A Presentation of Technological And Demographic Trends

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SKILLS NETWORK

OUTLINE

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- Methodology
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- Discussion
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- Conclusion
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EXECUTIVE SUMMARY

- Technology trend analysis for databases and programming languages on key skills and location
- Compensation analysis based on gender and age
- Gender GAP analysis in jobs
- Trends on Programming languages and databases
- Technology and demographic trends on;
  - Countries
  - Gender
  - Age
  - Work experience

INTRODUCTION

- Data collection sources
  - Collected jobs data for analysis using GitHub API
  - Collected survey data for wrangling from stack overflow
  - Collected survey data from dashboard visuals from Kaggle survey 2023 data
  - GitHub job postings
- About: Analyze the trends in software development
- Purpose;
  - To identify future skill requirements
  - To know the top programming languages in demand
  - To identify the top database skills in demand
  - And the popular IDE
- Audience: Human Resource and IT Managers

METHODOLOGY

- Data Acquisition
  - Identifying data resources
  - Understanding data formats and structures
  - Data collection (e.g web scraping)
- Data Preparation
  - Data normalization, reduce redundancy, ensure data integrity
  - Data cleaning/wrangling.
  - Transformation of data through scaling
  - Data aggregation; grouping, sums, averages
- Modeling and Analysis
  - Select appropriate statistical methods
  - Finding the relationships between variables
- Create Visuals and communicate
  - Compelling visuals like charts, graphs
  - Communicate the story behind your findings to your audience

RESULTS

Respondent	LanguageWorkedWith	LanguageD...eNextYear	DatabaseWorkedWith	DatabaseD...eNextYear	PlatformWorkedWith	Platform
4	C	C	MySQL	MySQL	Linux	Linux
4	C++	C#	SQLite	SQLite	Windows	Window
4	C#	JavaScript	Null	Null	Null	Null
4	Python	SQL	Null	Null	Null	Null
4	SQL	Null	Null	Null	Null	Null
9	Bash/Shell/PowerShell	Bash/Shell/PowerShell	DynamoDB	PostgreSQL	AWS	AWS
9	C#	C	PostgreSQL	Redis	Docker	Docker
9	HTML/CSS	HTML/CSS	SQLite	SQLite	Heroku	Heroku
9	JavaScript	JavaScript	Null	Null	Linux	Linux
9	Python	Ruby	Null	Null	MacOS	MacOS

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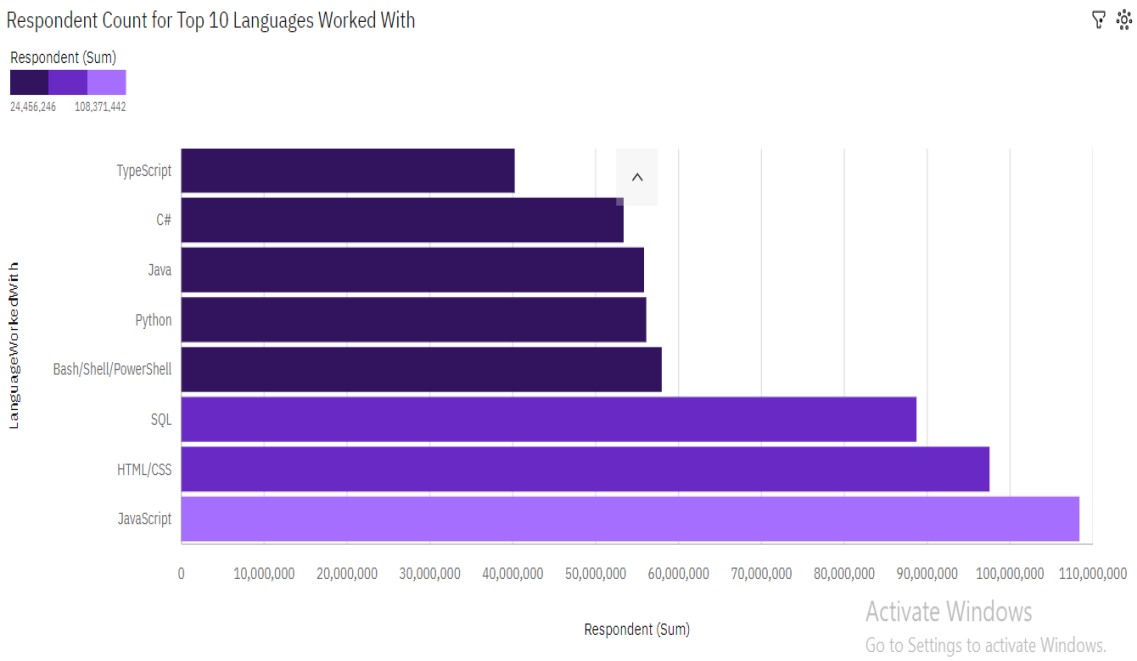
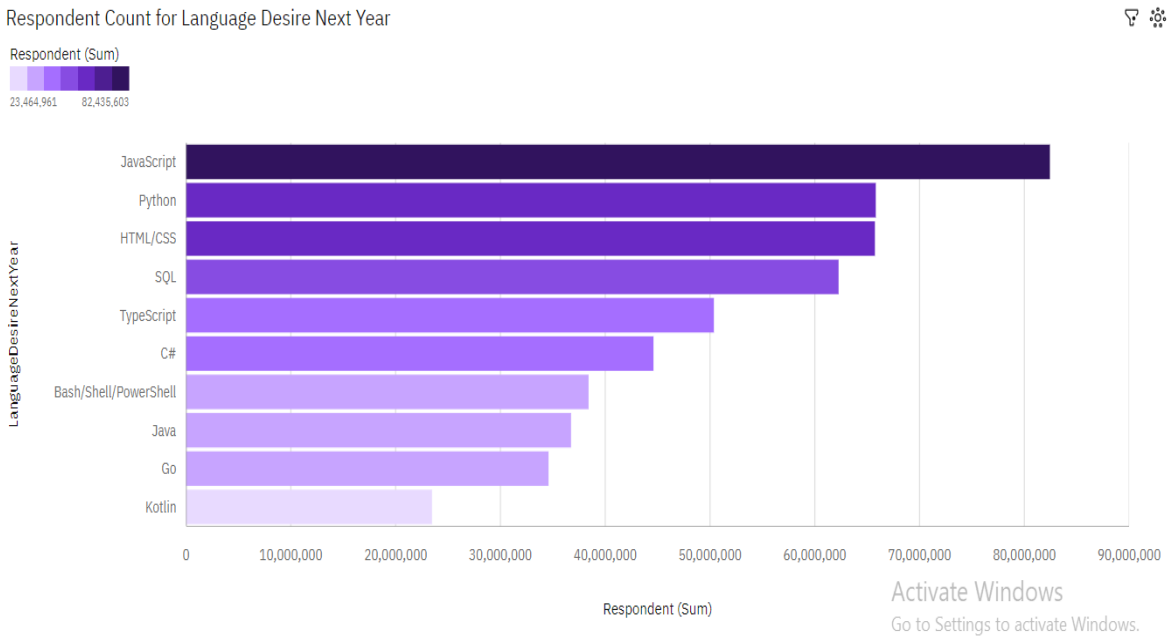
PROGRAMMING LANGUAGE TRENDS

Current Year



Next Year



PROGRAMMING LANGUAGE TRENDS - FINDINGS & IMPLICATIONS

Findings

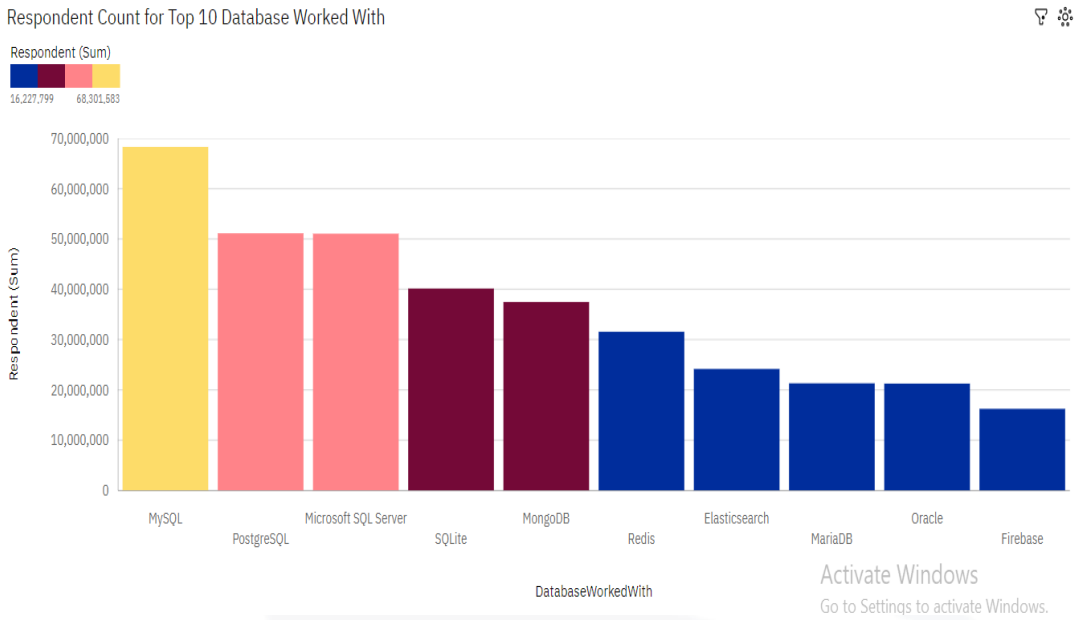
- Javascript, HTML,SQL are top 3 in this current year
- Python and TypeScript will be popular in the upcoming year
- Java will become the least favorite language in the future.

Implications

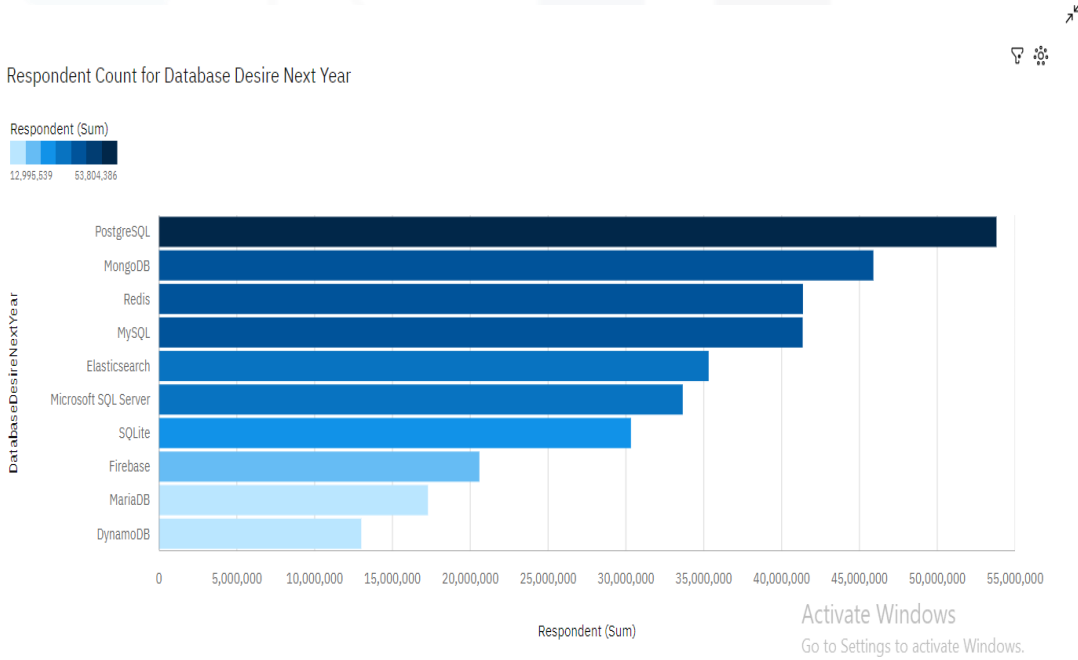
- Web development is in high demand in organizations.
- Big data technology still requires SQL in organizations.
- Companies still using Java might be late to accomplish their task as it is regarded to be slower than C++

DATABASE TRENDS

Current Year



Next Year



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DATABASE TRENDS - FINDINGS & IMPLICATIONS

Findings

- MYSQL is currently the most popular database
- PostgreSQL is the second best databases
- Microsoft SQL seem to be an upcoming favorite too.

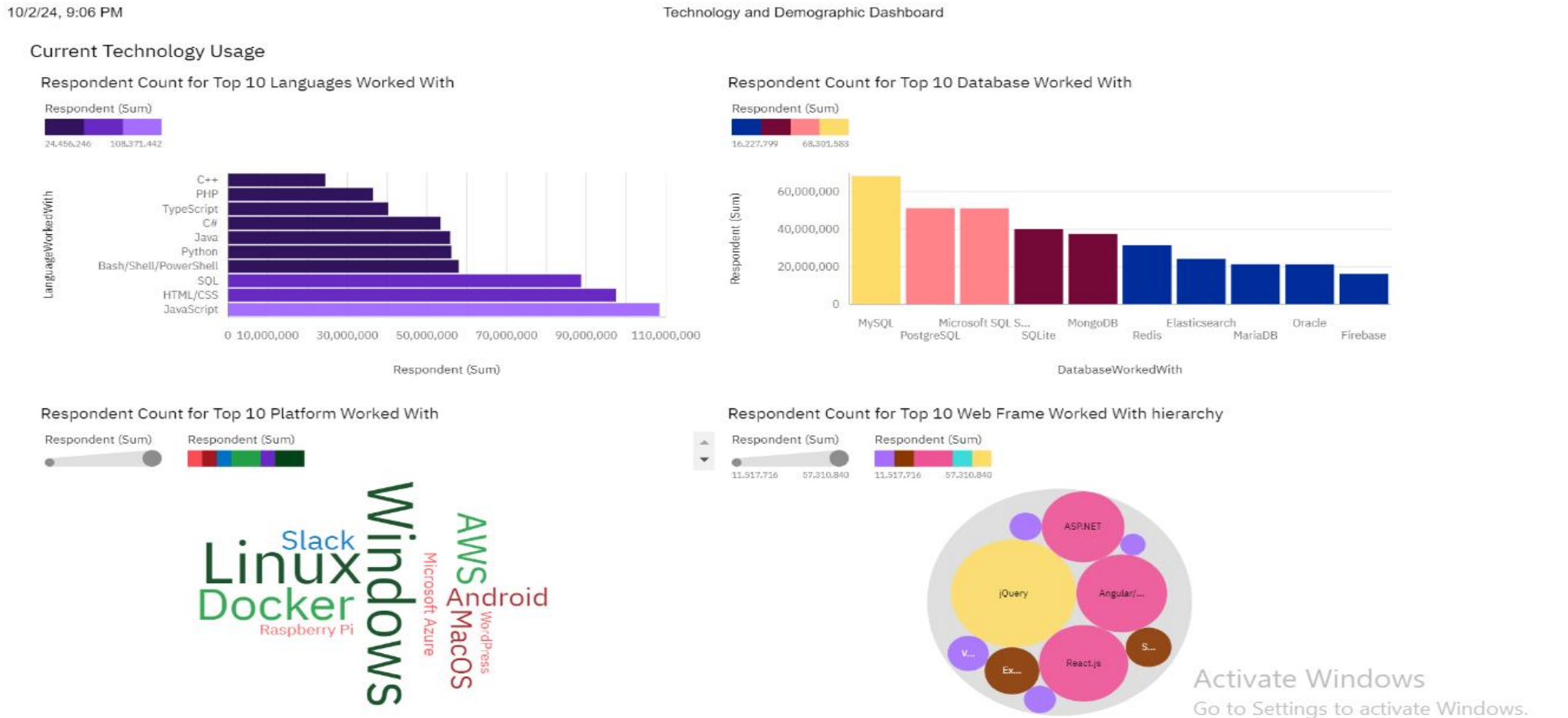
Implications

- As of the current year, this implies that open source databases are still preferable in organizations.
- Excellent performance with complex queries, large datasets.
- SQL servers will make an impact for relational database management system

DASHBOARD

https://github.com/Neba-Aleah/IBM-Data-Analyst-Project/blob/main/_%20Technology%20and%20Demographic%20Dashboard%20Final.pdf

CURRENT TECHNOLOGY USAGE DASHBOARD



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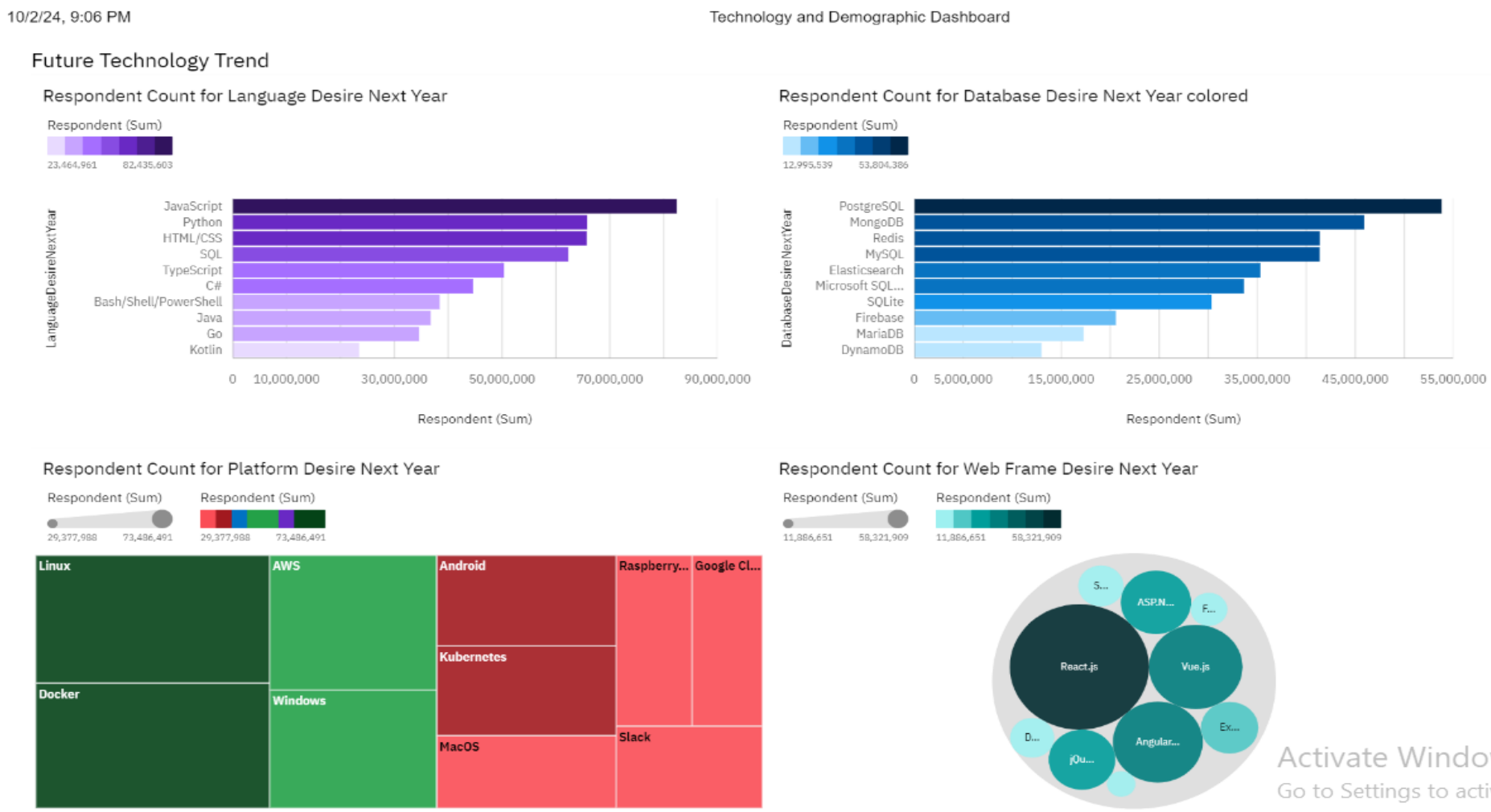
FUTURE TECHNOLOGY TREND DASHBOARD



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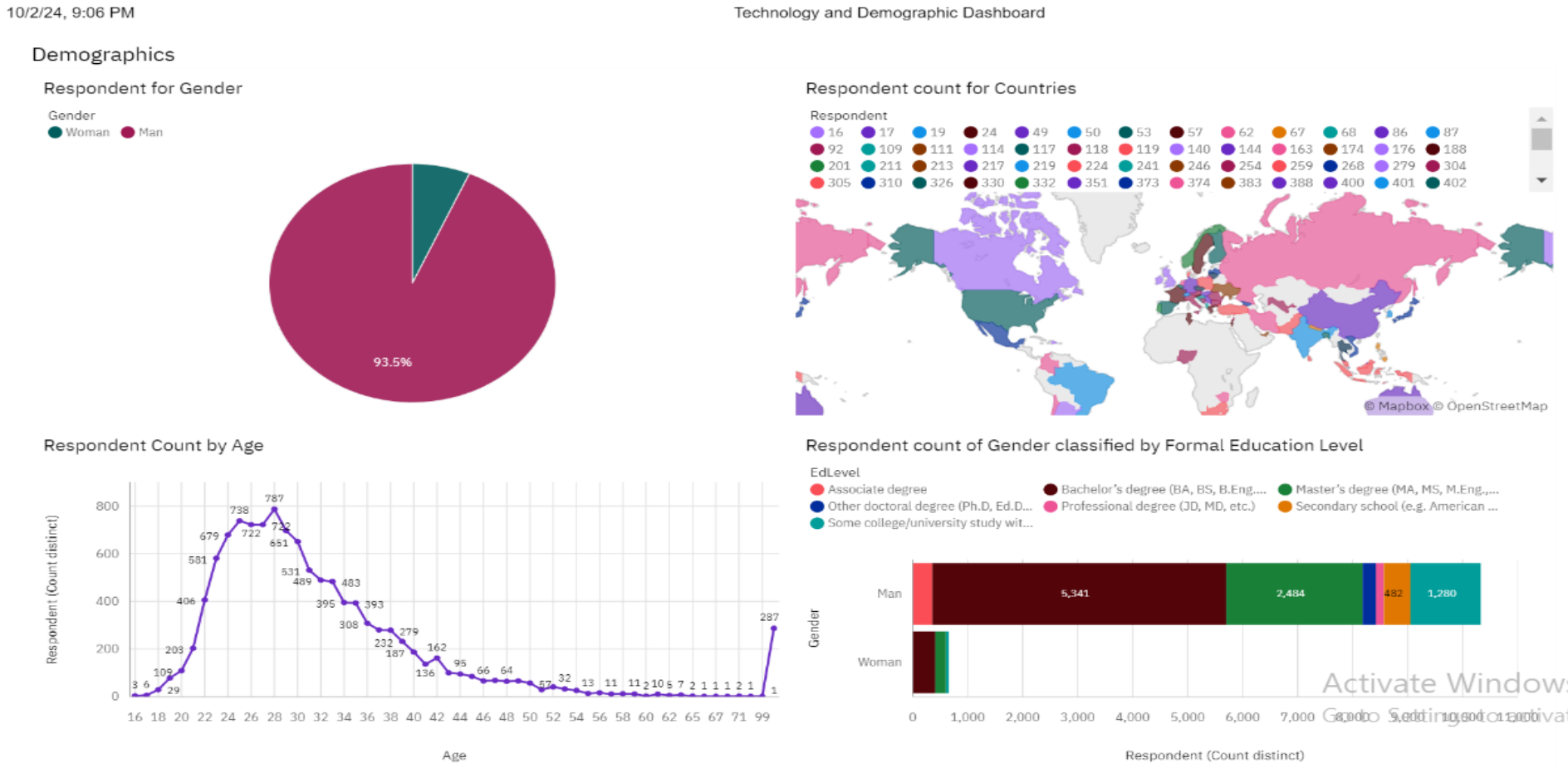
DEMOGRAPHICS DASHBOARD



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DISCUSSION

- Train and encourage workers to learn two or more programming languages.
- Technology trends now and in the future
- Improve female participation in the technology industry
- Encourage the use of technology in developing countries

OVERALL FINDINGS & IMPLICATIONS

Findings

- There is a rapid change in technology every year
- High preference on some programming languages and databases
- There is an existing gender gap in technology
- AWS and dockers are growing platforms

Implications

- Companies need to be flexible so as to adapt to the rapid changes in technology
- Leads to a higher employee efficiency rate.
- Less women in the technology field. Encourage them to learn computer skills and create opportunities for them.
- A shift to faster app deployment and cloud environments in future

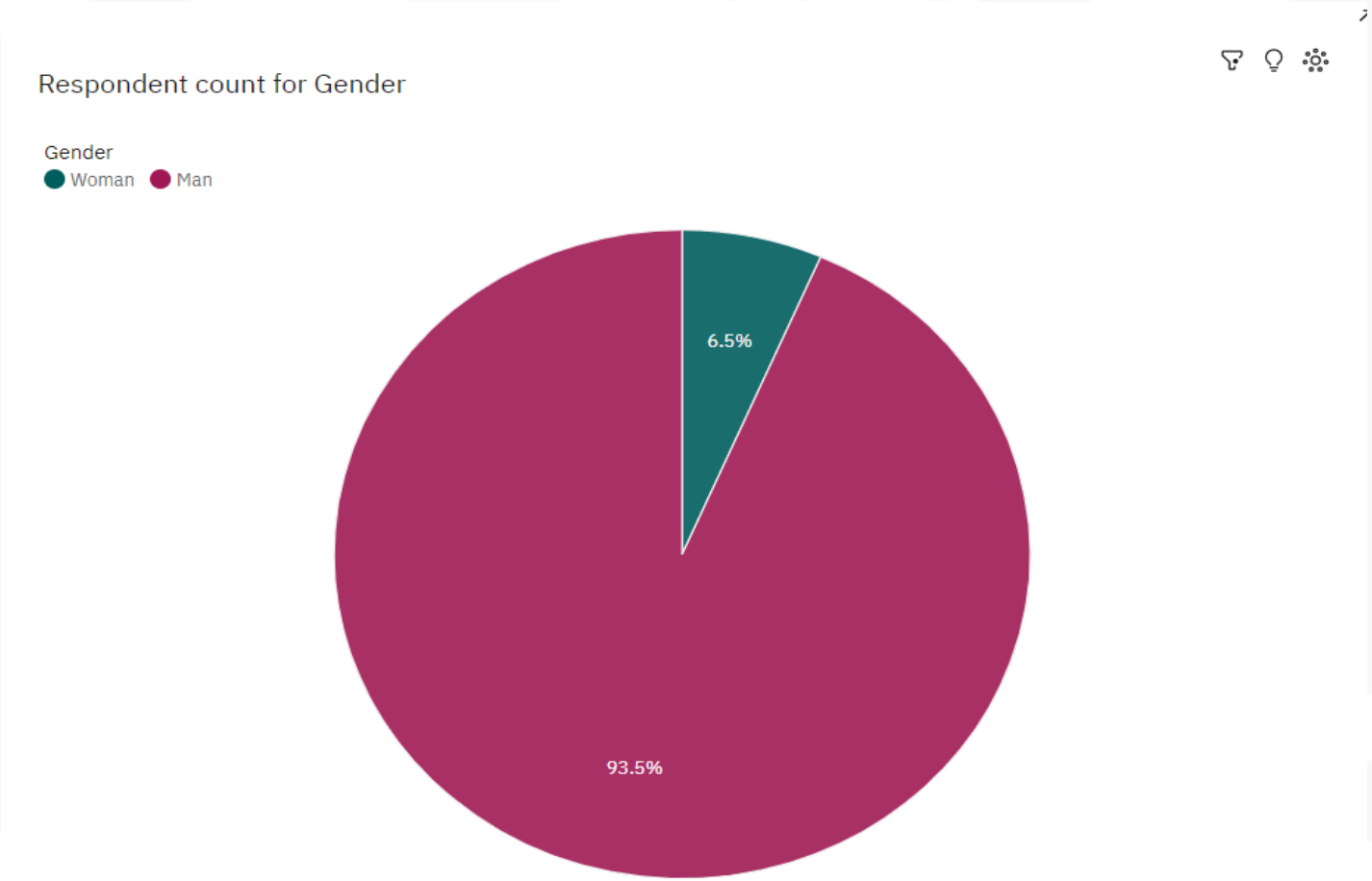
CONCLUSION

Importance of staying updated: highlight the need for continuous learning and improvement of skills

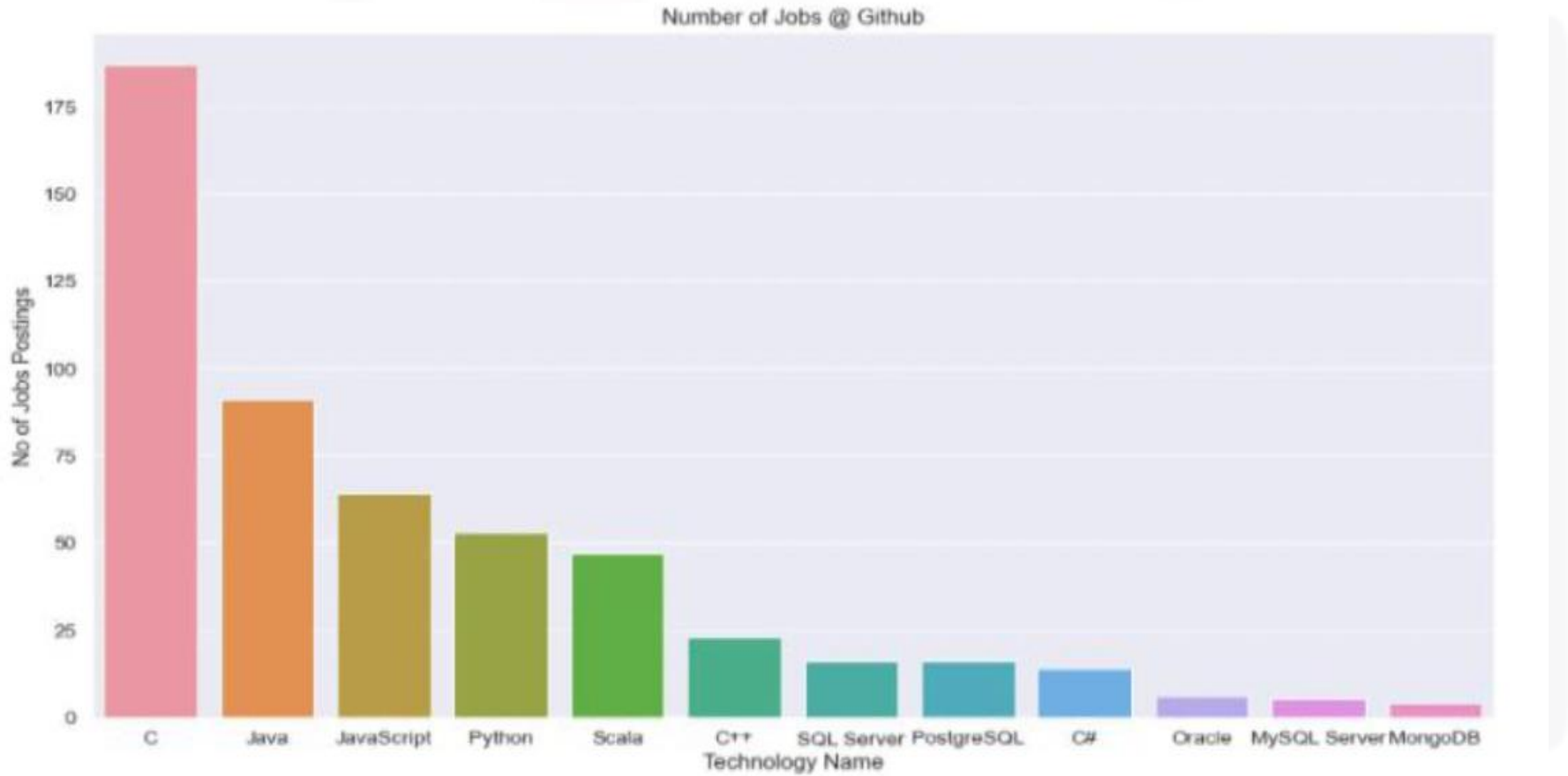
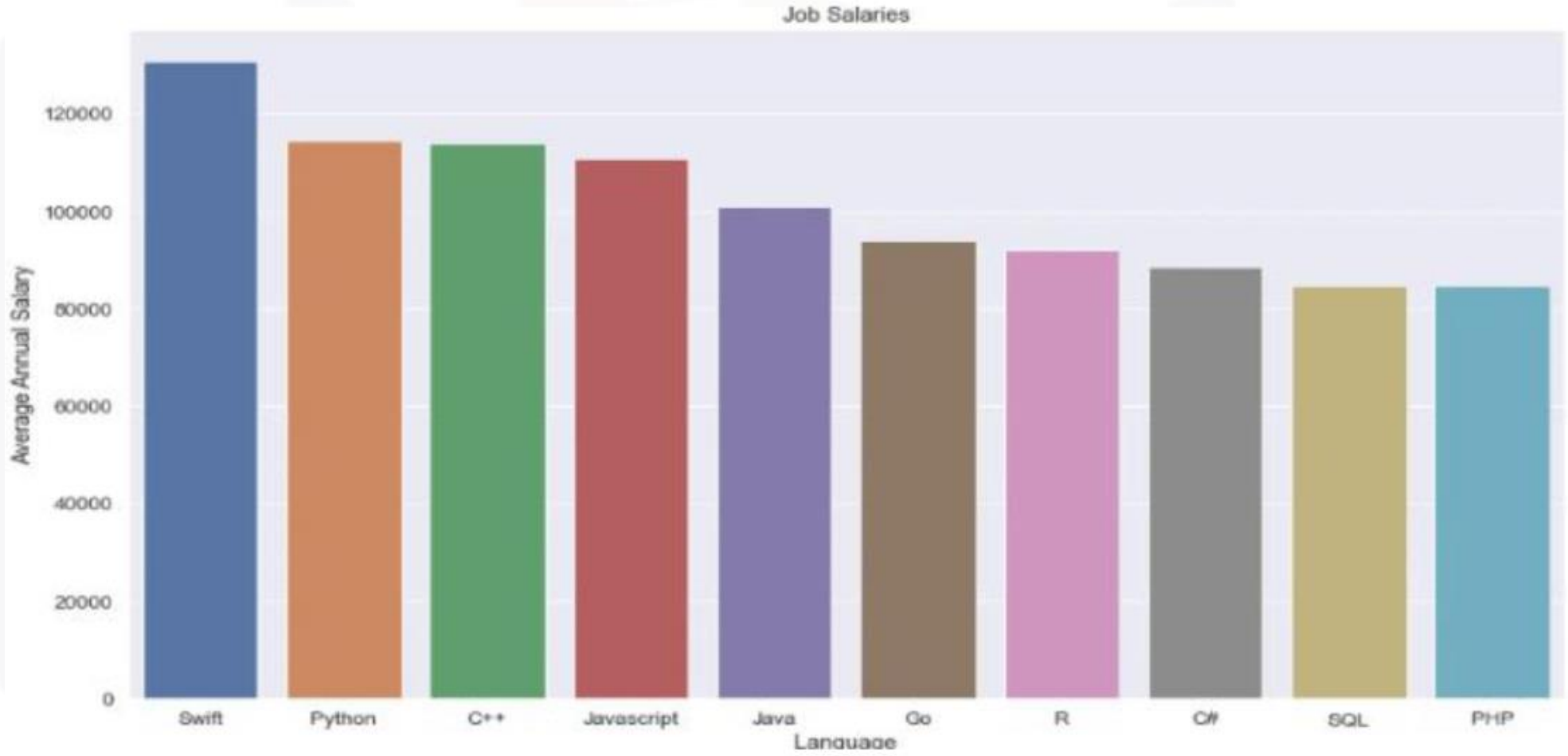
- Current technology trends: create awareness on programming languages, databases, and platfroms.
- Actionable insights by encouraging talent acquisition,
- The evolving Tech landscape: brief overview of rapid technological advancements
- Future trends and machine learning: Anticipate future technologies and its potential impact on workforce

APPENDIX

Gender count



JOB POSTINGS



POPULAR LANGUAGES