CAPSTONE PROJECT PRESENTATION

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OUTLINE

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

EXECUTIVE SUMMARY

- Trends in programming languages and databases.
- Demography survey.
- Technological gap in countries.
- Gender gap in jobs.

INTRODUCTION

- About: Analyzing the trends in software development.
- Purpose:
  - Identify skill requirement for future.
  - What are the top programming languages in demand?
  - What are the popular IDEs?
- Audience: Human Resources and IT Head

METHODOLOGY

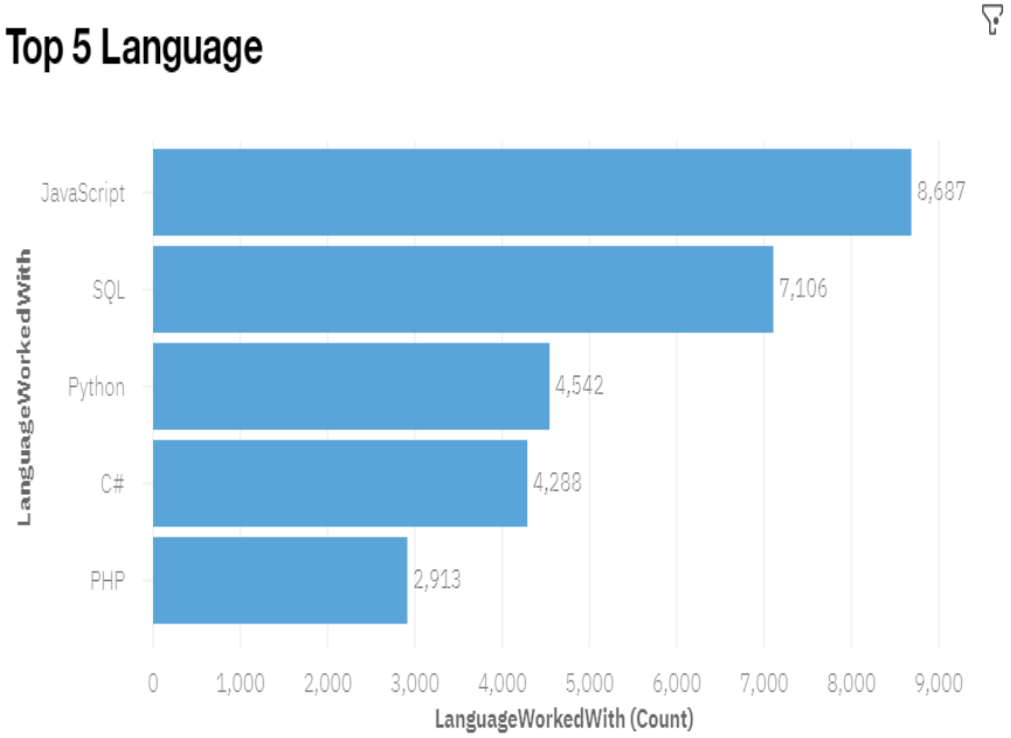
- Data Collection Sources
  - Stack Overflow Developer 2019 survey.
  - GitHub Job Postings.
  - Programming Languages Annual Salary.
- Data Exploration.
- Data Cleaning.
- Data Visualization.
- Presentation.

RESULTS

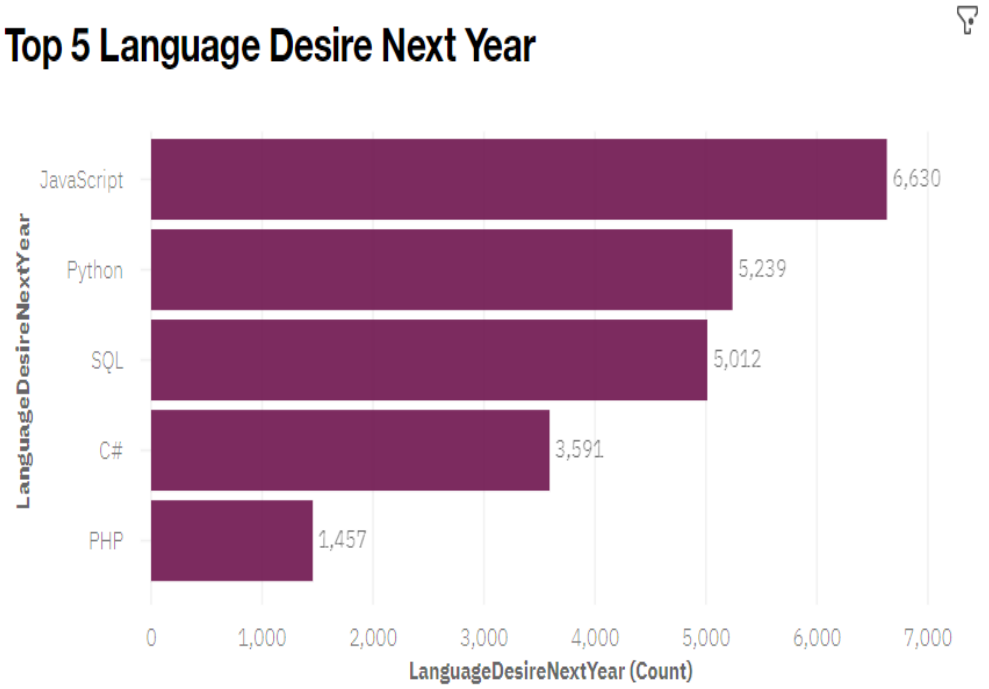
	index	Respondent	MainBranch	Hobbyist	OpenSourcer	OpenSource	Employment	Country	Student	EdLevel	...	SOPartFreq	SOJobs	EntTeams
0	0	4	I am a developer by profession	No	Never	The quality of OSS and closed source software ...	Employed full-time	United States	No	Bachelor's degree (BA, BS, B.Eng., etc.)	...	Less than once per month or monthly	Yes	No, and I don't know what those are
1	1	9	I am a developer by profession	Yes	Once a month or more often	The quality of OSS and closed source software ...	Employed full-time	New Zealand	No	Some college/university study without earning ...	...	Less than once per month or monthly	No, I knew that Stack Overflow had a job board...	No, and I don't know what those are
2	2	13	I am a developer by profession	Yes	Less than once a month but more than once per ...	OSS is, on average, of HIGHER quality than pro...	Employed full-time	United States	No	Master's degree (MA, MS, M.Eng., MBA, etc.)	...	Less than once per month or monthly	Yes	No, I've heard of them, but I am not part of a...
3	3	16	I am a developer by profession	Yes	Never	The quality of OSS and closed source software ...	Employed full-time	United Kingdom	No	Master's degree (MA, MS, M.Eng., MBA, etc.)	...	Less than once per month or monthly	Yes	No, I've heard of them, but I am not part of a...

PROGRAMMING LANGUAGE TRENDS

Current Year



Next Year



PROGRAMMING LANGUAGE TRENDS - FINDINGS & IMPLICATIONS

Findings

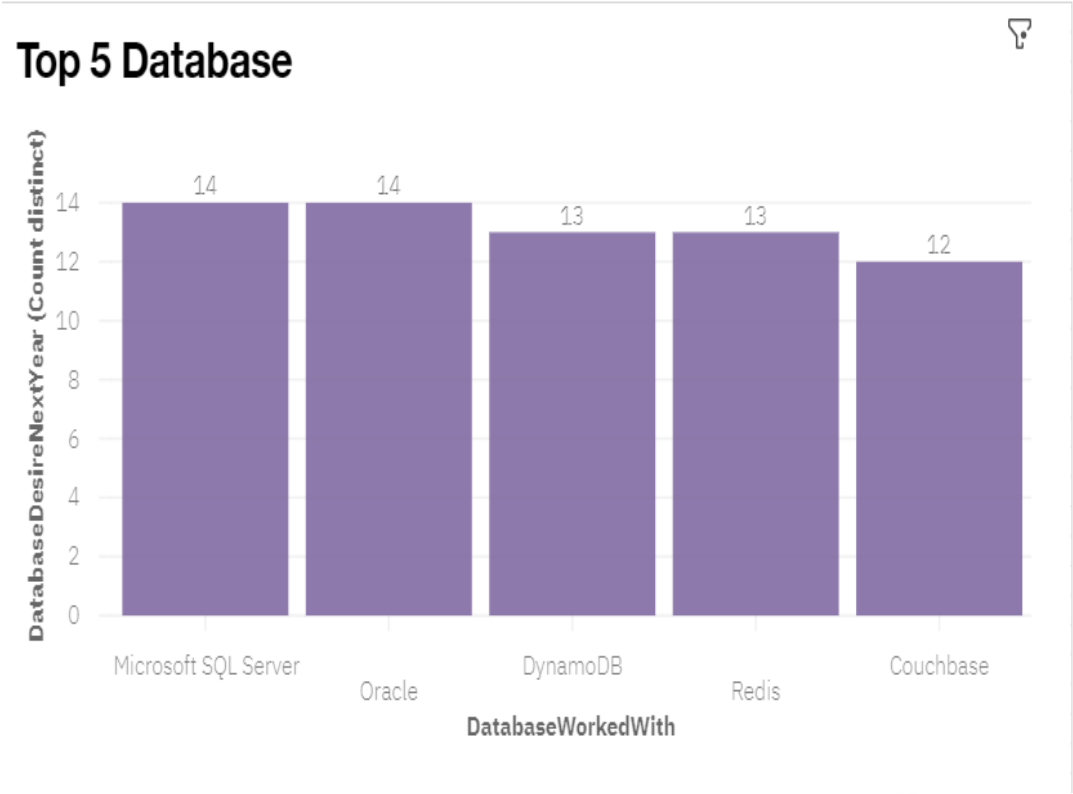
- JavaScript, SQL, Python are top 3 this year.
- Python and SQL becoming popular next year.
- PowerShell edged out in next year.

Implications

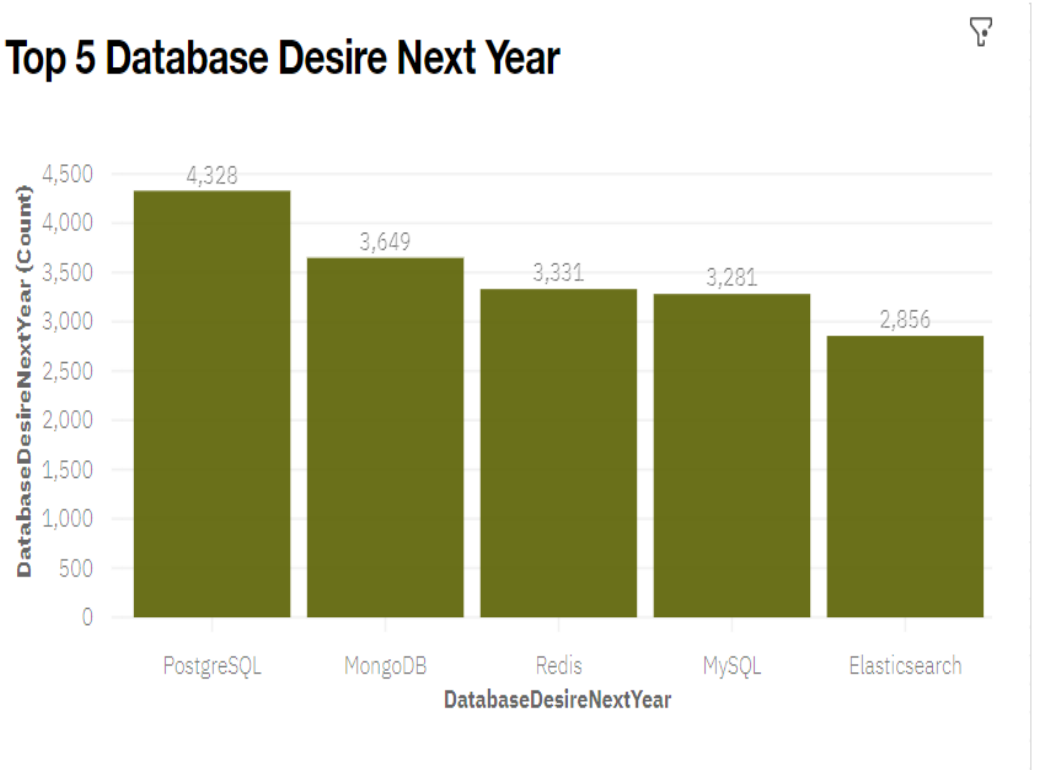
- Python are still in high demand.
- Big Data technology in companies still requires SQL.
- With AI and ML in rising demand, Python is best choice.

DATABASE TRENDS

Current Year



Next Year



DATABASE TRENDS - FINDINGS & IMPLICATIONS

Findings

- Microsoft MySQL Server most popular.
- Behind is DynamoDB.
- MongoDB and Redis are upcoming favorites.
- New kid on the block: Elasticsearch

Implications

- Open-source databases are still preferable in companies.
- NoSQL databases will make an impact for storing non-relational data.
- Redis supports abstract data types.
- Pre-tuned search to website, app, or ecommerce store.

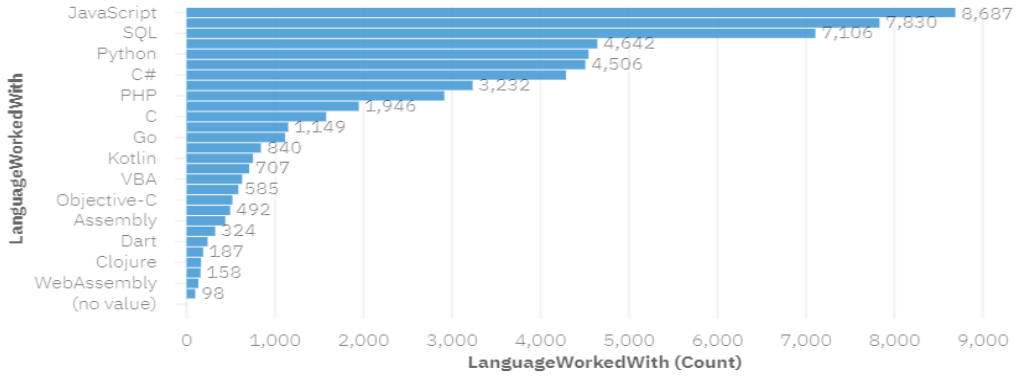
DASHBOARD

IBM COGNOS LINK DASHBOARD

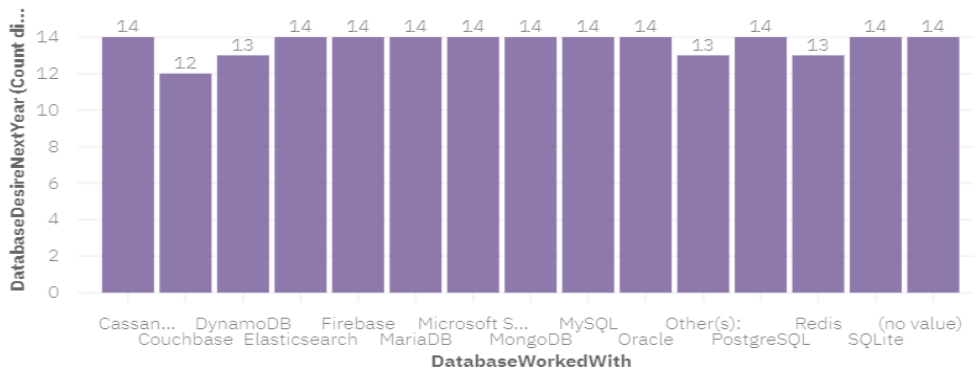
https://eu-de.dataplatform.cloud.ibm.com/dashboards/261a0684-a70c-4a0f-9198-5a2d5eab0148/view/423dfe1679940fdf44c2cce4079d28527d312609b2bbd50181d37b4907637097f33a1795c82d430c8e100d37f3ef400ccf

CURRENT TECHNOLOGY USAGE DASHBOARD

Top 10 Language Worked With

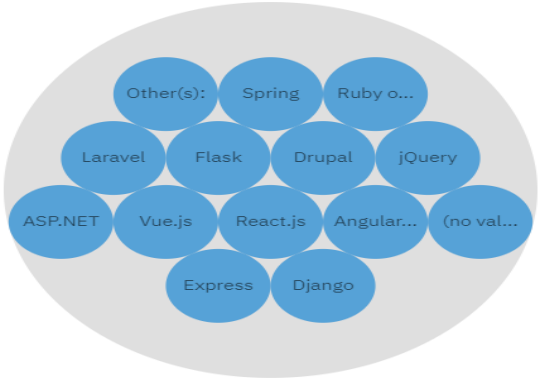


Top 10 Database Worked With



Platform Worked With

Top 10 Web Frame Worked With

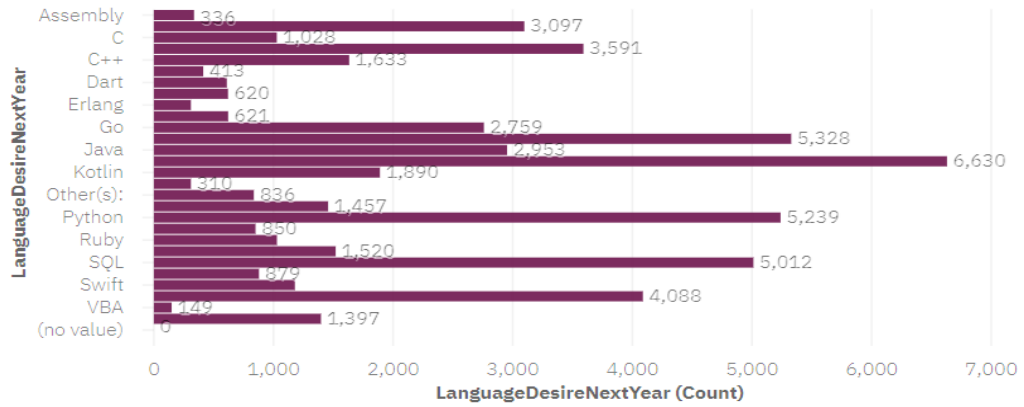


IBM Developer

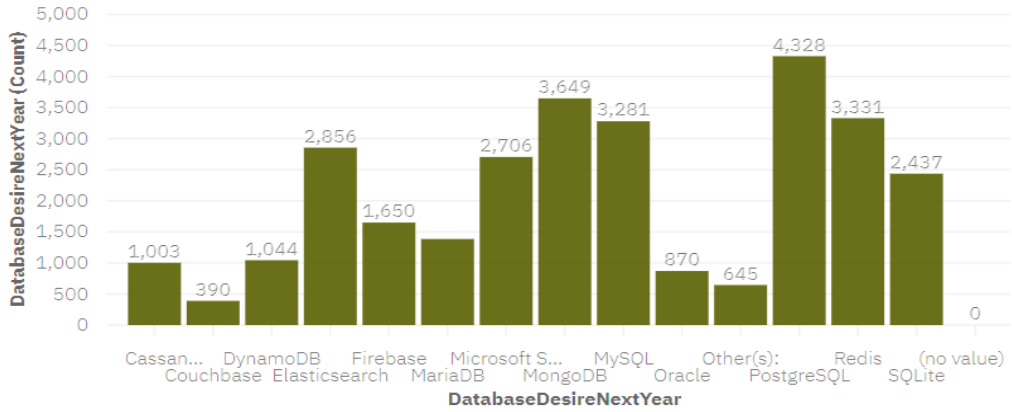
SKILLS NETWORK

FUTERE TECHNOLOGY TREND DASHBOARD

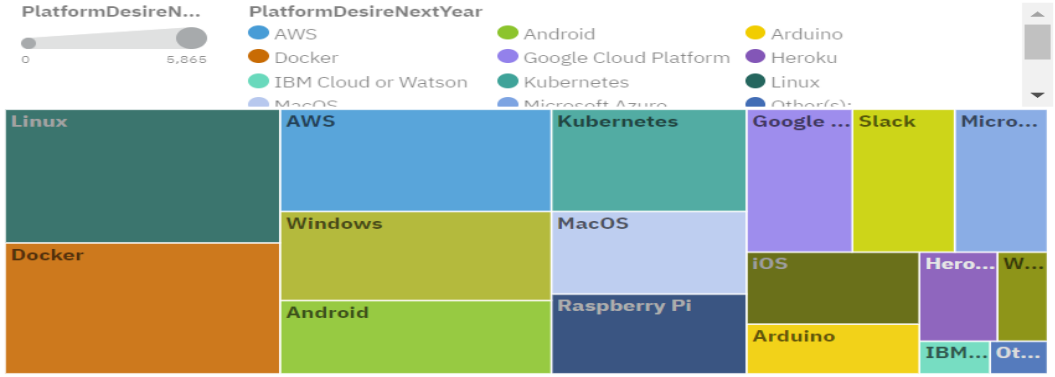
Top 10 Language Desire Next Year



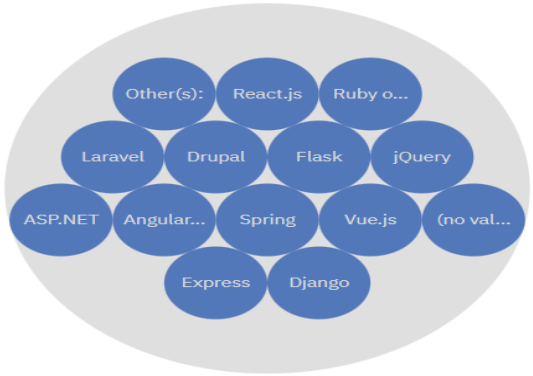
Top 10 Database Desire Next Year



Platform Desire Next Year



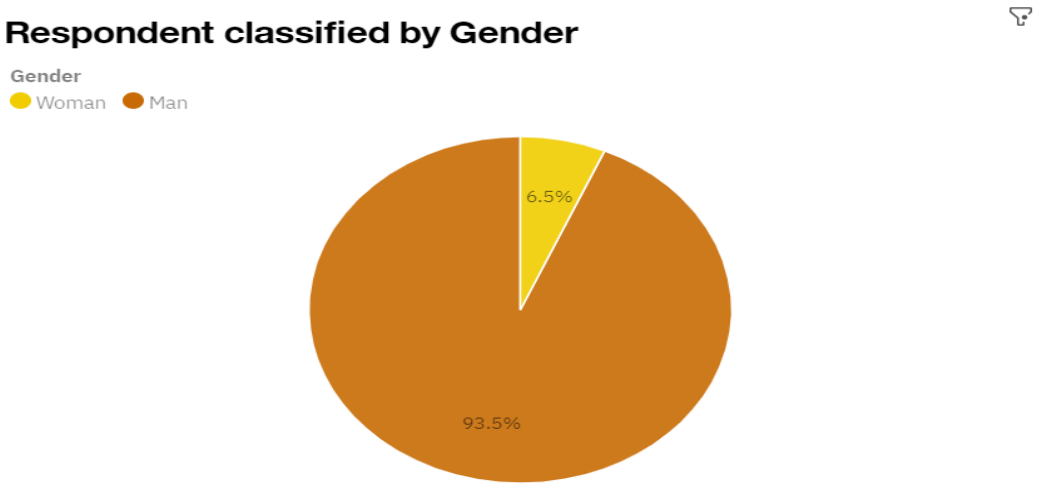
Top 10 Web Frame Desire Next Year

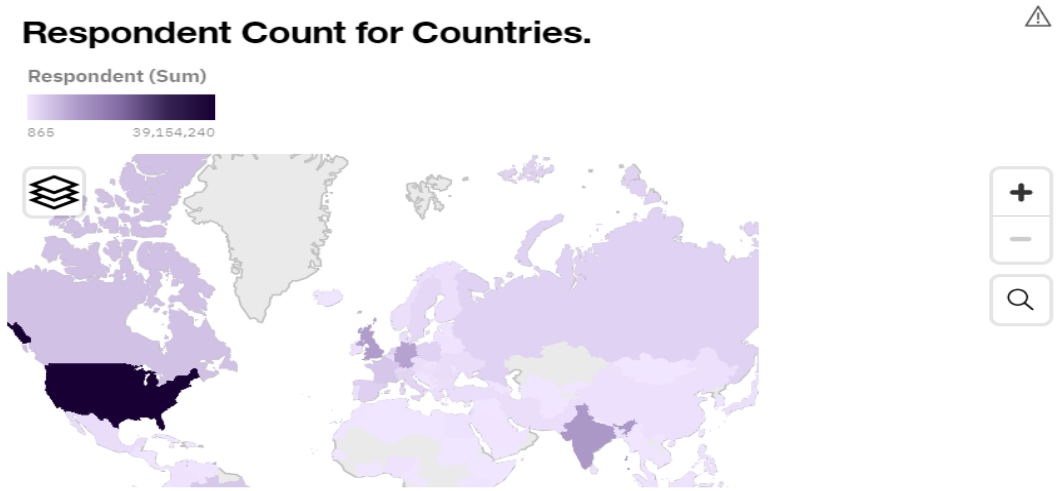


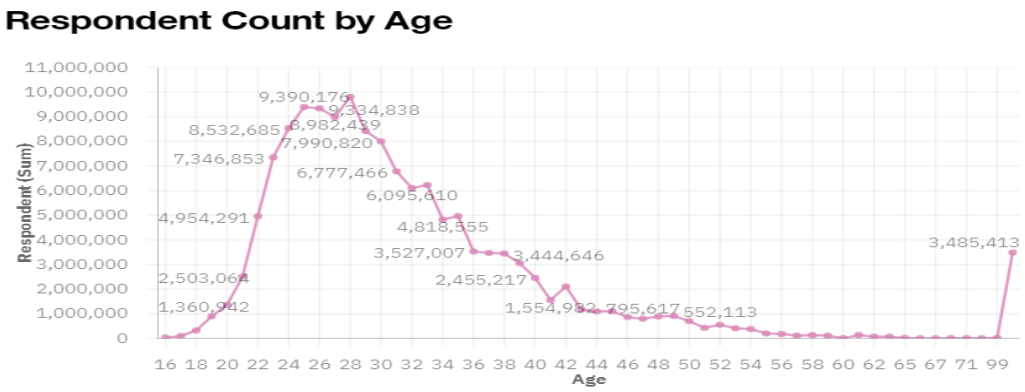
IBM Developer

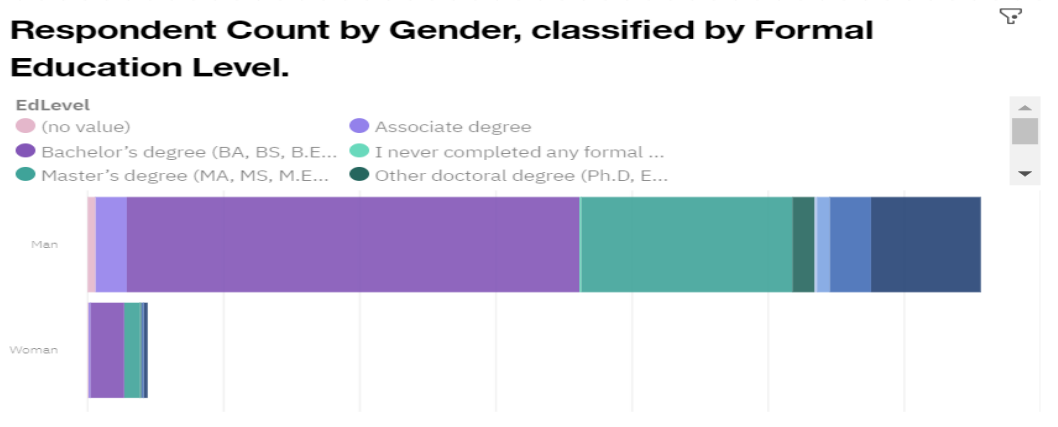
SKILLS NETWORK

DEMOGRAPHIC DASHBOARD









DISCUSSION

- Technology Trends now and future.
- Training and Reskilling workers.
- Females participation in Technology filed.
- Bridge divide of technology gaps in developing countries.
- Eliminate age and education discrimination in employment.

OVERALL FINDINGS & IMPLICATIONS

Findings

- Fast changing technology every year.
- Concentration on several countries like USA and India.
- Gender gap technology jobs.
- Platforms like Dockers and AWS are growing.

Implications

- Companies need to be flexible and adjust to rapid changes.
- Need to spread technology out to lagging countries.
- Impact of job hiring's.
- Shift to faster app deployments and cloud services in future.

CONCLUSION

- Technology Trends for current and next year.
- Programming Languages, Database and Platform overview.
- Demographics overview.
- Actions to be taken.
- In future, incorporate Machine Learning to predict trends and salaries.

APPENDIX

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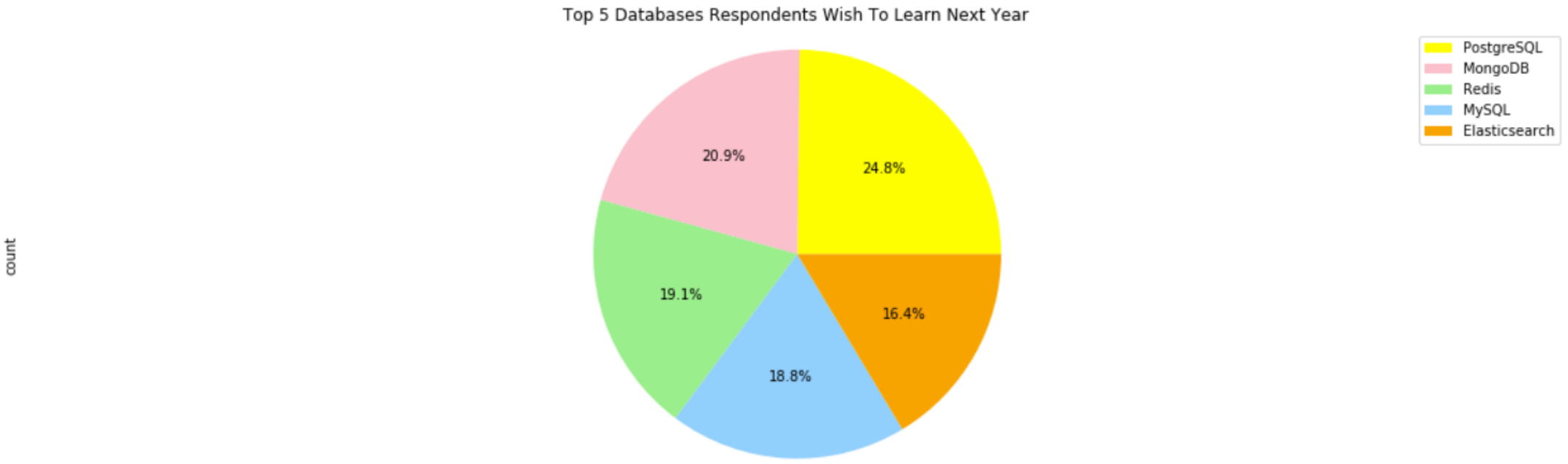
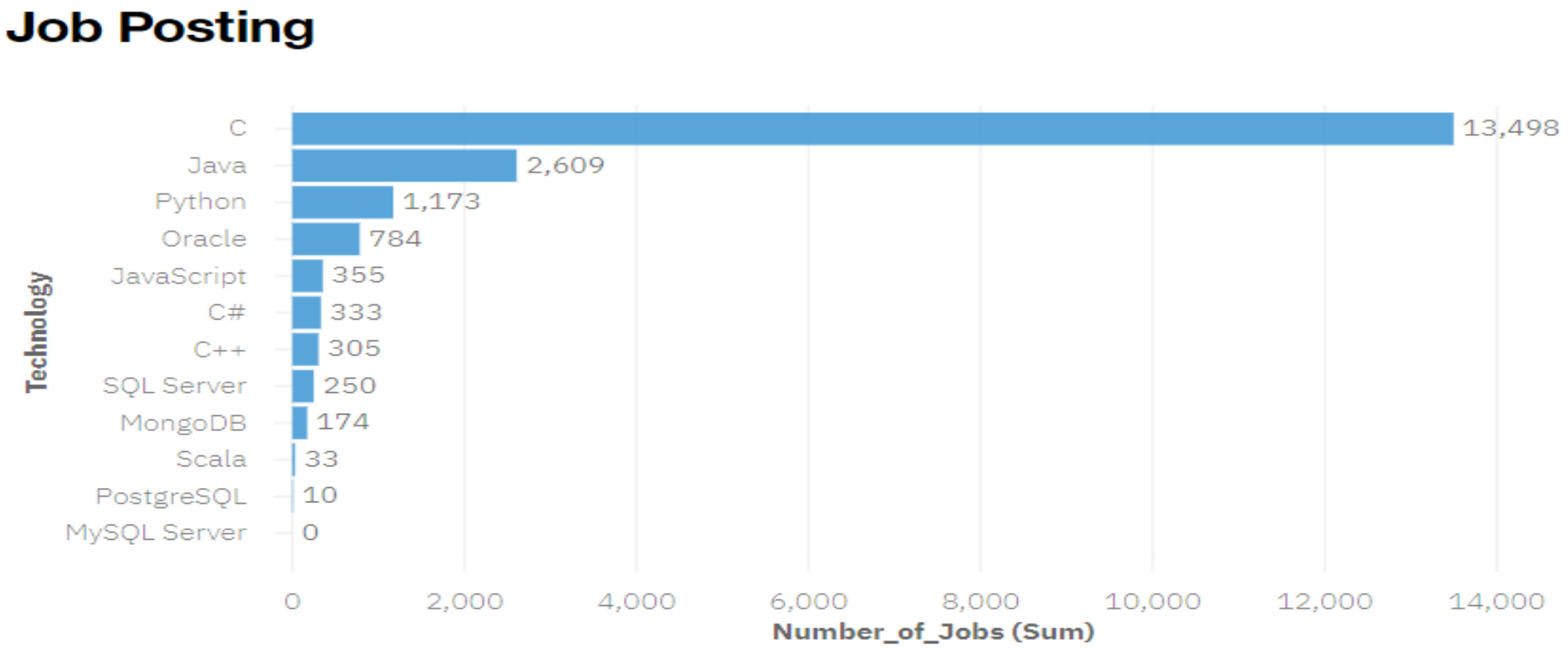


JOB POSTING


Job Posting
Technology
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Java
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Oracle
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C#
C++
SQL Server
MongoDB
Scala
PostgreSQL
MySQL Server
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2,609
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784
355
333
305
250
174
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10
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0
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6,000
8,000
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12,000
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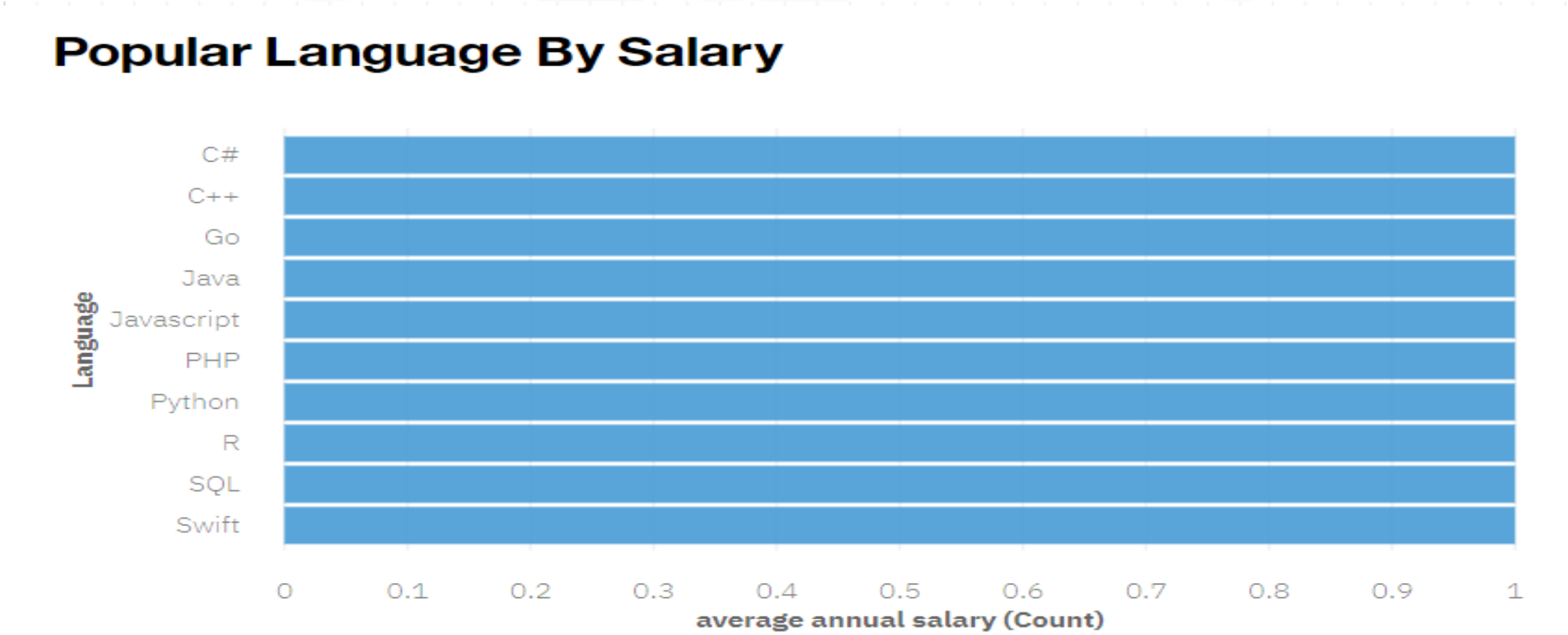
Number_of_Jobs (Sum)

POPULAR LANGUAGES