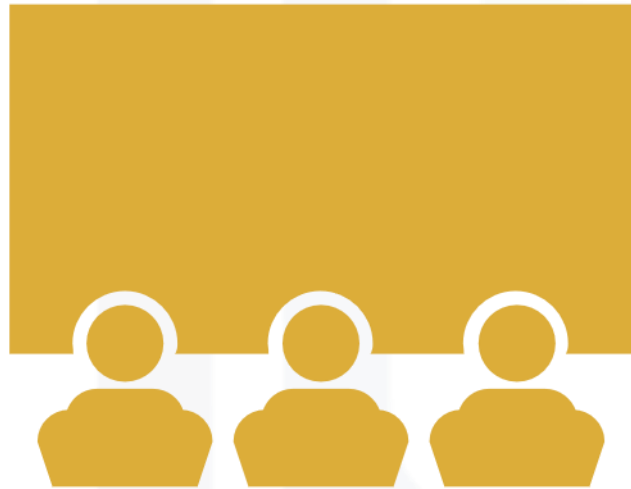




Technology Trends: Current & Future

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July-01-2024

OUTLINE



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

EXECUTIVE SUMMARY



- **Data Contextualization and Analysis**
- **Methodology Description**
 - Data Gathering
 - Data Analysis
 - Data Visualization
- **Results presentation with supported Graphs and Trends**
 - Trends in Programming Languages Usage, Database Usage, Platform Popularity and Trends in Web-Frames
- **Discussions on overall findings and implications**
- **Conclusions**

INTRODUCTION



- **About:** Analyze the Current and Future Trend in Software Development based on 2019 Stack Overflow's Survey on Developers around the World.
- Survey do not represent all developers
- **Purpose:**
 - Identifying Current trends
 - Identifying Future Trends
 - Analyzing Gender Gap
- **Audience:** IT and HR Heads & Team
- Trends predict where the developers are heading?


METHODOLOGY



- **Data Collection Sources**
 - Stack Overflow Developer 2019 Survey
 - Web Scraping
 - APIs
 - Request Library
- **Data Wrangling**
- **Exploratory Data Analysis**
 - Analyzing Data Distribution
 - Handling Outliers
 - Correlations
- **Data Visualization**
 - Data Distribution, Composition and Comparison
- **Presentation using Dashboards**

RESULTS

Screenshot of Survey Data used in this Research

 Respondent	LanguageWorkedWith	LanguageDe...eNextYear	DatabaseWorkedWith	DatabaseDe...eNextYear	PlatformWorkedWith	PlatformDesireNextYear	WebFrameWorkedWith	WebFrameD...eNextYear
4	C	C	MySQL	MySQL	Linux	Linux	Null	Null
4	C++	C#	SQLite	SQLite	Windows	Windows	Null	Null
4	C#	JavaScript	Null	Null	Null	Null	Null	Null
4	Python	SQL	Null	Null	Null	Null	Null	Null
4	SQL	Null	Null	Null	Null	Null	Null	Null
9	Bash/Shell/PowerShell	Bash/Shell/PowerShell	DynamoDB	PostgreSQL	AWS	AWS	Express	Express
9	C#	C	PostgreSQL	Redis	Docker	Docker	Ruby on Rails	Ruby on Rails
9	HTML/CSS	HTML/CSS	SQLite	SQLite	Heroku	Heroku	Other(s):	Other(s):
9	JavaScript	JavaScript	Null	Null	Linux	Linux	Null	Null
9	Python	Ruby	Null	Null	MacOS	MacOS	Null	Null
9	Ruby	Rust	Null	Null	Slack	Slack	Null	Null
9	Rust	SQL	Null	Null	Null	Other(s):	Null	Null
9	SQL	TypeScript	Null	Null	Null	Null	Null	Null

PROGRAMMING LANGUAGE TRENDS

Current Year

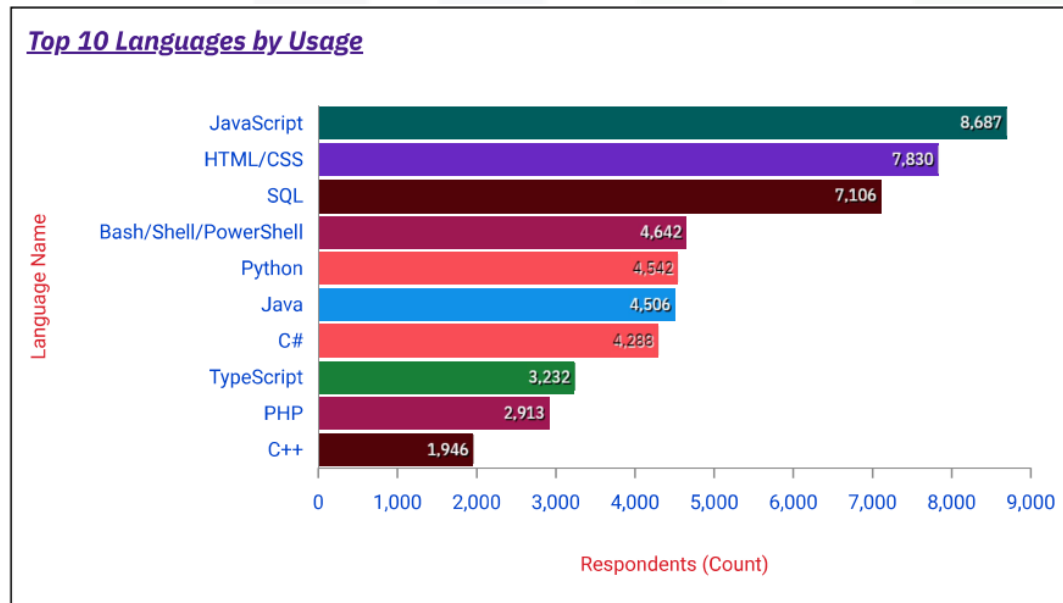


Fig. Bar chart of top 10 programming languages for the current year.

Next Year

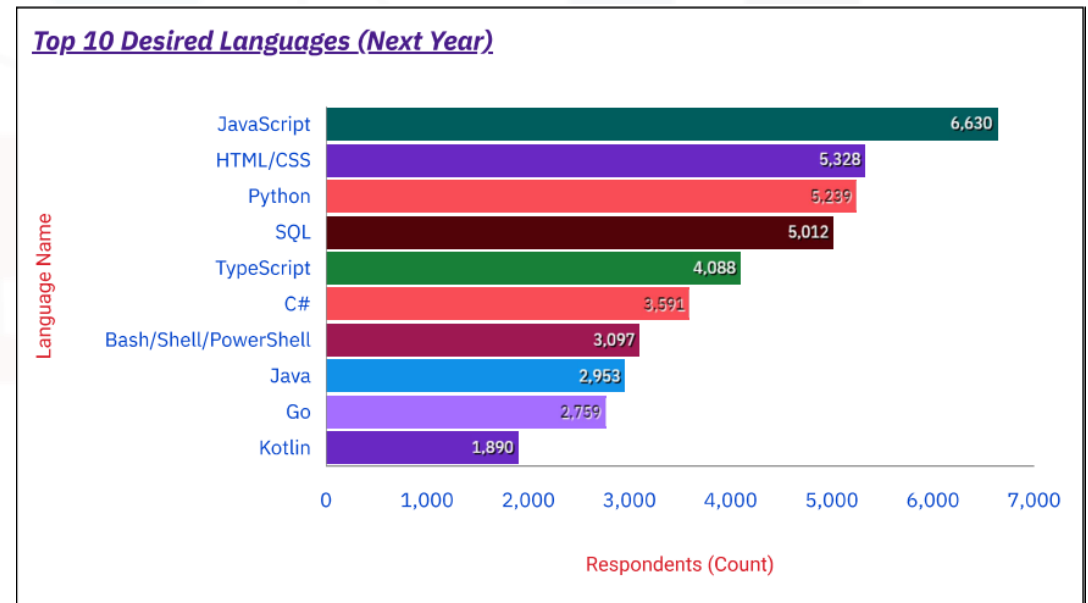


Fig. Bar chart of top 10 programming languages for the next year

PROGRAMMING LANGUAGE TRENDS - FINDINGS & IMPLICATIONS

Findings

- Top 3 Languages (Current Year): JavaScript, HTML/CSS, SQL
- Fastest Growing: Python & TypeScript
- Contenders: Go and Kotlin
- Significant Drop in Shell/PowerShell

Implications

- JavaScript & HTML/CSS will be in high demand despite decline in popularity.
- Python gaining popularity due to its capabilities in the field of AI, ML and Data Science
- Possible decline of Java.
- SQL is still required.

DATABASE TRENDS

Current Year

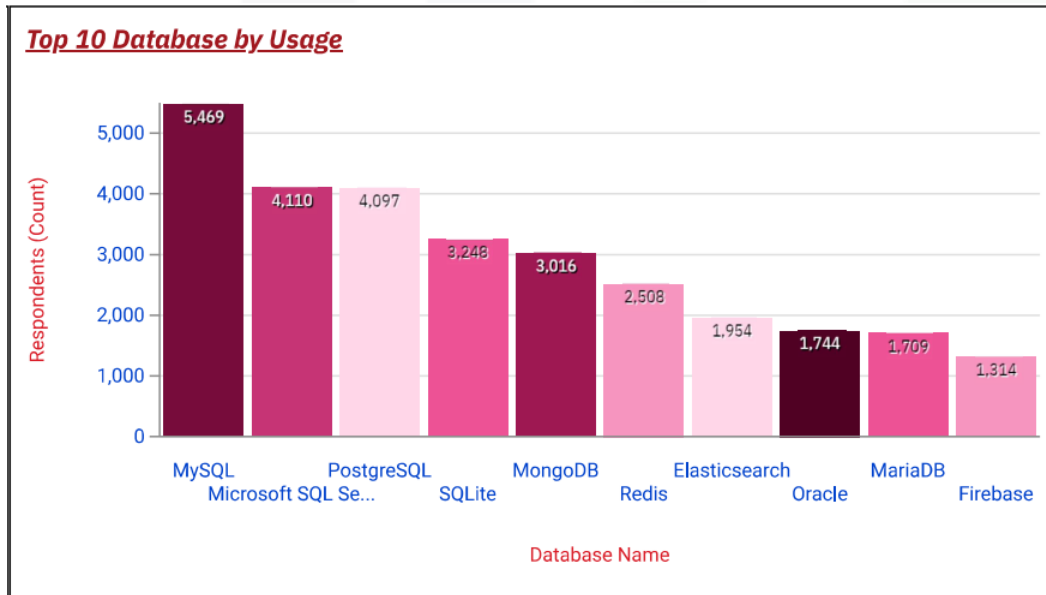


Fig. Bar chart of top 10 databases for the current year.

Next Year

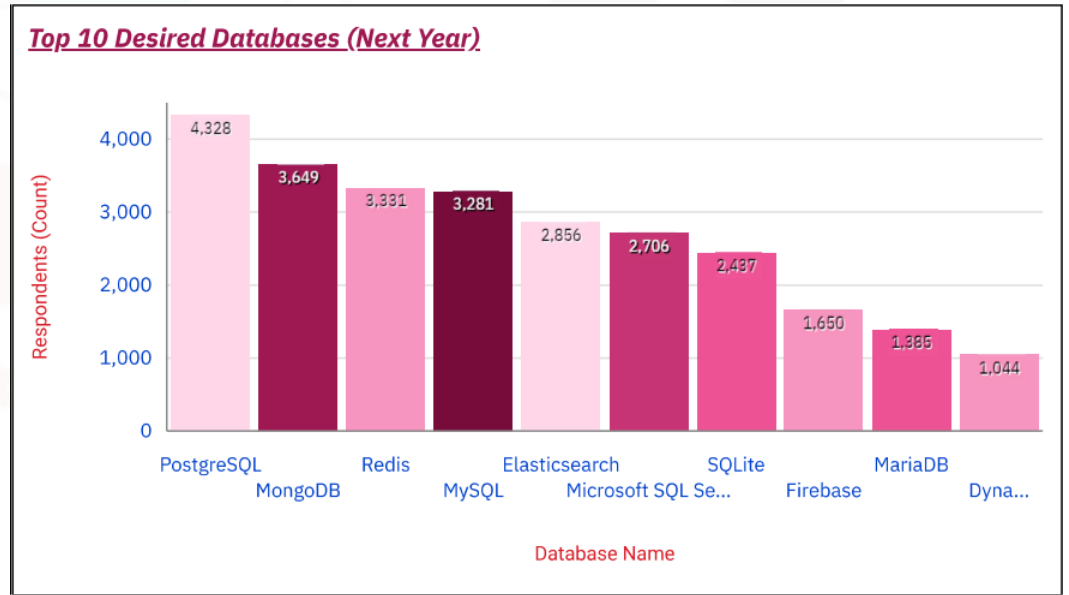


Fig. Bar chart of top 10 databases for the next year.

DATABASE TRENDS - FINDINGS & IMPLICATIONS

Findings

- MySQL & Microsoft SQL are most popular in current year.
- PostgreSQL, MongoDB, and Redis are fastest growing Databases.
- Interest on Microsoft SQL Server, SQLite, and Oracle is declining.

Implications

- Companies still prefer open-source databases.
- Microsoft SQL Server, and SQLite losing ground in the market.
- Oracle slipped below top 10 spots
- PostgreSQL and MongoDB will be best performing Databases in the market

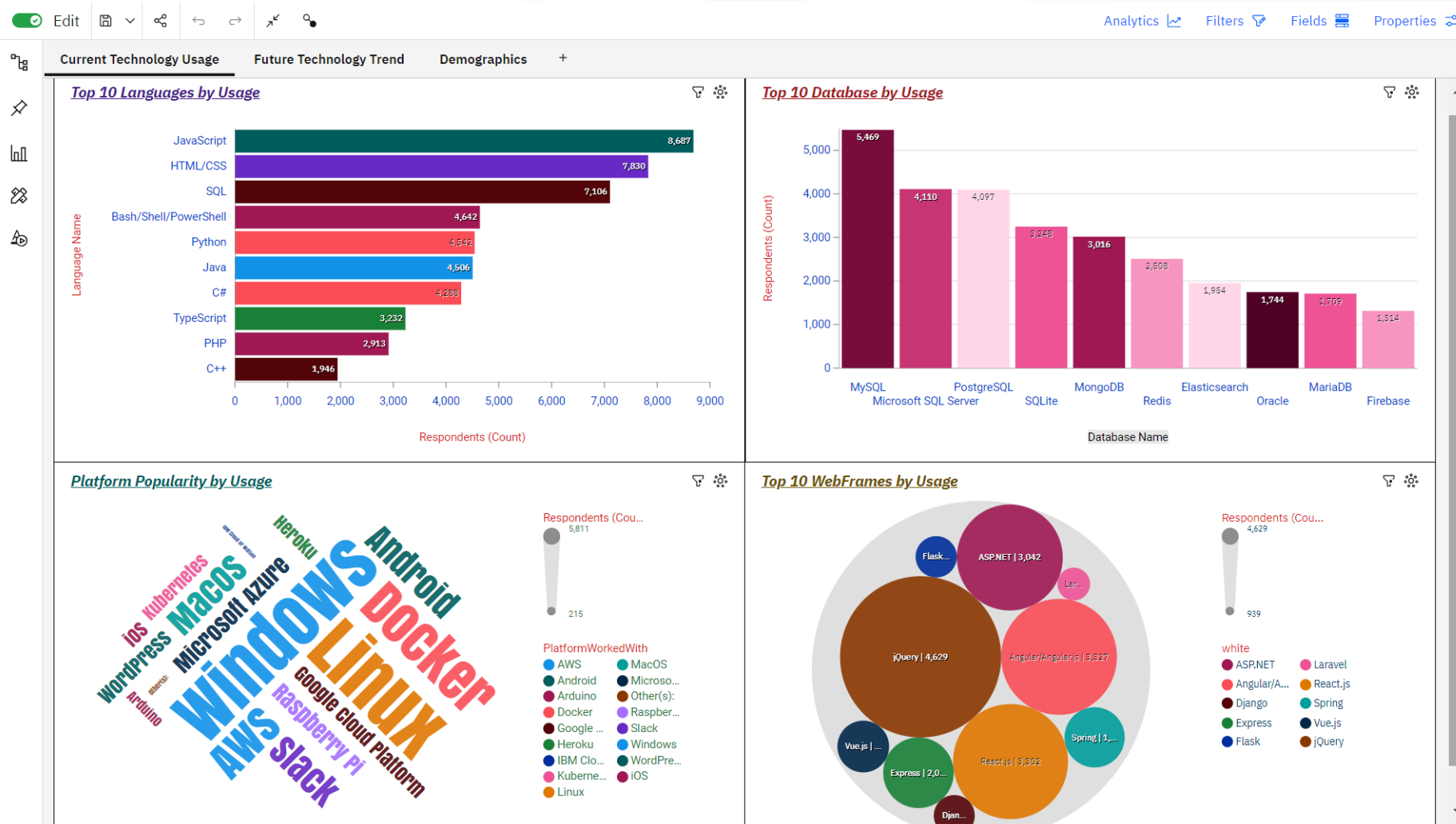
DASHBOARD



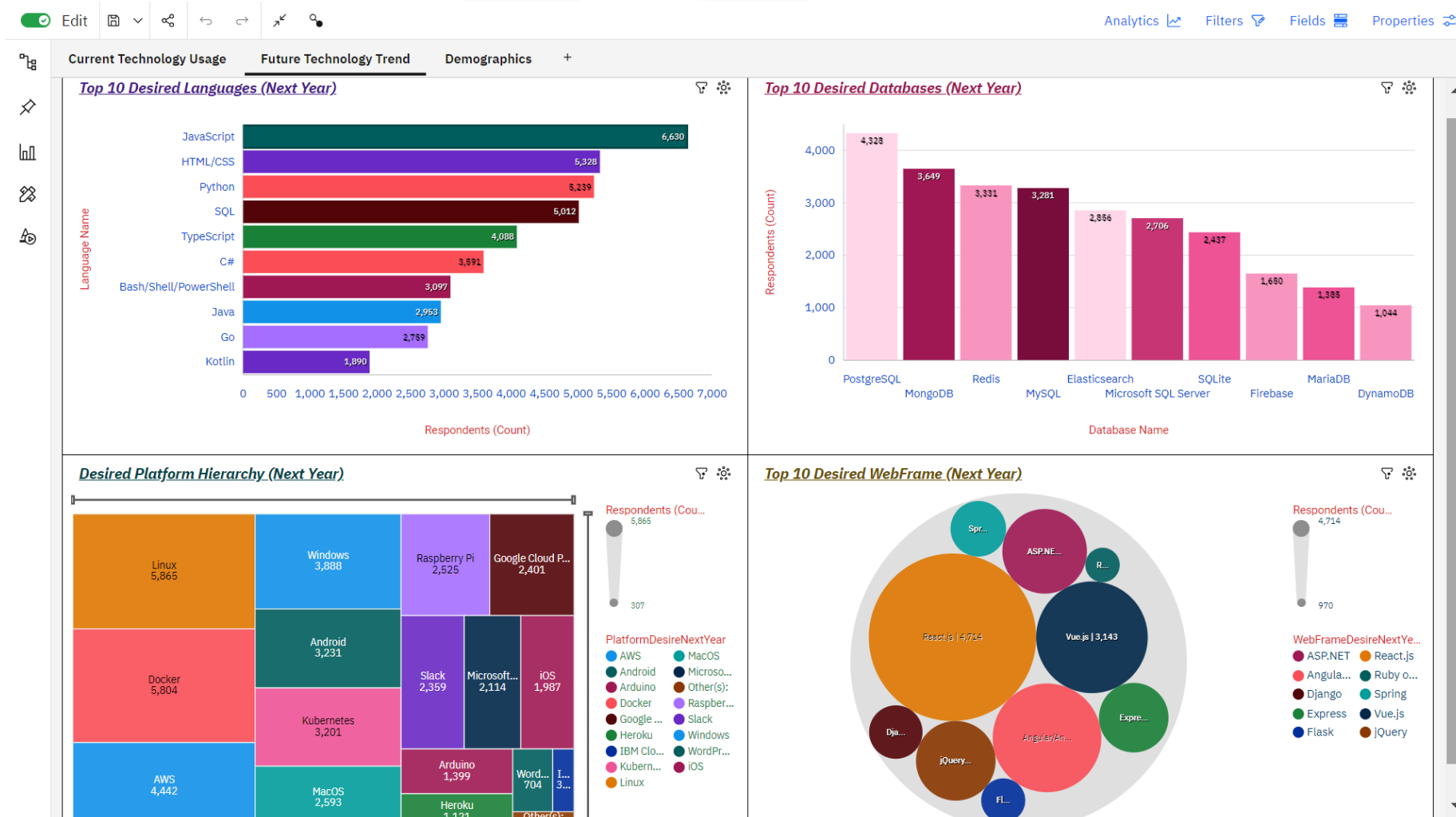
The following link will take you to Dashboard:

https://us1.ca.analytics.ibm.com/bi/?perspective=dashboard&pathRef=.my_folders%2FCapstone_DataAnalysis_Visualization&action=view&mode=dashboard&subView=model000001906965bb10_00000002

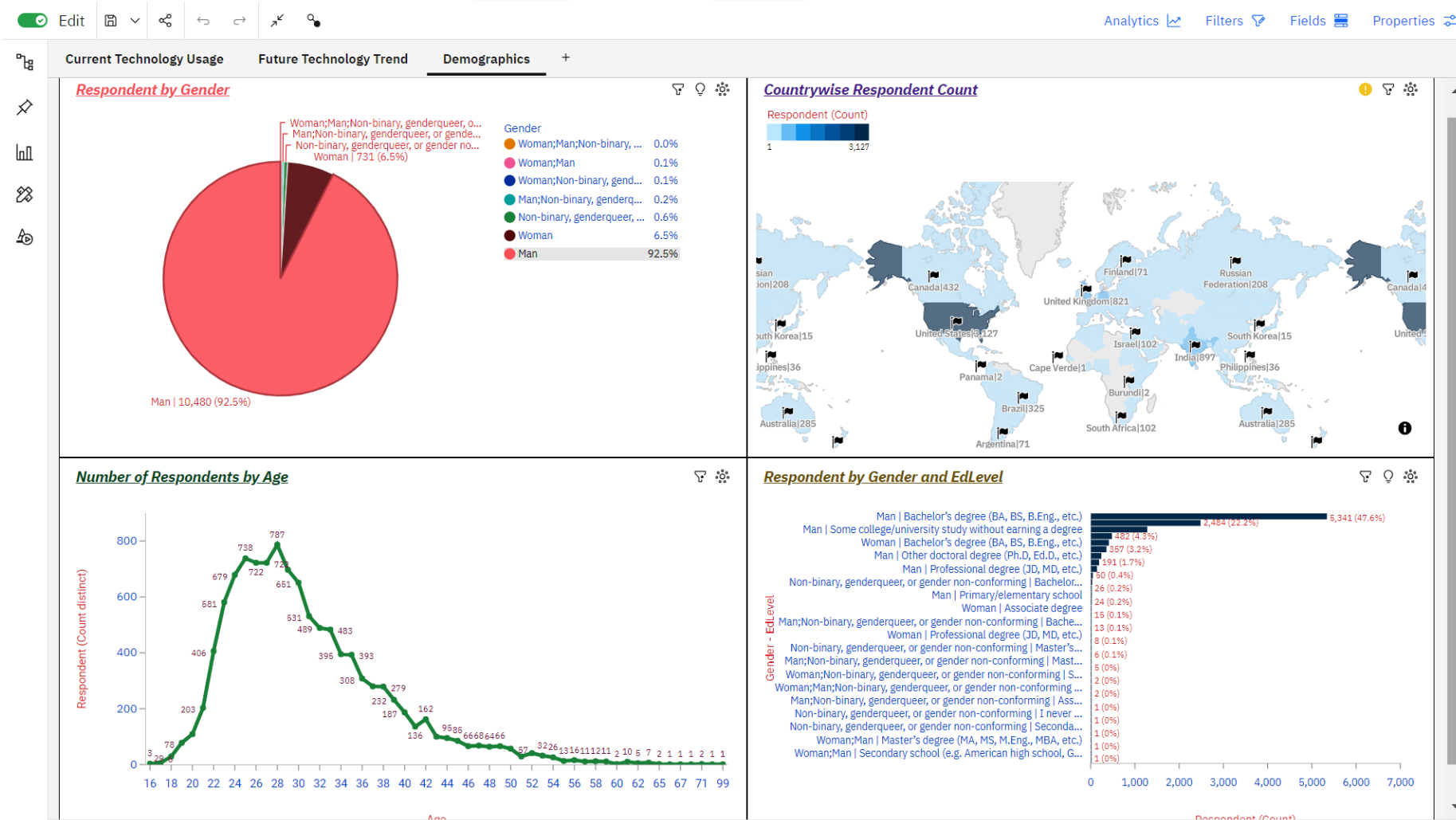
Current Technology Usage (Dashboard- Tab 1)



Future Technology Trend (Dashboard- Tab2)



Demographics (Dashboard - Tab 3)



DISCUSSION



- **Technology Trends Now & Next Year**
- **Training & Skill Upgrading Employees**
- **Female Participation**
- **Technology gaps in developing countries (Bridging)**
- **Age & Education**

OVERALL FINDINGS & IMPLICATIONS

Findings

- Technologies are changing Rapidly.
- Most of the Developers are Young Male (approx. 90%).
- Most of the developers are from developed countries like USA, and Developing countries like India.
- JavaScript is widely used and TypeScript growing in popularity.
- Vue.js and React.js are gaining more followers.

Implications

- Companies need to adjust rapid change.
- Spread & train people from developing and under developing countries.
- Shift to faster and efficient development environment.
- Increase thrust on addressing gender gap.
- Encourage women participation in technology.

CONCLUSION



- **Programming languages, Databases, Platform and Web Frame Overview**
- **Companies and people should adopt rapidly changing technologies.**
- **Efforts should be made for women participation.**
- **Focus more towards developing countries to prepare and train people for the job market**

APPENDIX



- **Include any relevant additional charts, or tables that you may have created during the analysis phase.**

JOB POSTINGS

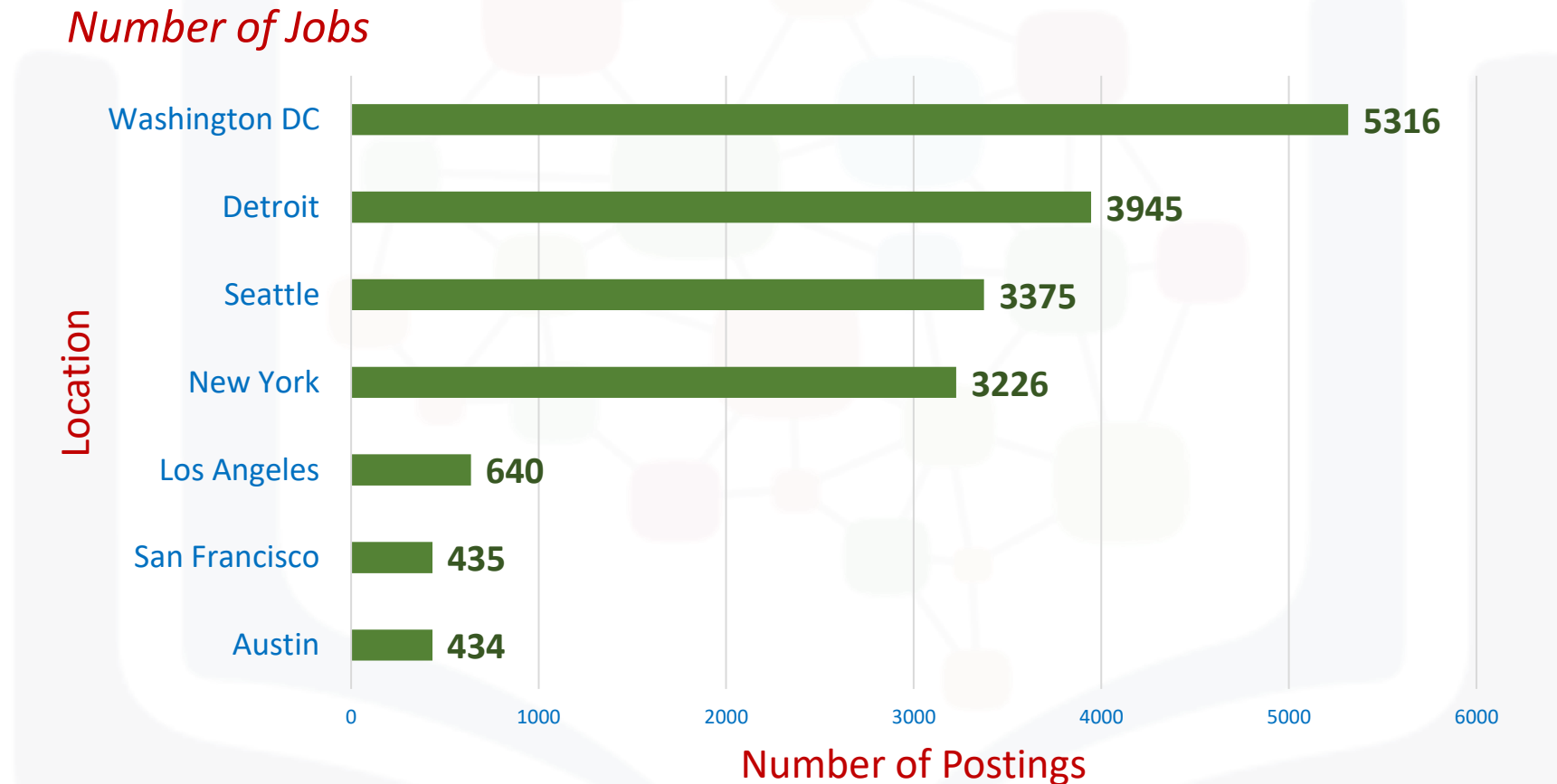


Fig. Bar chart order of the number of job postings.

POPULAR LANGUAGES

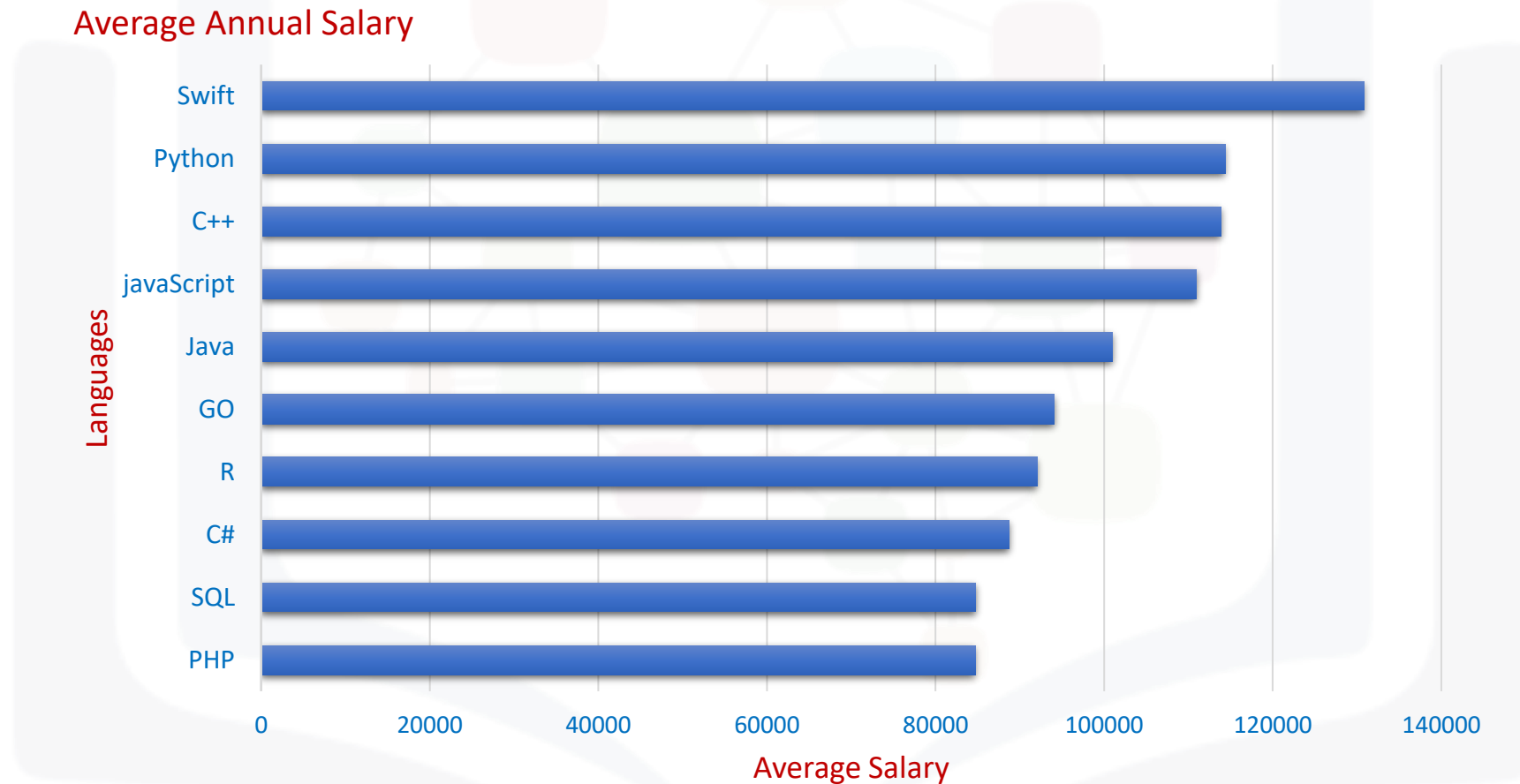


Fig. Bar chart of Popular Languages and salary.
IBM Developer