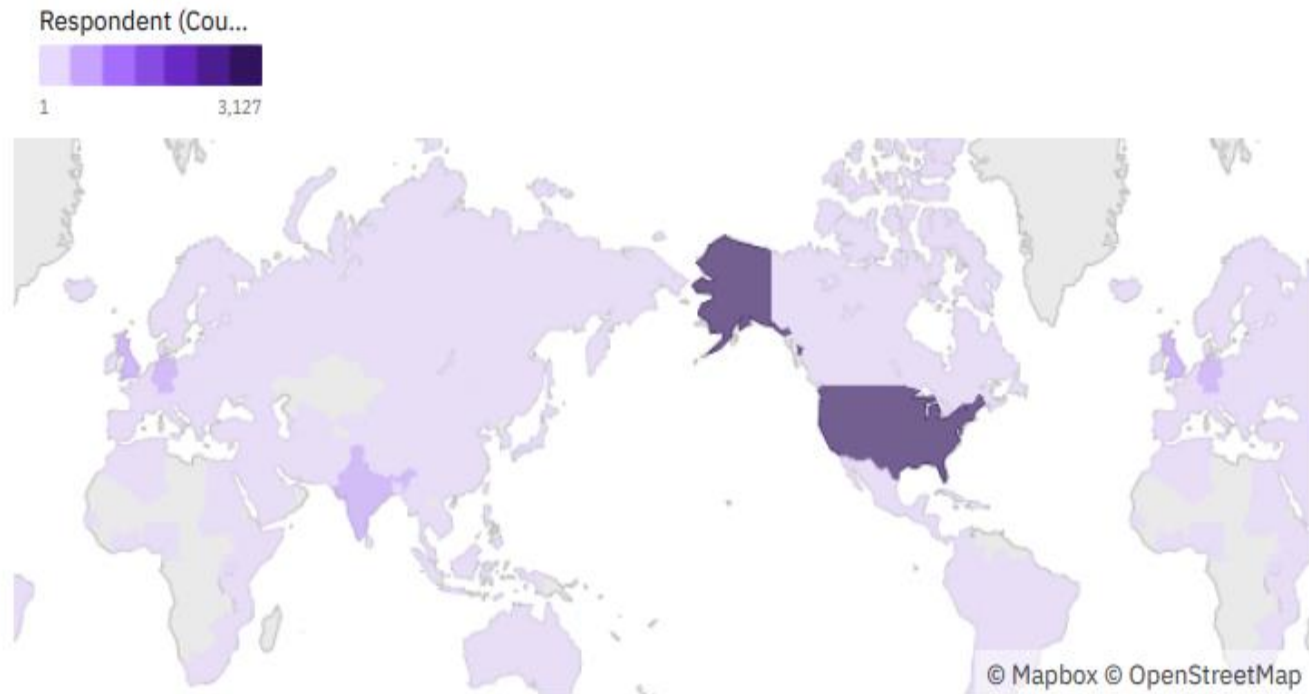


- To stay relevant in the technology field, it's important to learn web-based language & non-relational database.
- Among web framework, React.js is the best to learn for your future.
- Cloud-based service is the right direction for IT investment.

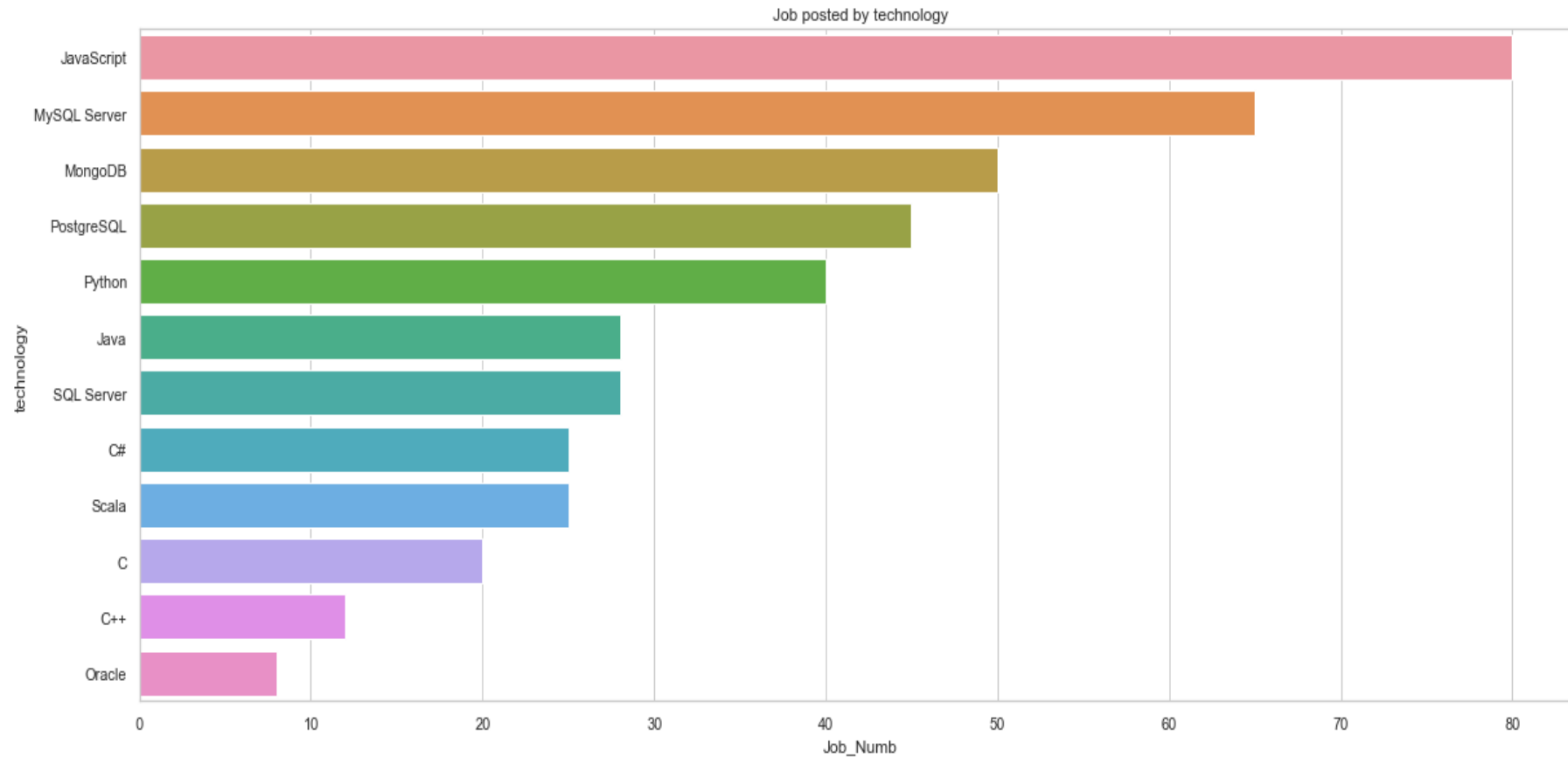
# APPENDIX



**Respondent Count for Countries**



# JOB POSTINGS



# POPULAR LANGUAGES

