Technology Trends and Analysis Presentatiom

Affran S.M.

September, 2023

OUTLINE

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

IBM Developer

SKILLS NETWORK

EXECUTIVE SUMMARY

- The most used programming languages used are Java and HTML/CSS and same is the case for top languages desired for next year.

- Most used and desired platforms are Linux and Windows.

- Even though MySQL and Microsoft SQL server are the most used databases, MongoDB and PostgreSQL shows increasing trend for next year.

- Gender gap in the IT industry is very high as 93.7% respondents are men and only 6.7% of respondents are women.

- The concentration of IT respondents are the highest in United States with the majority of respondents in the age group 24-28 and those who have completed their Bachelor's degree.

IBM Developer

SKILLS NETWORK

INTRODUCTION

- A survey is conducted amongst developers around the world to analyze the technology trend for the upcoming year.

- The IT market changes very quickly with new innovations so it is necessary to keep track of the ongoing and the upcoming trends.

- The survey is made based mainly on three different analysis:
  - Current ongoing trend
  - Upcoming trend
  - Demographics

METHODOLOGY

- Data Sources:
  - Stack Overflow Developers Survey 2019
  - Github Job Posting

- Data is analysed and explored using Python with the help of APIs, request libraries and Data Wrangling.

- The current and future technology trends are analysed with the help of survey data.

- The trends are displayed in various charts and graphs with the help of Matplotlib, Plotly and Seaborn.

IBM **Dev**eloper

SKILLS NETWORK

RESULTS

The collected data is then cleaned and statistical techniques is applied to get the desired data that we need. We then create dashboards to visualize the various technology trends on the basis of mainly three categories:

1. Current Trends

2. Upcoming Trends

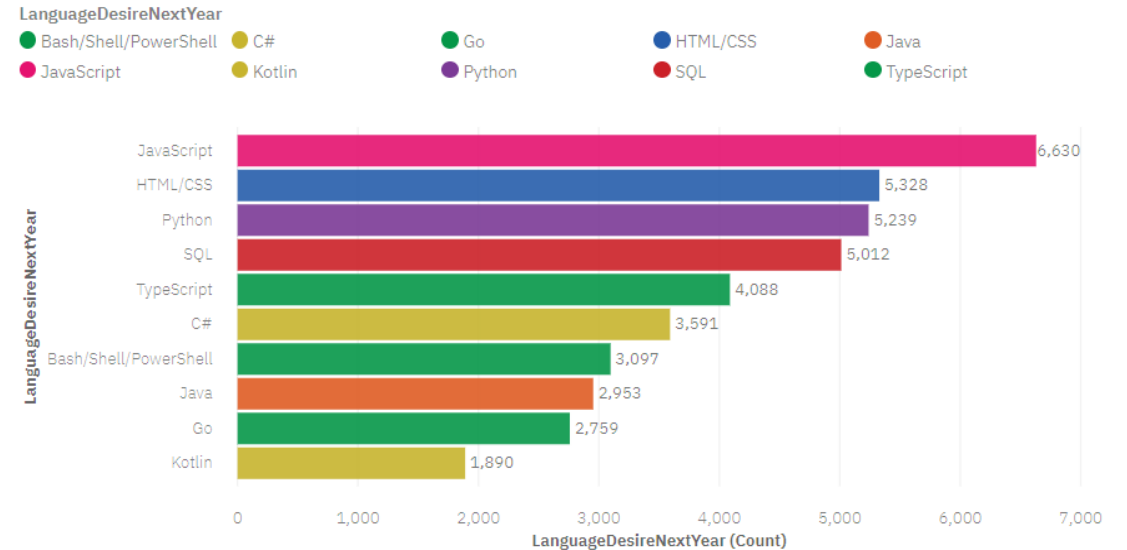3. Demographics

PROGRAMMING LANGUAGE TRENDS
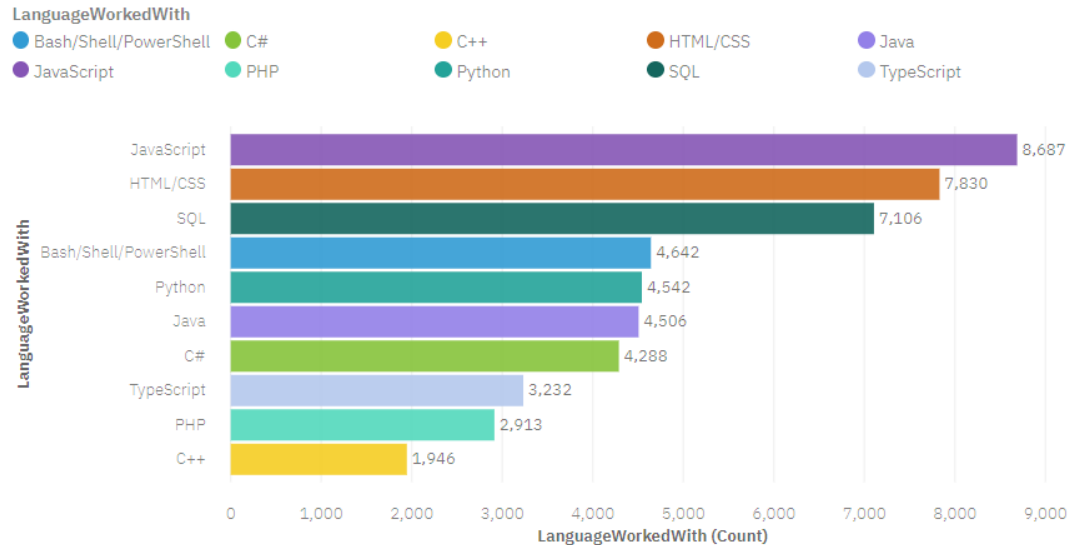
Current Year

Next Year

PROGRAMMING LANGUAGE TRENDS - FINDINGS & IMPLICATIONS

Findings

- Java and HTML/CSS will remain in trend as the most used.
- Python shows significant increase in the upcoming year
- Languages like C++ and PHP are disappearing from the Top 10

Implications

- Web-based programming languages will remain in the top trend.
- Developers might migrate from JavaScript to TypeScript in the upcoming years.
- Legacy languages like C++ and PHP are falling out of interest.

IBM **Dev**eloper

SKILLS NETWORK

DATABASE TRENDS

Current Year

Next Year

DATABASE TRENDS - FINDINGS & IMPLICATIONS

Findings

- MySQL is the most used database currently

- PostgreSQL and MongoDB shows significant increase in trends as they lead on top in the upcoming year trend.

- Microsoft SQL Server shows significant decrease in trend.

Implications

- PostgreSQL and MongoDB will be in high demand in the upcoming years.

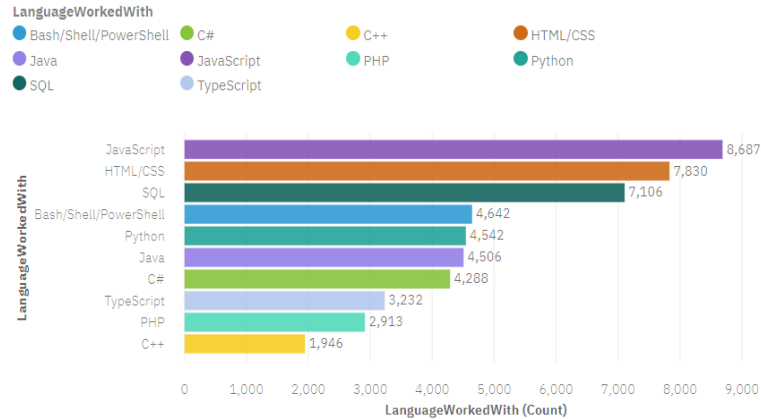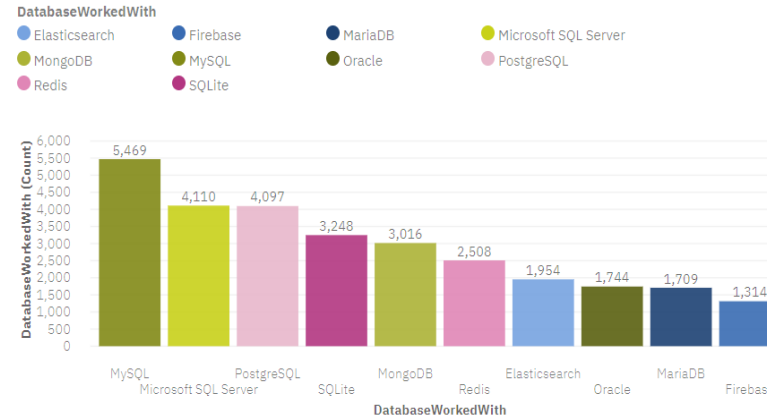- Redis and Elasticsearch will take over SQLite and Microsoft SQL Server.

IBM Developer

SKILLS NETWORK

DASHBOARD

Link to IBM Cognos Dashboard
Click Here

DASHBOARD TAB 1
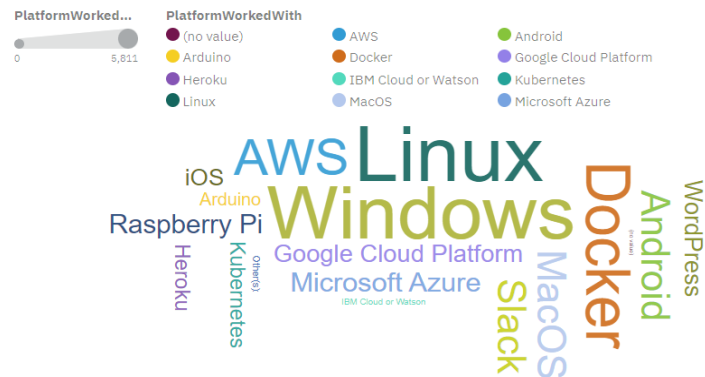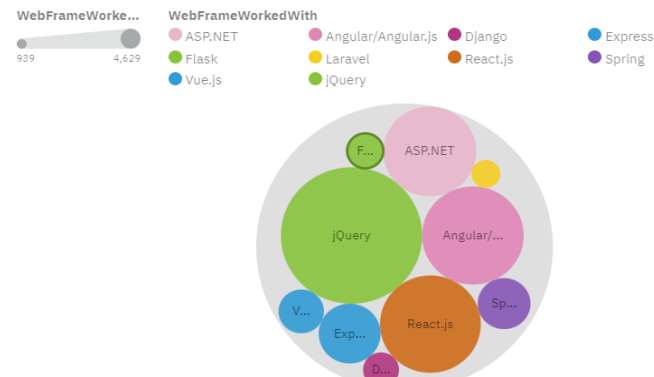
DASHBOARD TAB 2

Top 10 Languages Desired for Next Year

LanguageDesireNextYear
- ● Bash/Shell/PowerShell
- ● C#
- ● Go
- ● HTML/CSS
- ● Java
- ● JavaScript
- ● Kotlin
- ● Python
- ● SQL
- ● TypeScript
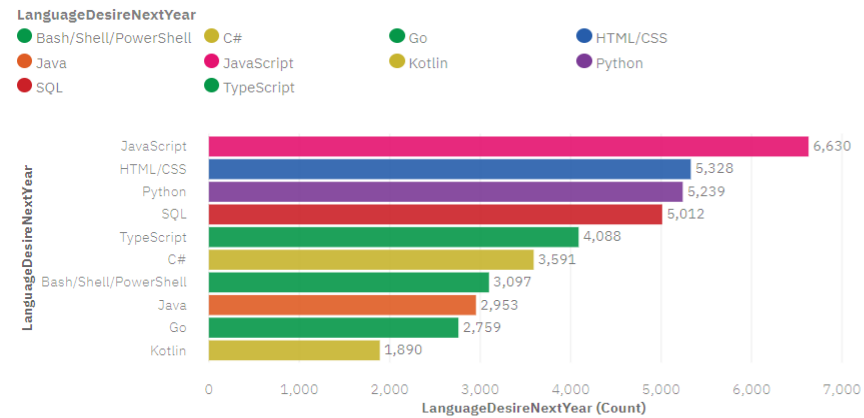
Top 10 Databases Desired for Next Year

DatabaseDesireNextYear
- ● DynamoDB
- ● Elasticsearch
- ● Firebase
- ● MariaDB
- ● Microsoft SQL Server
- ● MongoDB
- ● MySQL
- ● PostgreSQL
- ● Redis
- ● SQLite
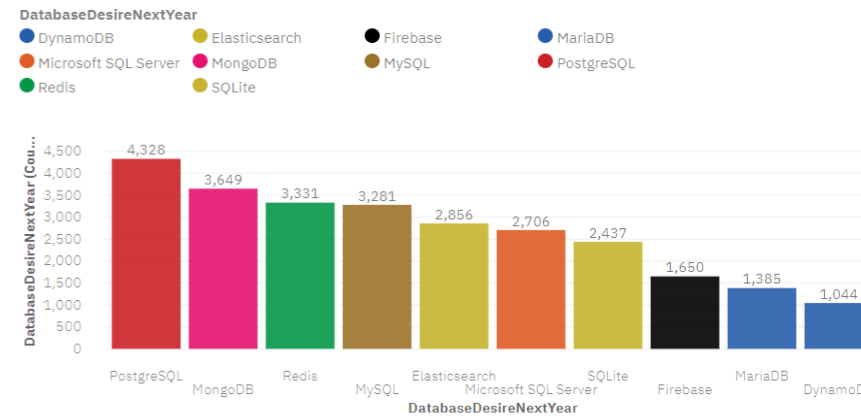
Platforms Desired Next Year by Respondents

PlatformDesireN...   PlatformDesireN...
0   5,865   0   5,865
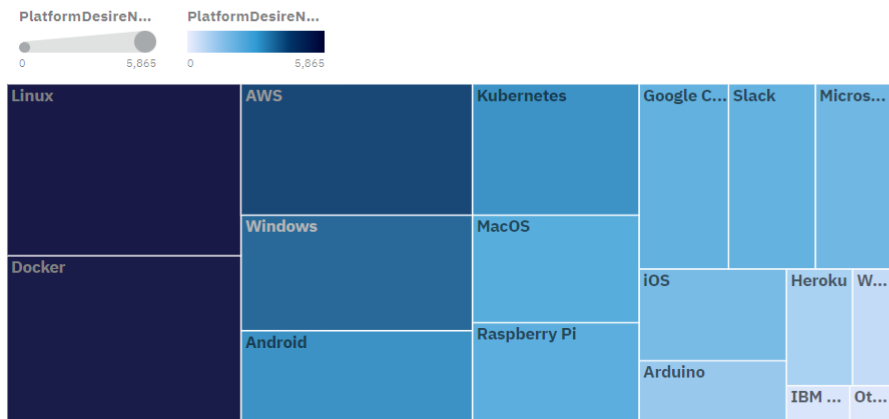
Top 10 Web Frames Desired for Next Year
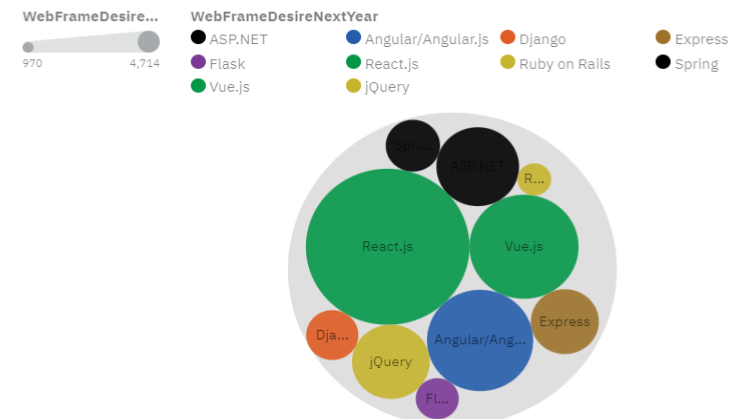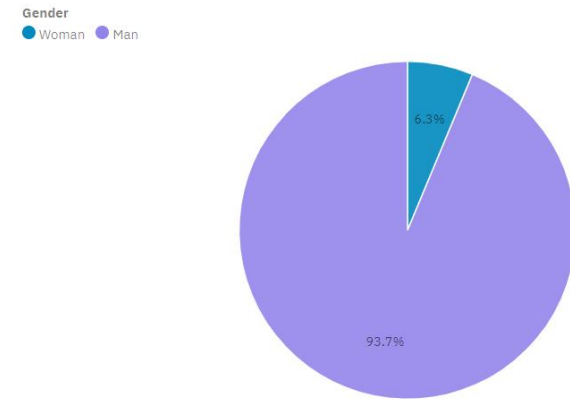
WebFrameDesire...   WebFrameDesireNextYear
970   4,714
- ● ASP.NET
- ● Angular/Angular.js
- ● Django
- ● Express
- ● Flask
- ● React.js
- ● Ruby on Rails
- ● Spring
- ● Vue.js
- ● jQuery

IBM Developer

SKILLS NETWORK

DASHBOARD TAB 3
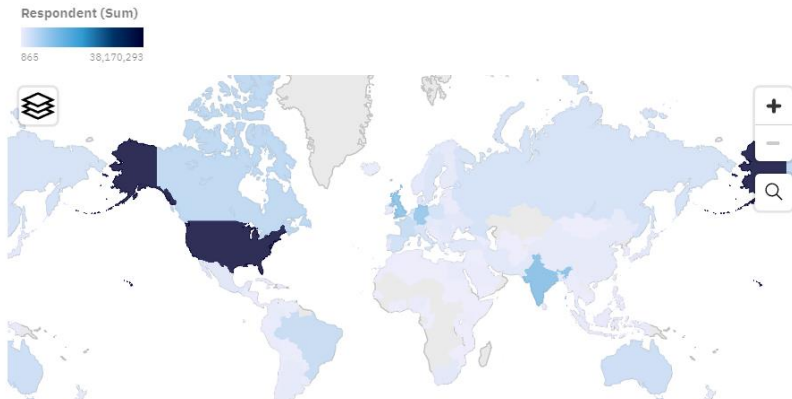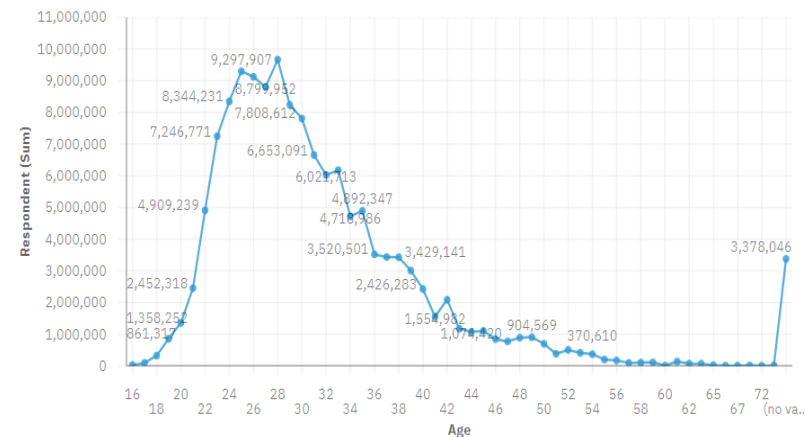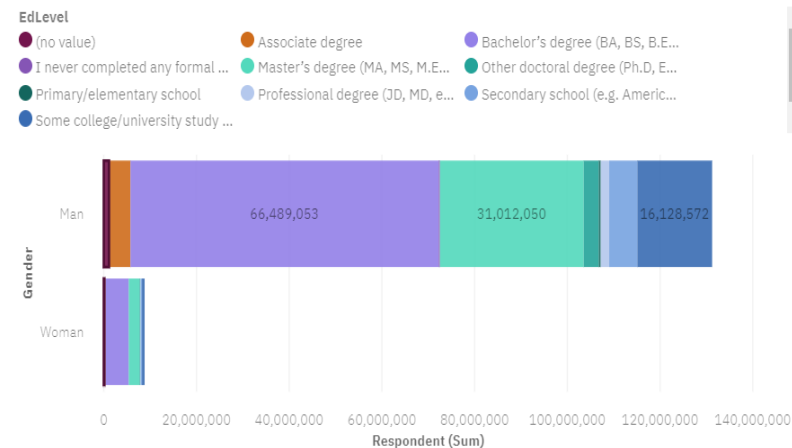
DISCUSSION

- Current and Future Technology Trends

- Participation of Females in the IT fields

- Variations in technology in different countries

- Discrimination based on age and educational qualifications in case of employment

OVERALL FINDINGS & IMPLICATIONS

Findings

- Rapid changes in technology year by year
- Gender gap in the IT field
- Web-based programming languages are running in high demand

Implications

- Companies need to adapt to the rapid changes in technologies
- Technologies need to be promoted more in countries that are lagging behind.
- Shift to cloud based applications

IBM **Dev**eloper
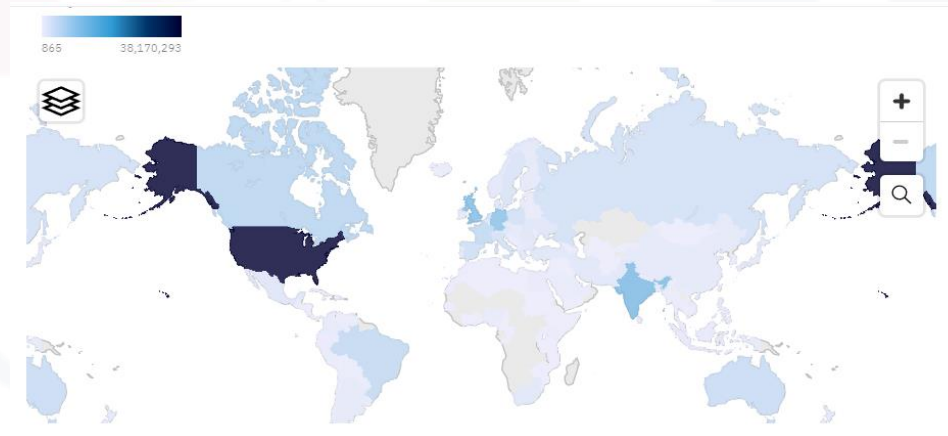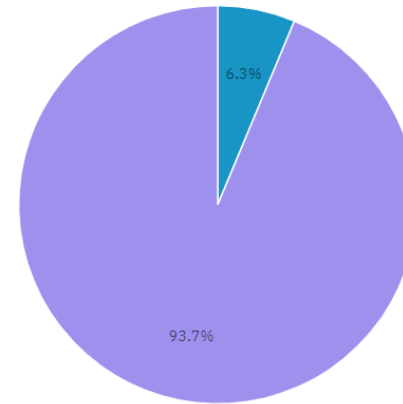
SKILLS NETWORK

CONCLUSION

- To keep up with the fast and growing changes in technology, it is important to be more familiar with web-based languages and non-relational databases.

- As per the demographics survey, USA and India have more contribution in the IT field.

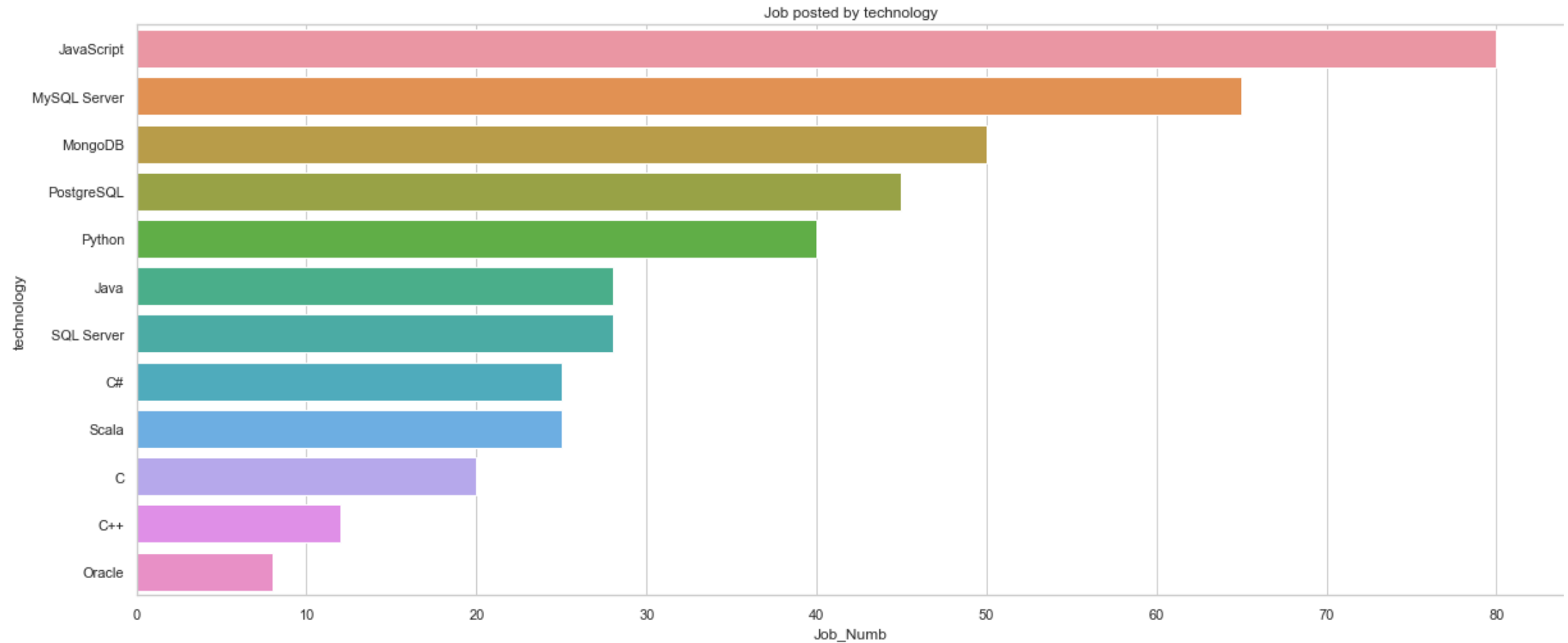- Companies are preferring younger employees for employments.

APPENDIX

Respondent % By Gender

Gender
● Woman ● Man

6.3%

93.7%

865   38,170,293

IBM Developer

SKILLS NETWORK

JOB POSTINGS

POPULAR LANGUAGES

Average Annual Salary by Language