# Analysis on Emerging Technology Skills

**Riya Yadav**

**March 2022**

# OUTLINE


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

# EXECUTIVE SUMMARY

- With the evolving technologies trends, it has been significant to keep up with the relevant technical skills required in an IT and business firm.
- The aim of the survey, which is to identify trend on the growing technical skills and to identify the future skills requirement in the firm to have a competitive environment and to make other important decisions such as hiring or financial decisions.

# INTRODUCTION

To keep up with changing technologies and stay competitive in an organization, it has become important for the IT and business firm to analyze the data for the emerging and relevant technical skills for the future requirement.

To fulfill the aim, the data analysis has been done. The presentation shows the current and future trends in various technologies such as in programming language, databases used, different platforms and web frames worked with. To support the analysis, this presentation also shows the results using different statistical techniques.

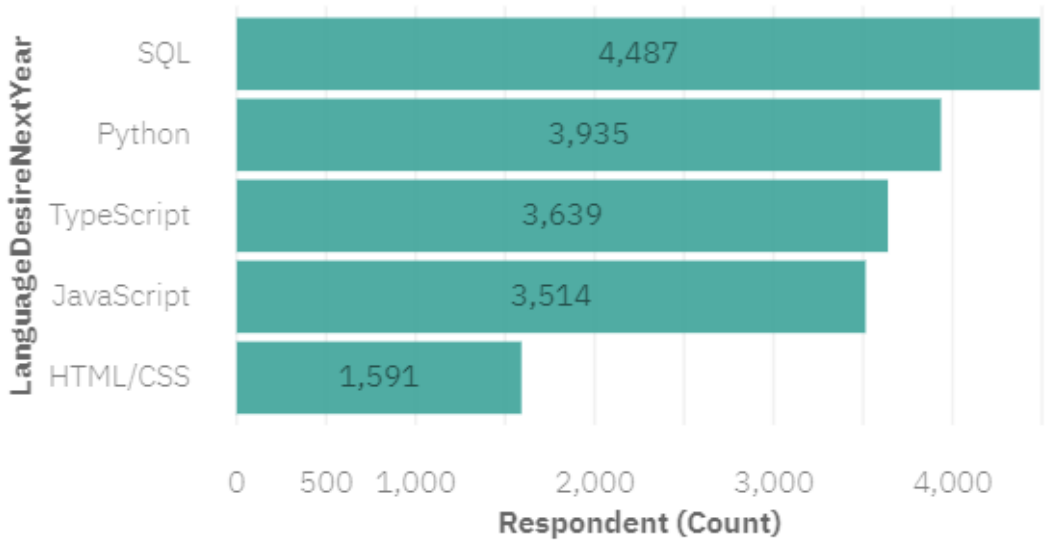
# METHODOLOGY

- To accomplish the results, the stack overflow developer survey 2019 data has been taken into consideration.
- Firstly, the data is collected using the scraping technique and the web APIs.
- The second step is called the data wrangling in which the data has been cleaned. The cleaning of dataset includes removing the missing or null values if any, identifying the duplicated rows or normalizing the data.
- Then comes the analyzing and visualizing the dataset, in which the task is to find the correlation between different columns and to visualize the data distribution.
- With the help of modified subset of stack overflow dataset, the results are presented on a dashboard using the IBM Cognos Dashboard.
- The dashboard has shows three different slides namely, Current Technology Usage, Future Technology Trends and Demographics .

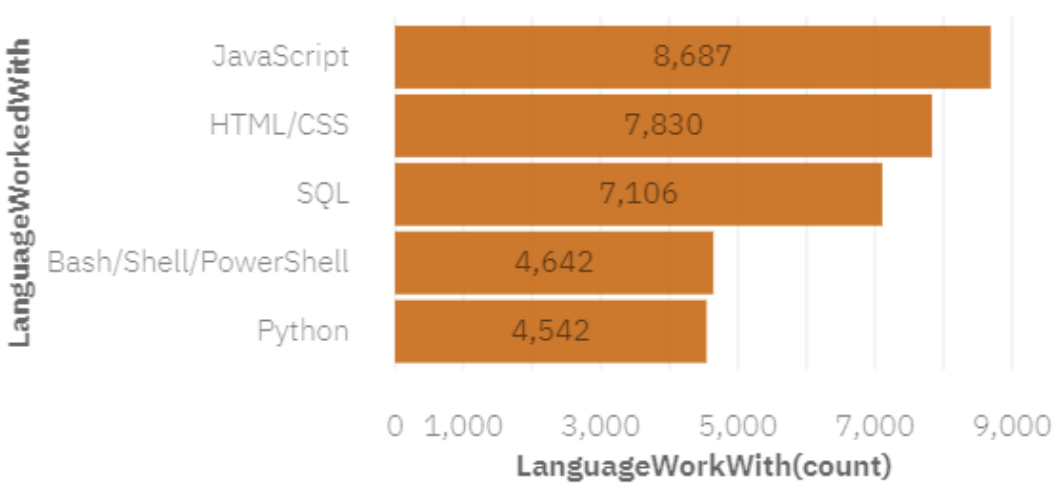
# RESULTS

## PROGRAMMING LANGUAGE TRENDS

### Top 10 Languages Desire Next Year




### Top 10 Languages Worked With




IBM Developer

SKILLS NETWORK

# PROGRAMMING LANGUAGE TRENDS- FINDINGS & IMPLICATION

**Findings:**

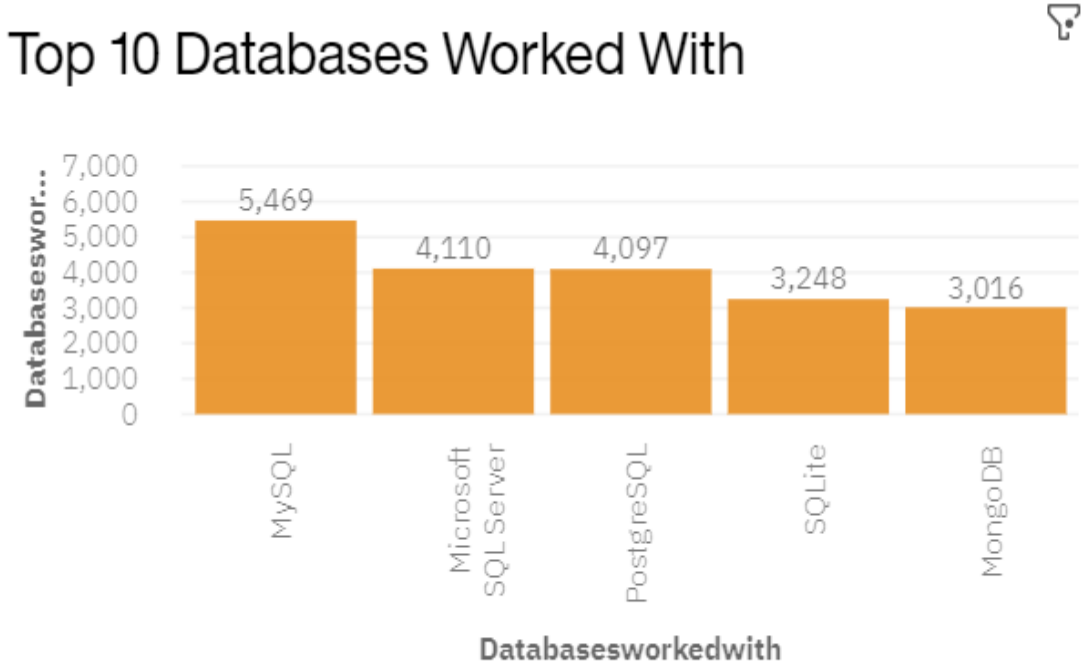
1. JavaScript and HTML is the top two languages worked with and maintains their place at top 5 as desired programming language next year.
2. SQL and Python becomes the top 2 desired language next year.
3. From the bottom 3, Typescript comes in the top 3 desired language next year

**Implications:**

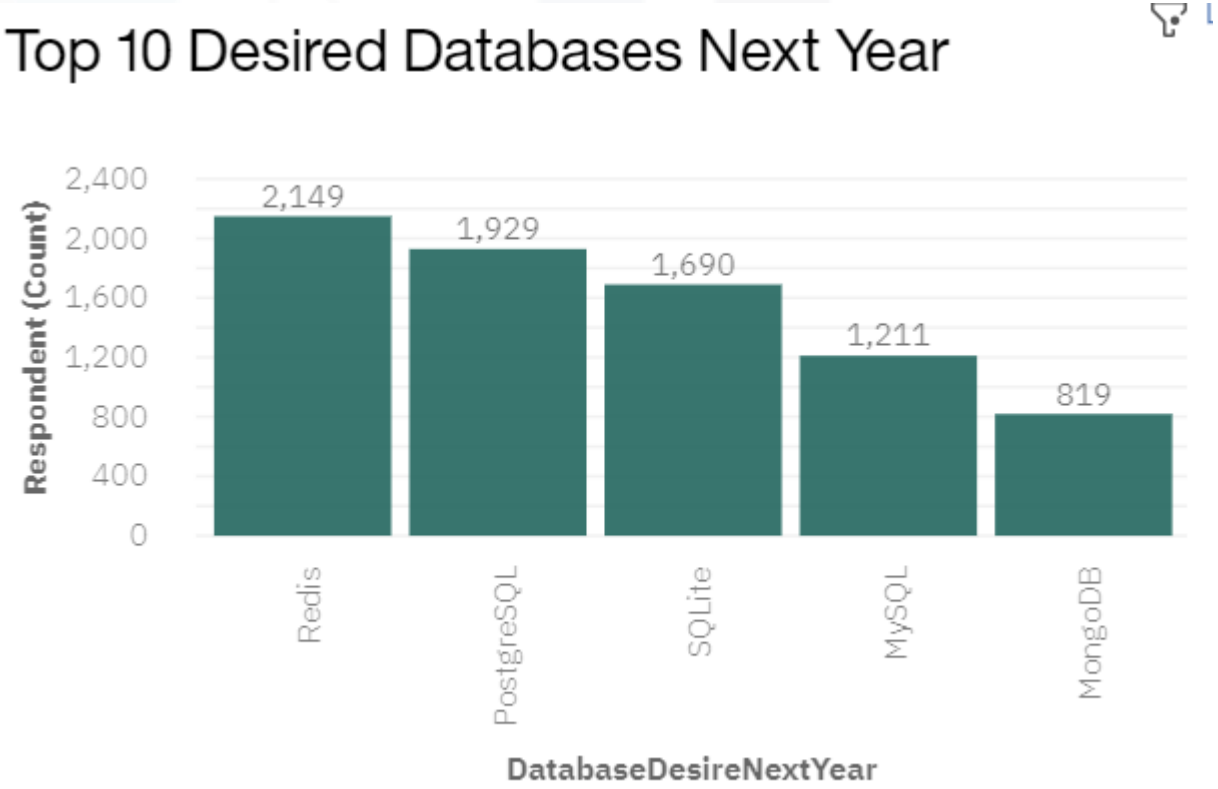
1. Python and SQL being the top 2 desired language are the two best language for growing field such as ML, big data and AI.
2. Web development remains in the high demand

# DATABASE TRENDS

## Current Year




## Next Year




IBM Developer

SKILLS NETWORK

# DATABASE TRENDS - FINDINGS & IMPLICATIONS

**Findings**

1. SQL, PostgreSQL, SQLite manages to be in top 5 databases worked with and desired next year

2. NoSQL database such as MongoDB maintains its position in top 5 databases next year

3. Redis has gained more interest among programmers and becomes the top desired databases next year

**Implications**

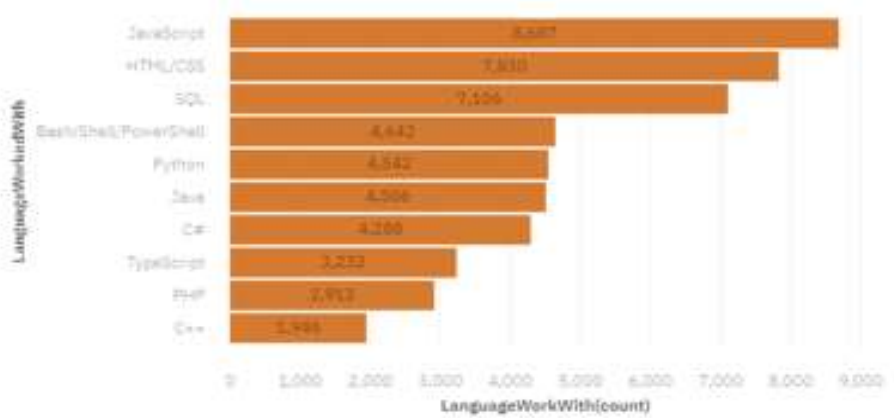
1. The open-source SQL databases are still and going to be in demand in future.
2. To provide great user experience with high performance, flexibility, scalability, the NoSQL database MongoDB is going to preferred by the companies.
3. The open-source database Redis is going to attract the audience to manage the real time geospatial data in near future.

# DASHBOARD

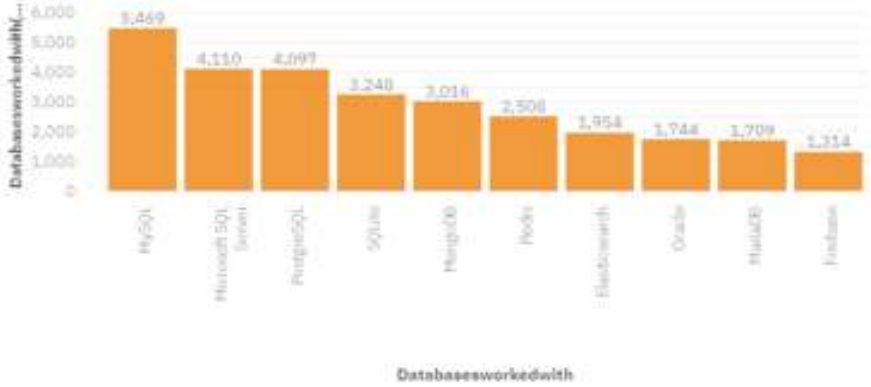
https://dataplatform.cloud.ibm.com/dashboards/66334caf-7513-415e-96ce-667c295934de/view/5235fd0338bd0aff57c3e2e407cf79042b622c0fb0bb870bd2867b495d332497a8684092c82c1f52d3100532f7bf125ac9

# CURRENT TECHNOLOGY USAGE DASHBOARD

Top 10 Languages Worked With

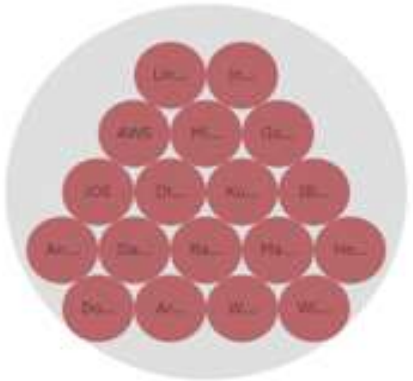



Top 10 Databases Worked With

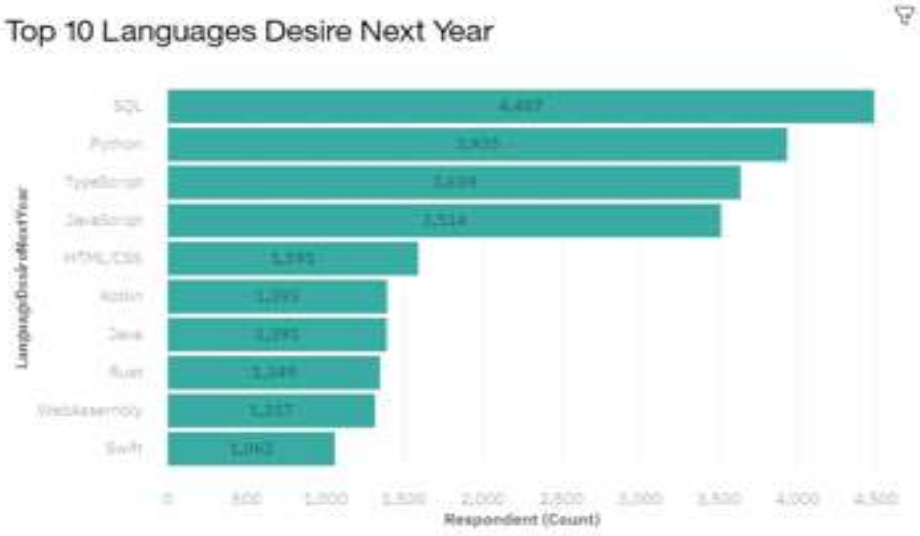


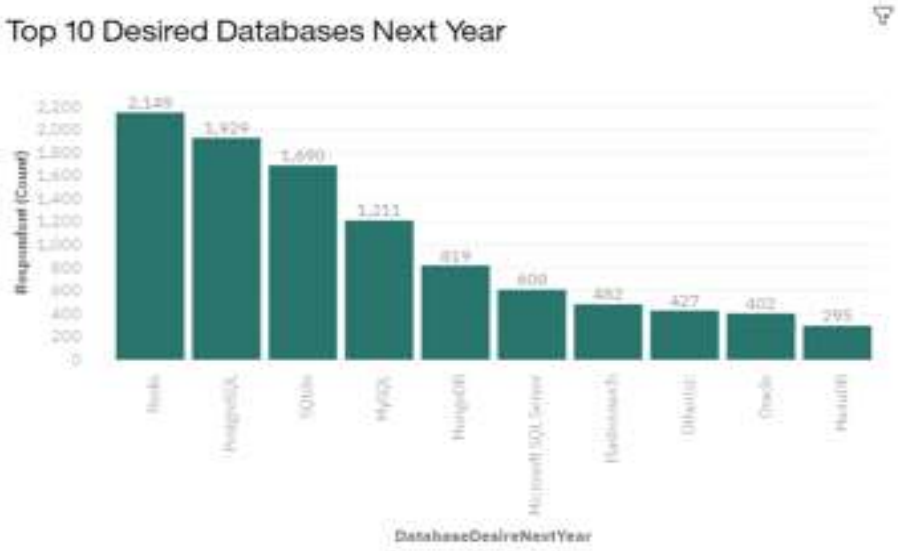

The Platforms Worked With

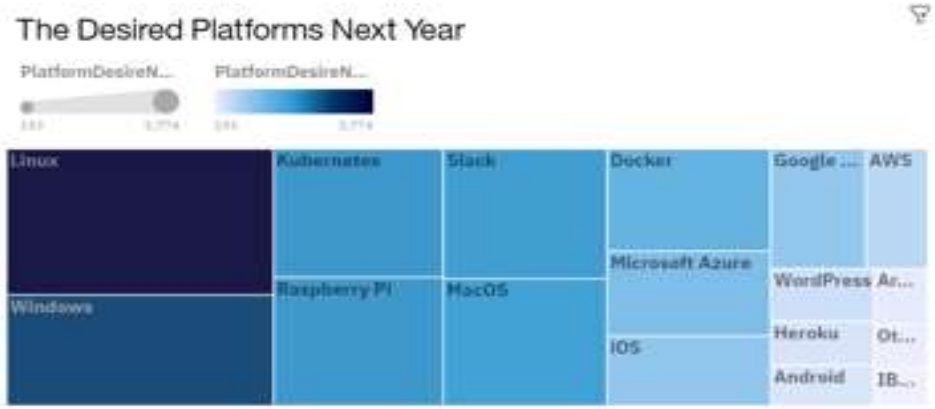
The Top 10 Platforms Worked With

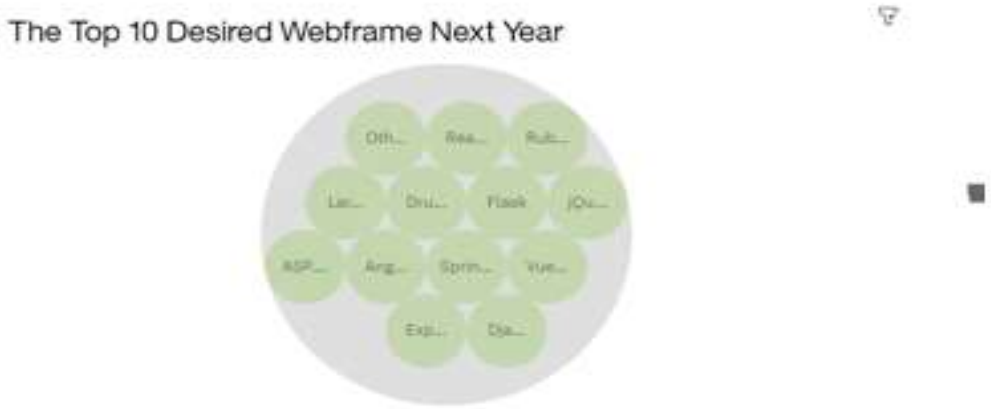


# FUTURE TECHNOLOGY TRENDS DASHBOARD



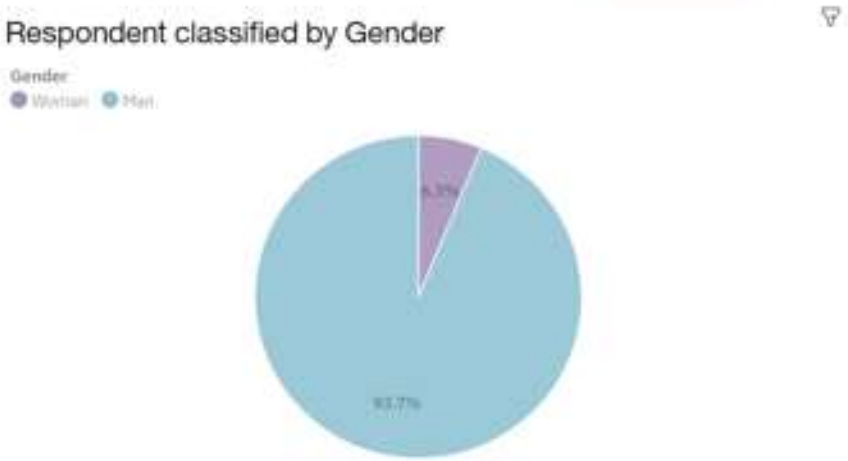



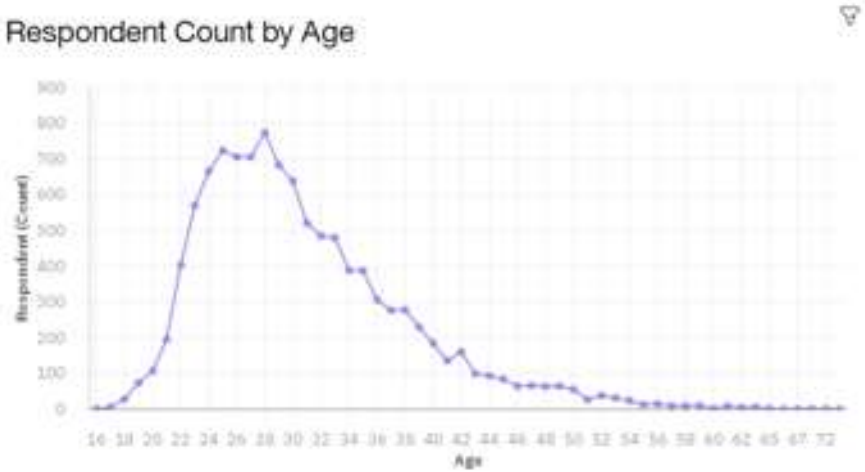



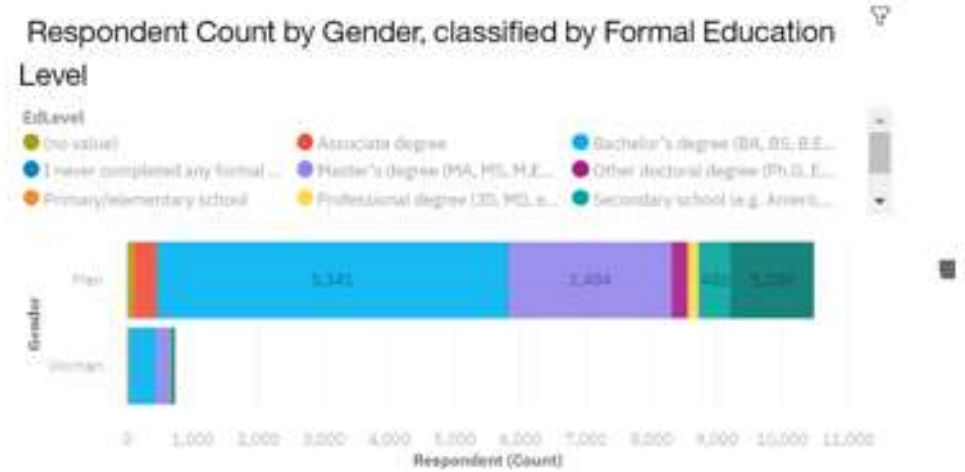

IBM Developer

SKILLS NETWORK

# DEMOGRAPHIC DASHBOARD





# DISCUSSION

As the stack overflow survey 2019 has produced some amazing results, we have observed the emerging programming languages, databases, desired platforms and web frames to work with in the future.

The survey results also shows both men and women playing their part in the field of technology.

We can also see the different age group, gender classified by their education level trend.

SKILLS NETWORK

# OVERALL FINDINGS & IMPLICATIONS

**Findings**

- Typescript has taken the limelight in the programming language world among the programmers whereas Python continues to be the fastest growing programming language.
- Observing the different platforms work with, Linux and Aws continues to be the desired platforms whereas Docker catches the attention of the audience and grabs its position in top three desired platforms.

**Implications**

- With the languages like JavaScript, Typescript, Html/CSS in the trend, the web development is a growing market.
- Python being the highest growing language would give the employees more opportunities in the field of Data Science.

SKILLS NETWORK

- There is still a huge gender gap in the field of technology according to the survey.
- In the demographic dashboard, the respondent count by age gives the idea that most of the people start writes their first code at the age of 16 and highest count is between the age group of 22 and 32.
- The concern of the huge gap between the gender must be taken into consideration and both gender should be given the equal opportunities to showcase their technical skills.

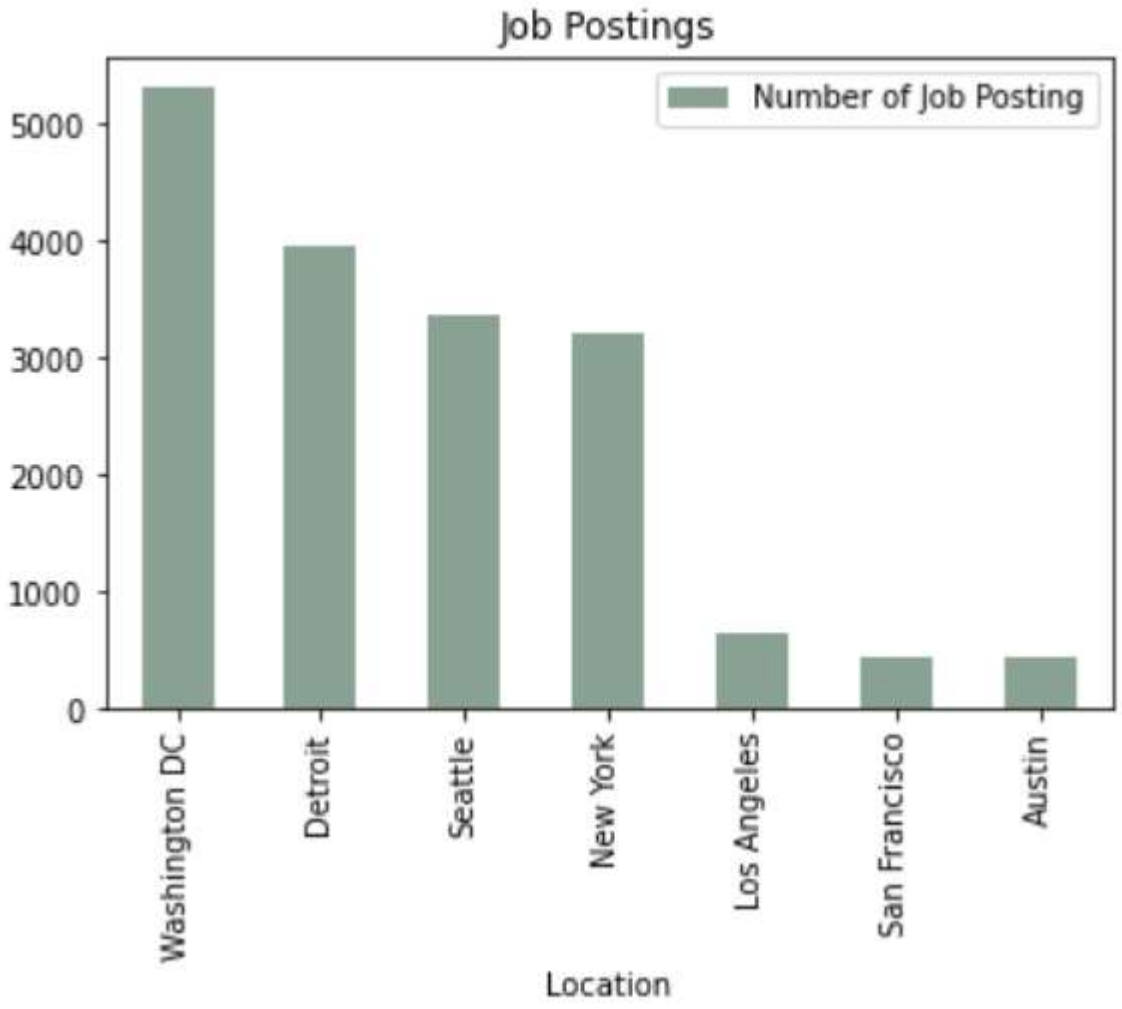
- Even though the count of women is less than men in the technology world, it is observed that the both gender uses their programming skills during their bachelor’s degree.
- When it comes to countries with high number of respondent, US comes at the top.
- Although, US have the highest count of respondents in the programming world. Other countries are also coming forward and providing the opportunities to all the interested age group.

# CONCLUSION

- The Firms should list out all the growing skills and make opportunities accordingly to their targeted employees and pays accordingly.
- The targeted audience irrespective of the age and gender should try to develop their skills with the changing technologies.
- It is still important to consider the people who are working with the outdated technologies.
- The firms could set a training program and a budget to increase the skills set of the employees.

SKILLS NETWORK

# JOB POSTINGS



# REFERENCES


- The 2019 Stack Overflow Developer Survey Results Are In - Stack Overflow Blog