



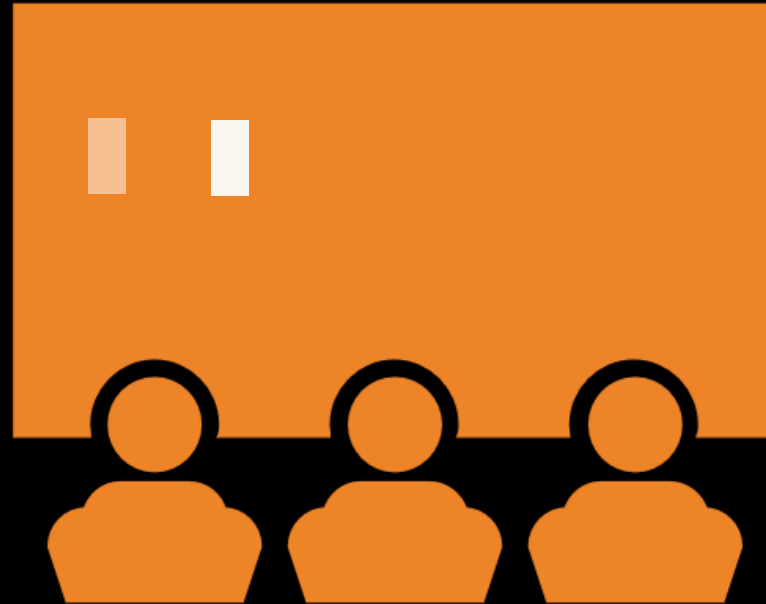
ANALYZING EMERGING TECHNOLOGY AND SKILLS TREND

Barrett Jessop

29th August 2024

OUTLINE

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



EXECUTIVE SUMMARY



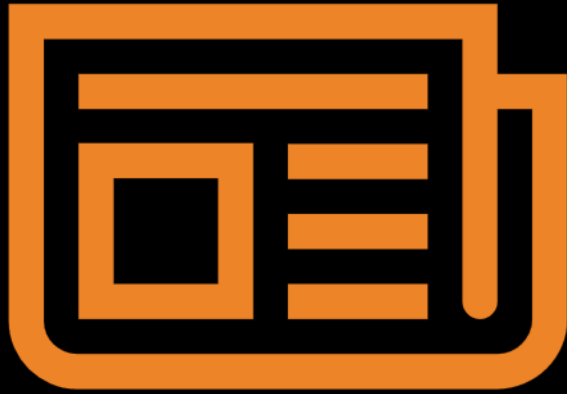
- ❖ **Staying Competitive in the IT Industry**
- ❖ **Study Overview:**
 - Utilizes data analytics and spotlights present and projected trends in coding languages, databases, and tech areas.
 - Dives into demographics of technology professionals
- ❖ **Data Sources:**
 - Stack Overflow survey, IBM website, J and ob postings on Github
- ❖ **Data Analysis Process:**
 - Collection -> Cleaning -> Exploratory Analysis -> Visualization through Dashboards
- ❖ **Key Findings:**
 - JavaScript reigns as the most popular programming language and it is also most sought out in the future
 - MySQL is currently the most utilized database. While, demand for PostgreSQL is expected to increase.
- ❖ **Demographics of Technology Professionals:**
 - Majority is male and belongs to the USA with an average age of 28 years old.

INTRODUCTION



- ❖ This analytical presentation dives into the contemporary and prospective trajectories of skill demand within the realms of programming languages, databases, platforms, and web frameworks, utilizing the tools of data analytics.
- ❖ The inquiry pursued within this study encompasses several pivotal questions:
 - Which programming languages currently command the highest demand?
 - What constitutes the most sought-after database proficiencies?
 - Which prevailing integrated Development Environments (IDEs) or web frameworks is famous?
- ❖ With an intended audience spanning IT professionals, HR managers, and individuals with a vested interest in the IT sector, this research endeavors to elucidate the premier, future-proof IT competencies within their respective domains of expertise.

METHODOLOGY



- ❖ **Data Collection:**

- Gathered survey and website data through web scraping and APIs using the Request library in Python.

- ❖ **Data Wrangling:**

- Performed data wrangling tasks such as remove unnecessary separators, handling missing values either by removing them or using other criterions.

- ❖ **Exploratory Data Analysis:**

- Analyzed data distribution, handling outliers, and identifying correlation.

- ❖ **Data Visualization:**

- Visualized the collected data to highlight distribution, relationships, composition, and comparisons using various visualization techniques.

- ❖ **Dashboards:**

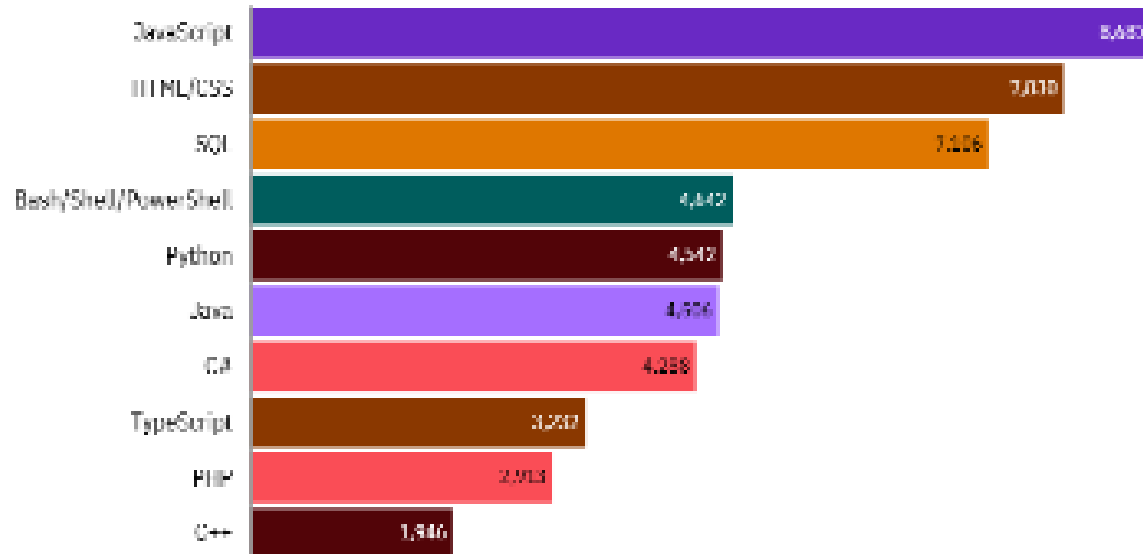
- Developed interactive dashboards to present the analyzed data in a user-friendly and insightful manner.

RESULTS

PROGRAMMING LANGUAGE TRENDS

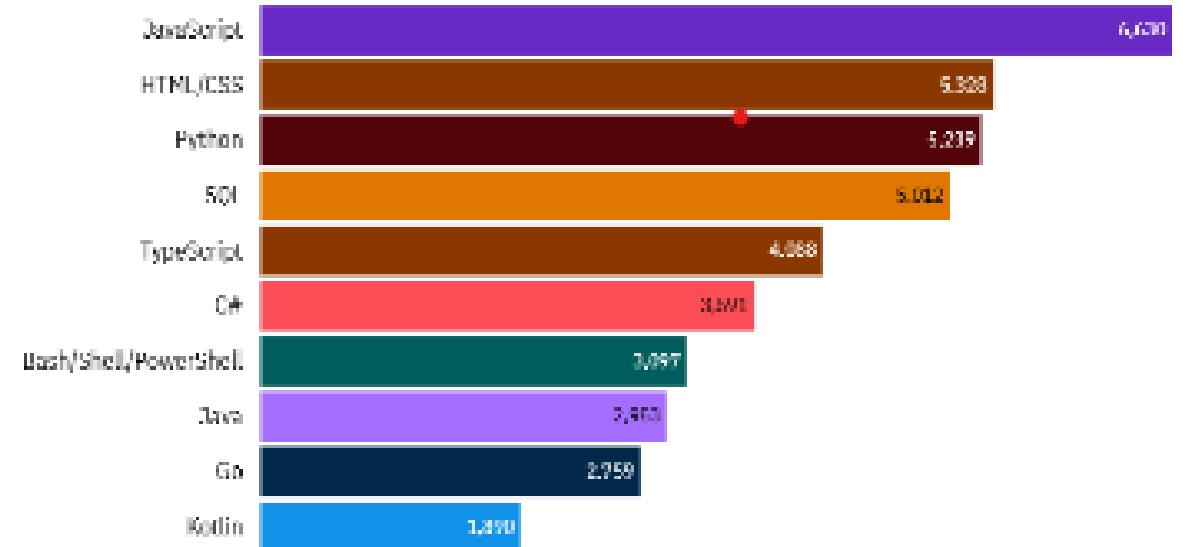
Current Year

Top 10 Languages Worked with Based on Usage



Next Year

Top 10 Most Desired Languages for the Next Year



PROGRAMMING LANGUAGE TRENDS - FINDINGS & IMPLICATIONS

Findings:

- ❖ Currently, the most famous languages are HTML/CSS, JavaScript, SQL, Python, and Shell Languages.
- ❖ JavaScript, HTML/CSS, Python, SQL, and TypeScript are the most desired languages for the future.
- ❖ Python is growing at a faster pace than SQL.

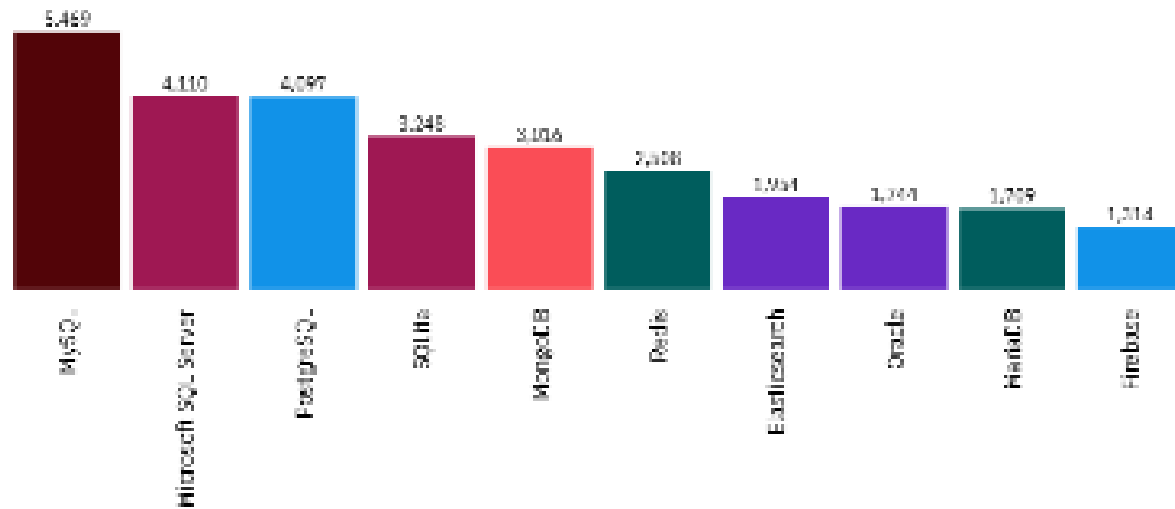
Implications:

- ❖ JavaScript and HTML/CSS are popular due to the high demand of web development. Also, TypeScript is getting attention of masses.
- ❖ Python growth is associated with Artificial Intelligence and Machine Learning. Modeling and model training is quite fast with it.
- ❖ SQL, despite losing its demand to Python in future, is still valuable for Data Professionals like Data Analysis, Data Scientists, etc.

DATABASE TRENDS

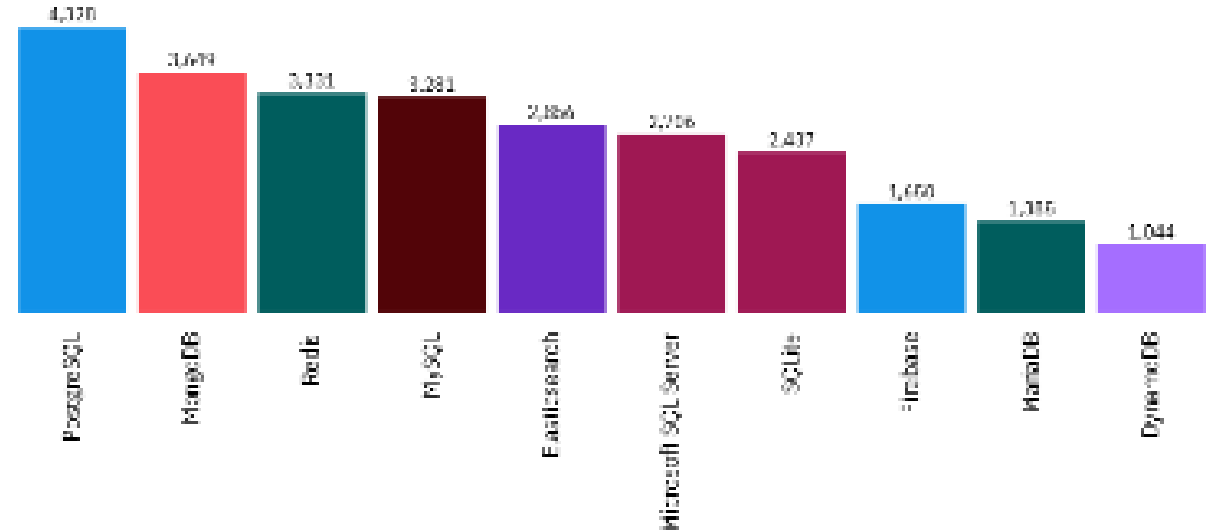
Current Year

Top 10 Databases Worked with Based on Usage



Next Year

Top 10 Most Desired Databases for the Next Year



DATABASE TRENDS - FINDINGS & IMPLICATIONS

Findings:

- ❖ My SQL is the most preferred database currently.
- ❖ Demand for Microsoft SQL Server and SQLite is declining.
- ❖ PostgreSQL and MongoDB are most desired in the future.

Implications:

- ❖ Microsoft SQL Server and SQLite are losing the market attention leading to decline in their utility.
- ❖ PostgreSQL and MongoDB has captured the market attention which leads them as market most desired in the near future.

DASHBOARD

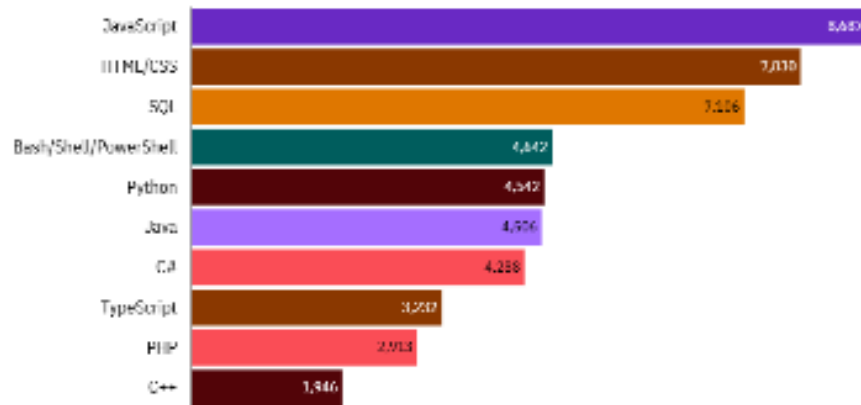


[IBM-Data-Analyst-Capstone-Project/IBM Capstone Project Building A Dashboard.pdf at main · bjesso15/IBM-Data-Analyst-Capstone-Project \(github.com\)](#)

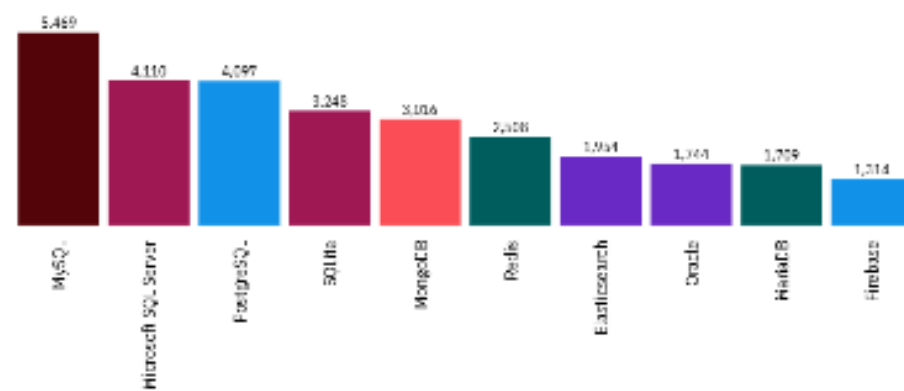
CURRENT TECHNOLOGY USAGE DASHBOARD

Current Technology Usage

Top 10 Languages Worked with Based on Usage



Top 10 Databases Worked with Based on Usage



Platforms Based on Usage



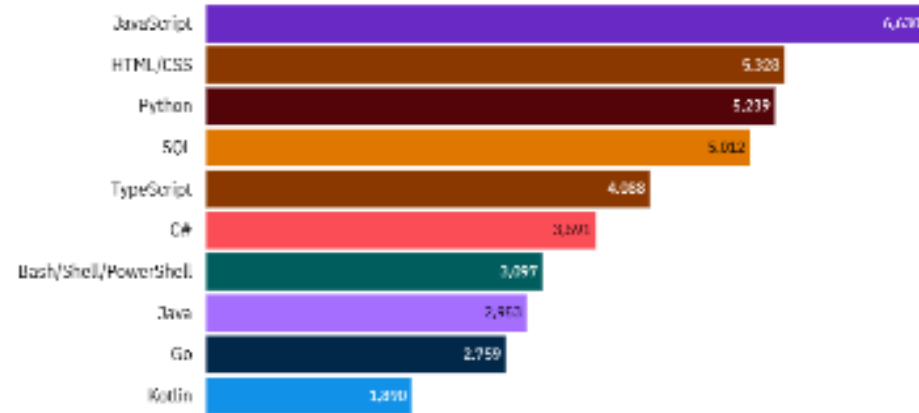
Top 10 Web Frames Based on Usage



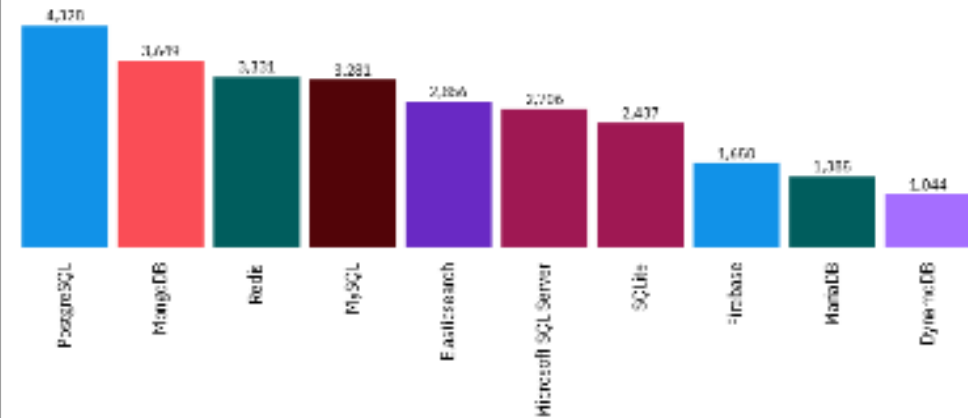
FUTURE TECHNOLOGY TREND DASHBOARD

Future Technology Trend

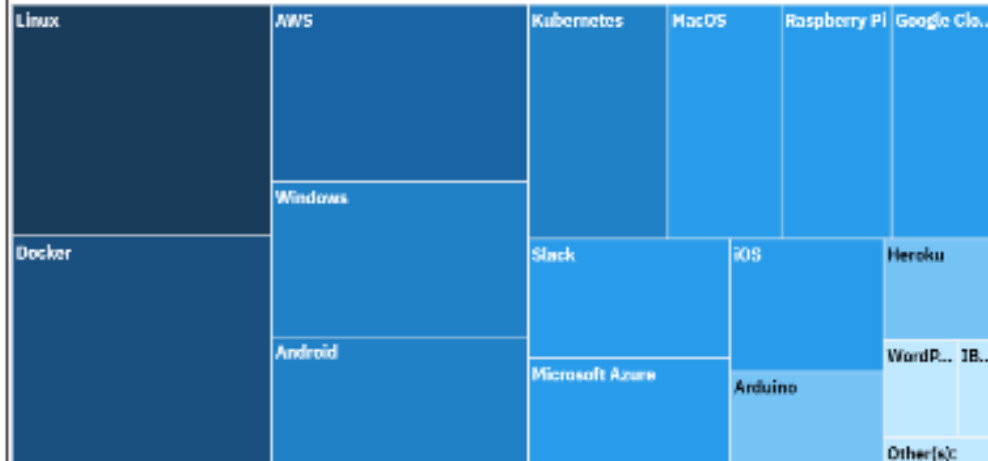
Top 10 Most Desired Languages for the Next Year



Top 10 Most Desired Databases for the Next Year



Platforms Desired for the Next Year



Top 10 Web Frames Desired for the Next Year



DEMOGRAPHICS DASHBOARD

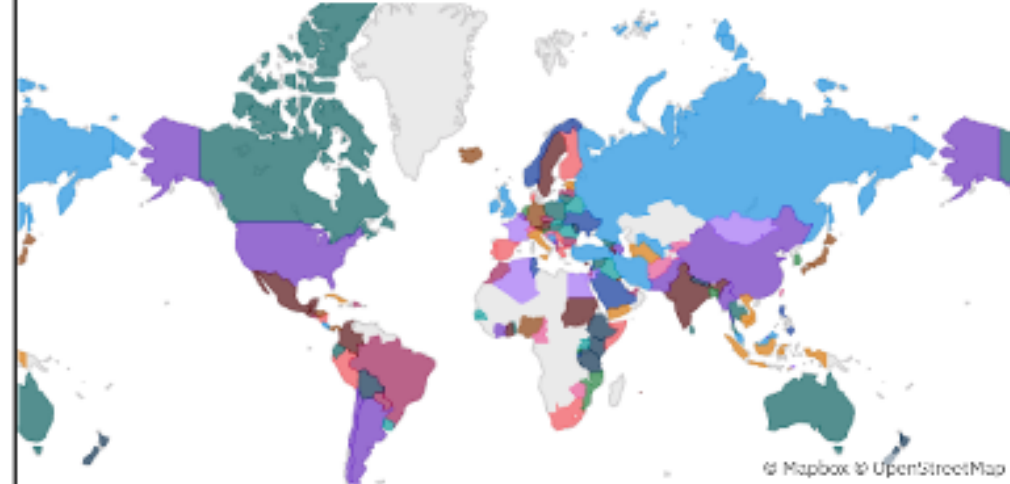
Demographics

Respondents by Gender

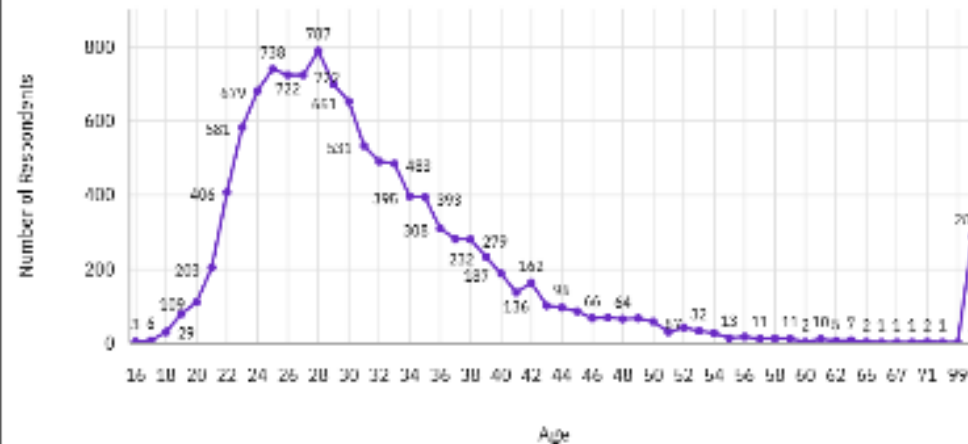
Gender
Woman Man



Respondent Count for Countries



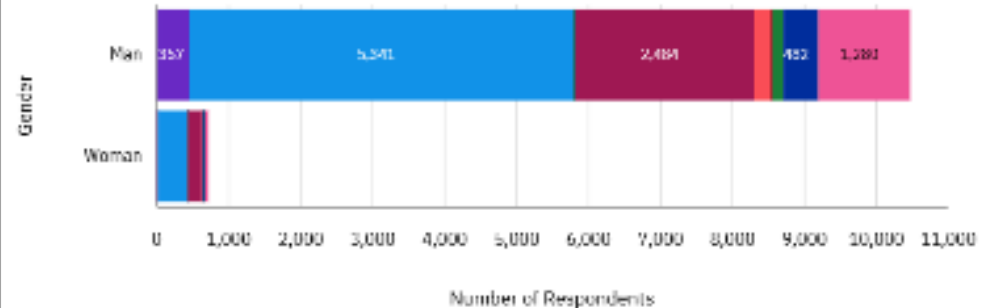
Respondent Count by Age



Respondents by Gender Based on Education Level

EdLevel

(no value) Associate degree Bachelor's degree (BA, BS, B.Lng...
I never completed any formal edu... Master's degree (MA, MS, M.Lng... Other doctoral degree (Ph.D., Ed.D...
Primary/elementary school Professional degree (JD, MD, etc.) Secondary school (e.g. American ...
Some college/university study wit...



DISCUSSION



- ❖ Evolution is a sure thing even for developers.
- ❖ There is huge gender gap in the technology sector which needs to be minimized.
- ❖ Most of the developers have undergraduate degrees.
- ❖ Kotlin is getting more fame due to the rise in demand for mobile app development.
- ❖ Some of the currently used languages and databases may not be relevant in the future as they are today.

OVERALL FINDINGS & IMPLICATIONS

Findings:

- ❖ Most of the developers are located in the developed countries.
- ❖ More than 90% of developers are young males.
- ❖ JavaScript is widely used and TypeScript is getting more famous with every passing day.

Implications:

- ❖ Less developed countries need to pay more attention on tech education and skills upbringing.
- ❖ There is huge global polarization of developers on the basis of gender and geography.
- ❖ Developers will have huge work opportunities in Web Development in the future. That's why JavaScript and TypeScript are the most sought out languages.

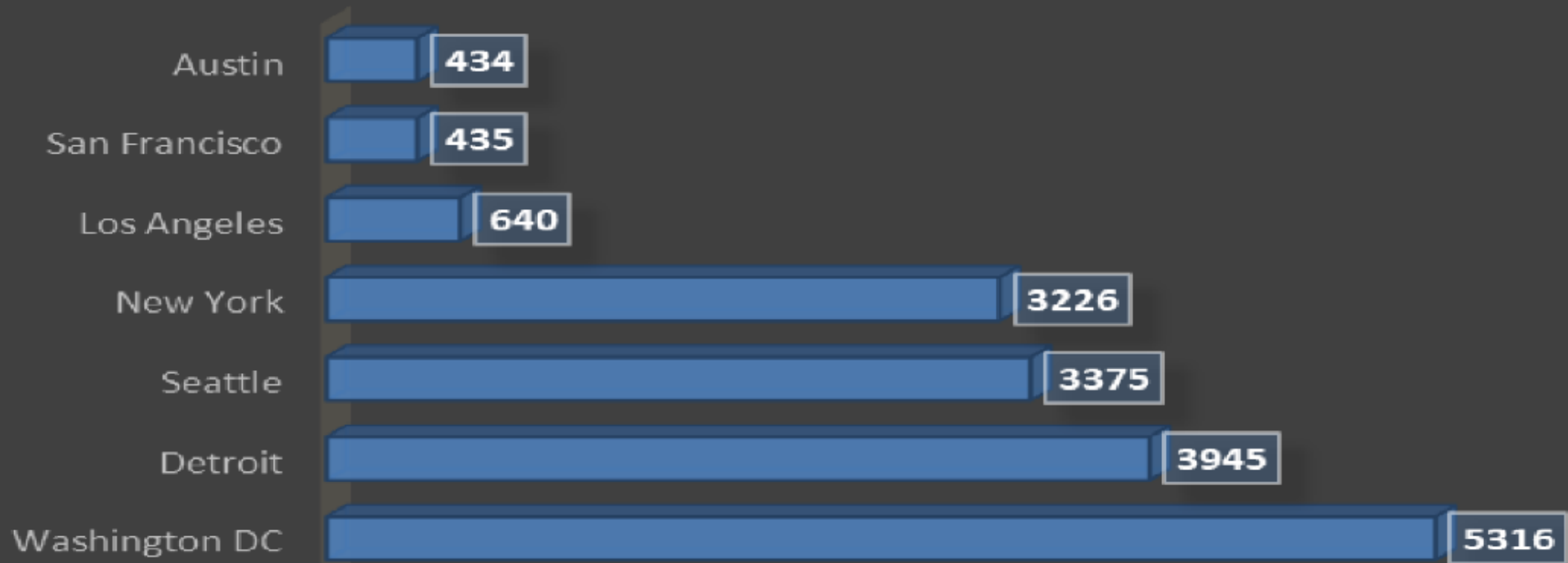
CONCLUSION



- Change is inevitable and the reason for upgradation of skills of developers.
- The market is getting diversified everyday.
- Web Development is a quite lucrative field even in the future.
- A Masters is not quite necessary as most of the developers have bachelors degrees.

JOB POSTINGS

NUMBER OF JOBS



POPULAR LANGUAGES

Number of Jobs

