IBM Data Analyst Capstone Project

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15.2. 2024

IBM Developer

SKILLS NETWORK

OUTLINE

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- Methodology
- Results
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  - Dashboard
- Discussion
  - Findings & Implications
- Conclusion
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EXECUTIVE SUMMARY

- Current Technology Trend:
  - Languages, Database, Platform and Webframe
- Future Technology Trend:
  - Languages, Database, Platform and Webframe
- Demographics Survey
- Country Technological Differences
- Gender gap in the IT Industry

INTRODUCTION

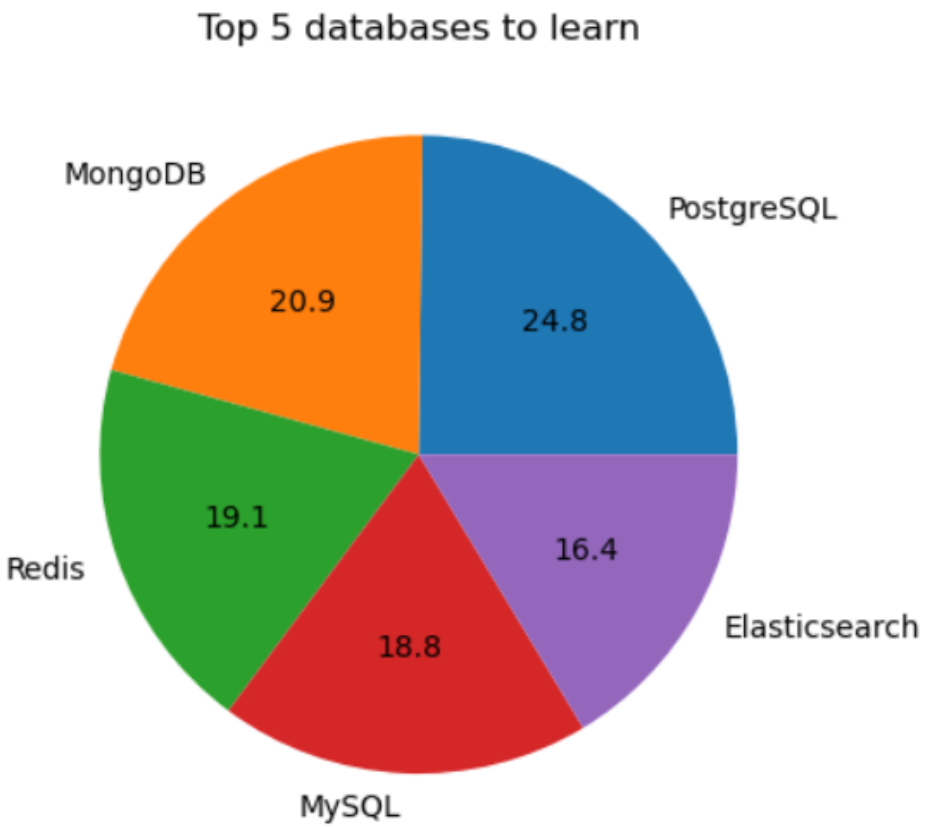
Survey was conducted in 2019, by Stack Overflow, to analyze the trends in Technology and Web development among the developers around the world

- Purpose of the analysis was to identify:
  - top programming languages
  - Most used databases
  - Future skill requirements
  - Demographic distribution of technology
  - Human resources gap in the industry

METHODOLOGY

- Data Collection
  - Stack Overflow Developer 2019 Survey
  - GitHub Job Posting
  - Programming Languages Annual Salary
- Data Wrangling
- Data Exploration
- Data Cleaning
- Data Visualization
  - Python visualization libraries
  - IBM Cognos Analyitcs
- Presentation

RESULTS



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	Technology	Los Angeles	New York	San Francisco	Washington DC	Seattle	Austin	Detroit
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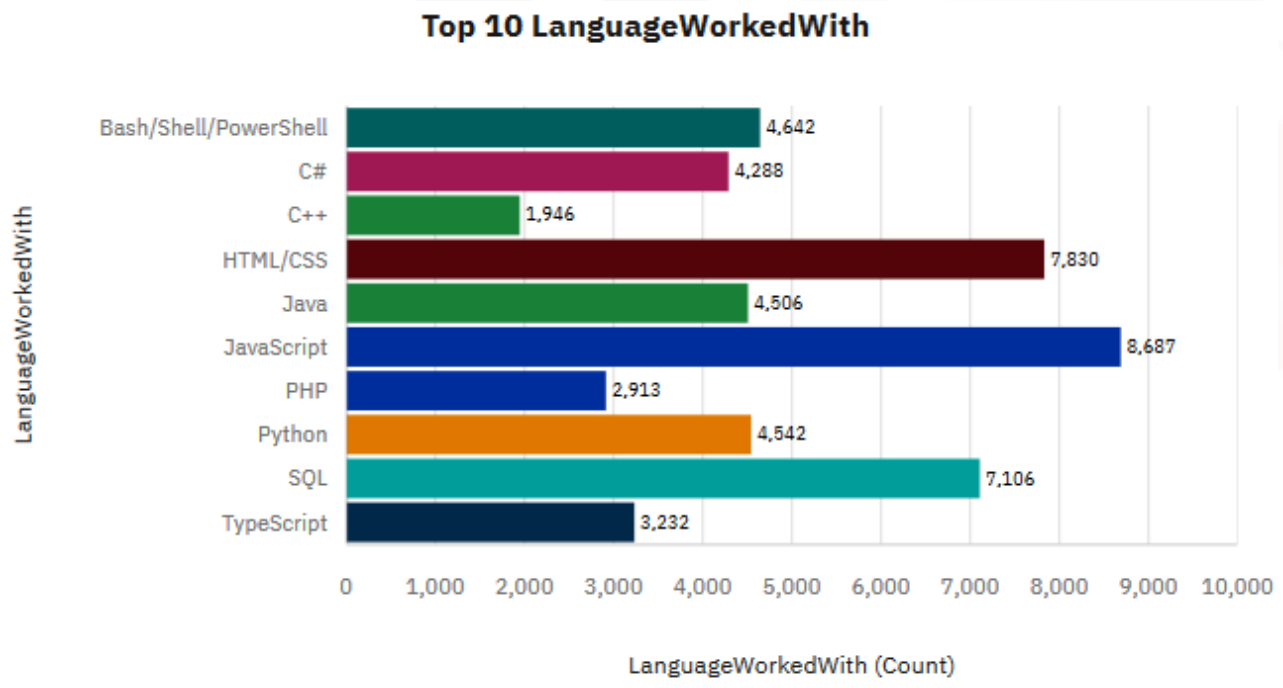
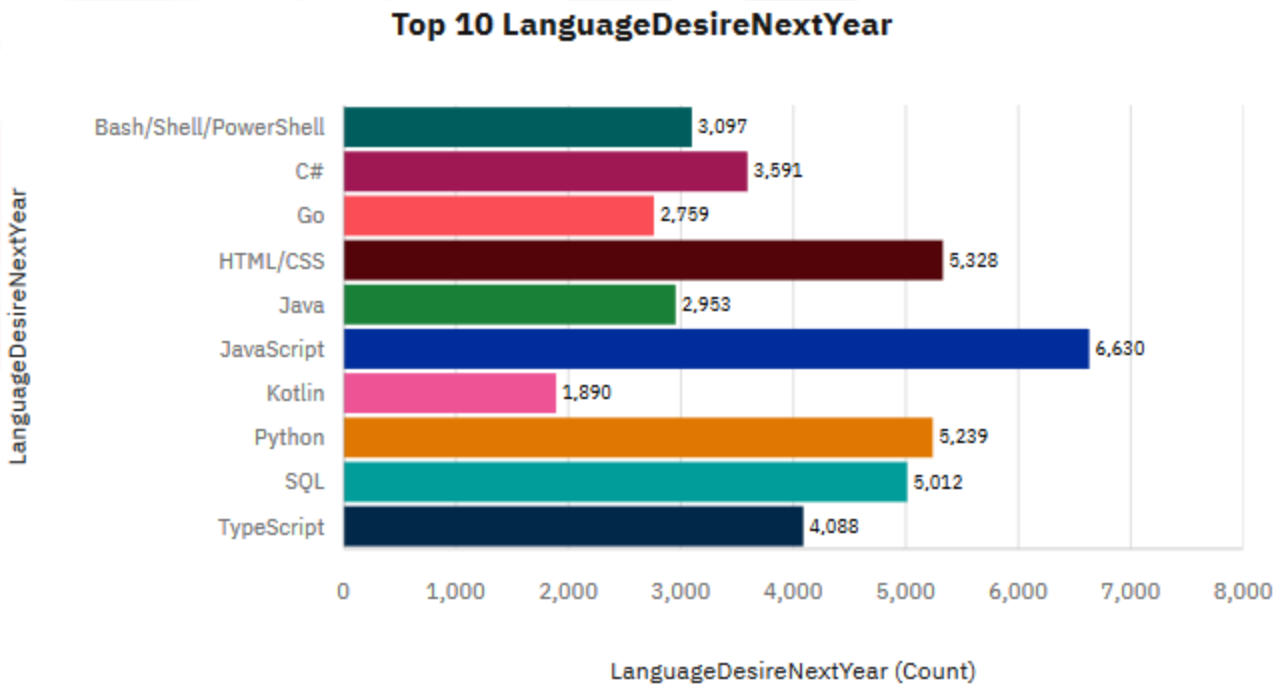
1	C|	NaN	NaN	NaN	NaN	NaN	NaN	NaN
2	C#	5.0	41.0	3.0	68.0	49.0	5.0	60.0
3	c#	NaN	NaN	NaN	NaN	NaN	NaN	NaN
4	C++	3.0	43.0	3.0	55.0	41.0	4.0	32.0
5	c++	NaN	NaN	NaN	NaN	NaN	NaN	NaN
6	Java	NaN	NaN	NaN	NaN	NaN	NaN	NaN
7	Java|	NaN	NaN	NaN	NaN	NaN	NaN	NaN
8	java|	NaN	NaN	NaN	NaN	NaN	NaN	NaN
9	java	NaN	NaN	NaN	NaN	NaN	NaN	NaN
10	JAVA	NaN	NaN	NaN	NaN	NaN	NaN	NaN
11	JAVA|	NaN	NaN	NaN	NaN	NaN	NaN	NaN
12	JavaScript	7.0	51.0	7.0	61.0	52.0	5.0	41.0
13	Javascript	NaN	NaN	NaN	NaN	NaN	NaN	NaN
14	javascript	NaN	NaN	NaN	NaN	NaN	NaN	NaN
15	Python	24.0	143.0	17.0	258.0	133.0	15.0	170.0

PROGRAMMING LANGUAGE TRENDS

Current Year



Next Year



PROGRAMMING LANGUAGE TRENDS - FINDINGS & IMPLICATIONS

Findings

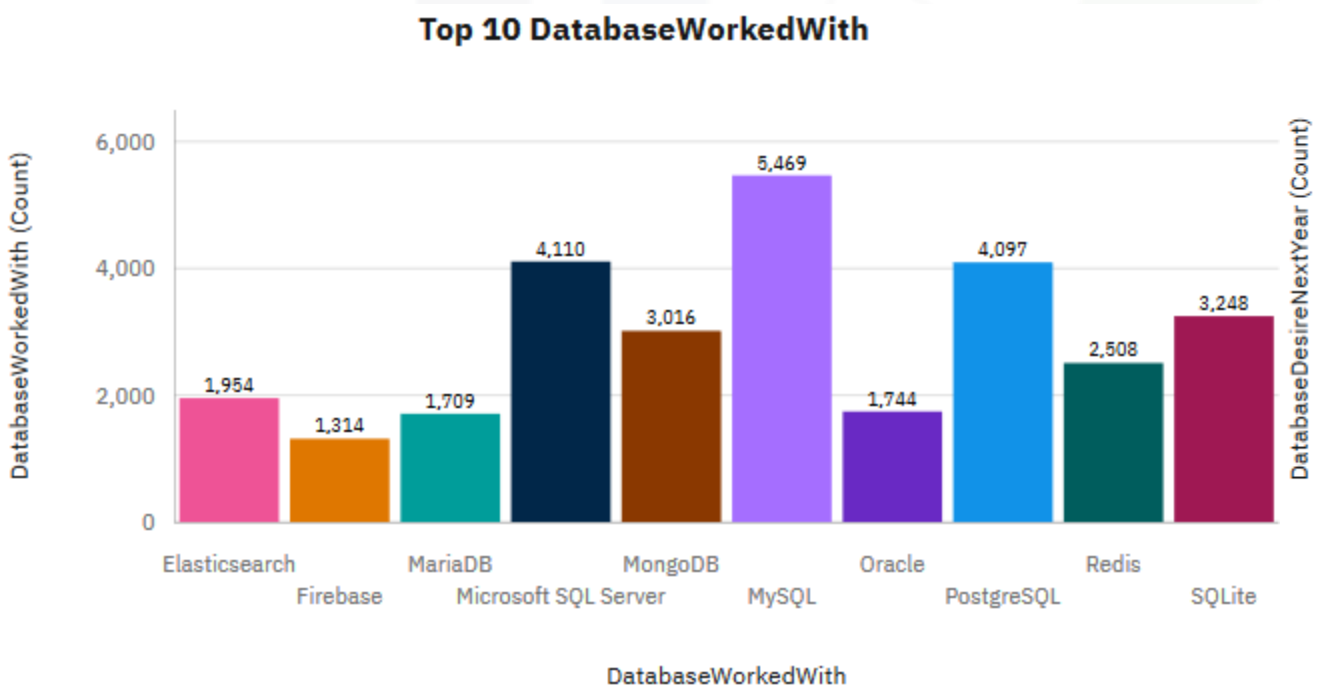
- Most popular programming language now is Javascript.
- Basic languages are still popular. (SQL, Python, C++, C#)
- HTML/CSS and SQL are good known.

Implications

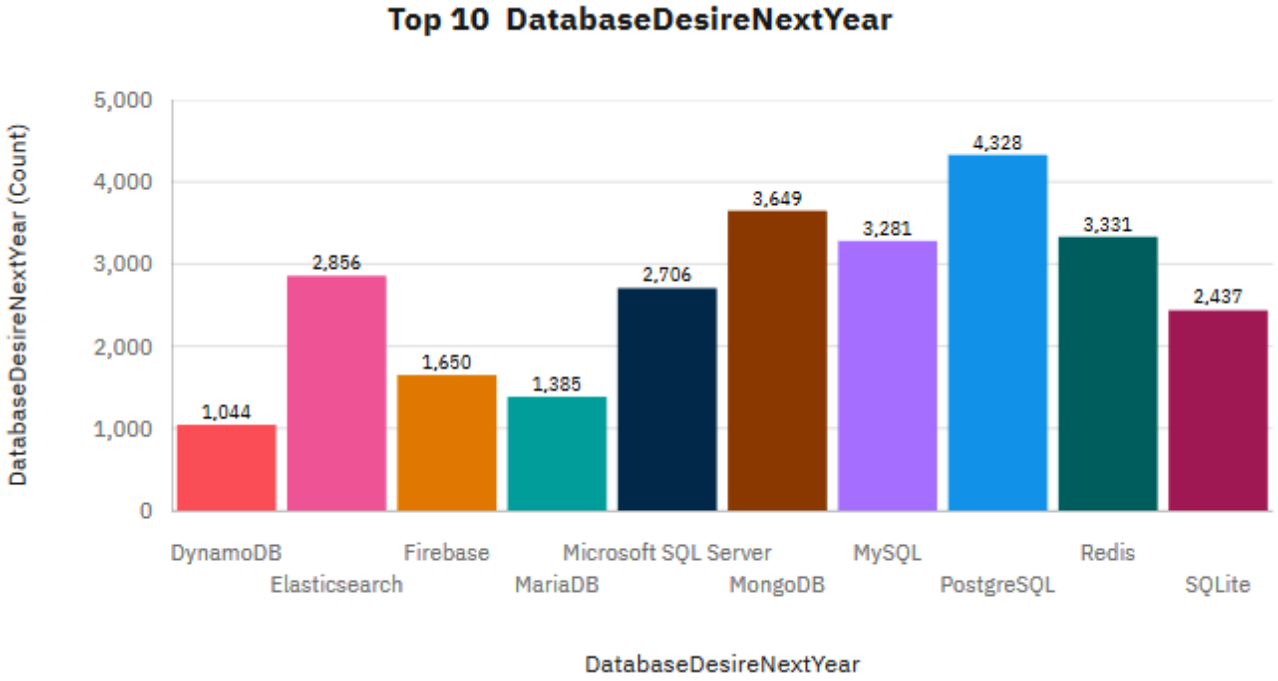
- JavaScript will be high in demand in the future as well.
- Languages for web development are needed.
- There are always new programming languages to learn.

DATABASE TRENDS

Current Year



Next Year



DATABASE TRENDS - FINDINGS & IMPLICATIONS

Findings

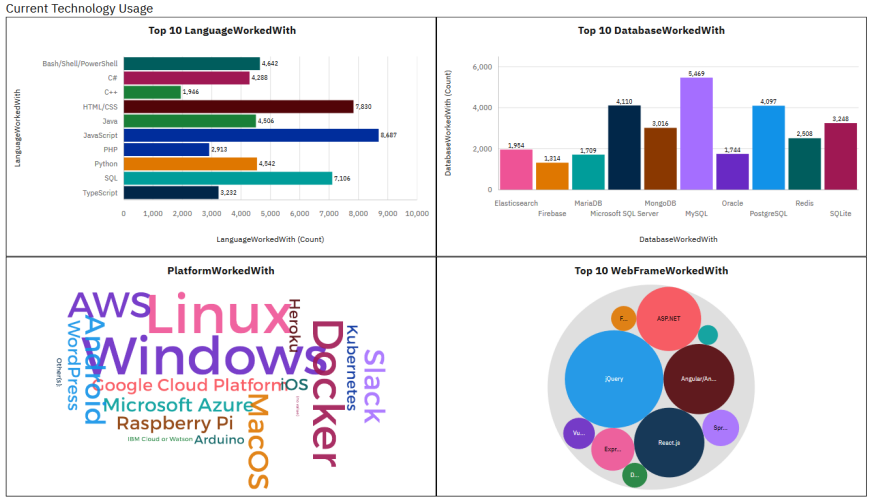
- Most top database is MySQL
- Microsoft SQL Server is still used by many companies
- MongoDB can become new most popular

Implications

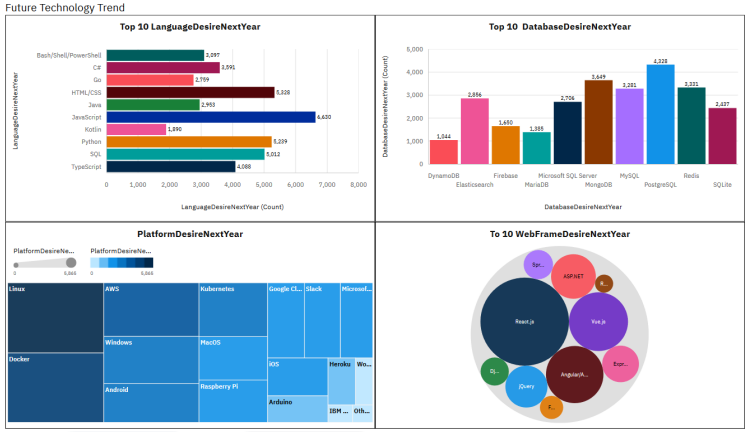
- Open source databases are overall more preferred
- SQL databases are deed more for the development
- New databases can become popular relatively quickly.

DASHBOARD

Current Technology Usage

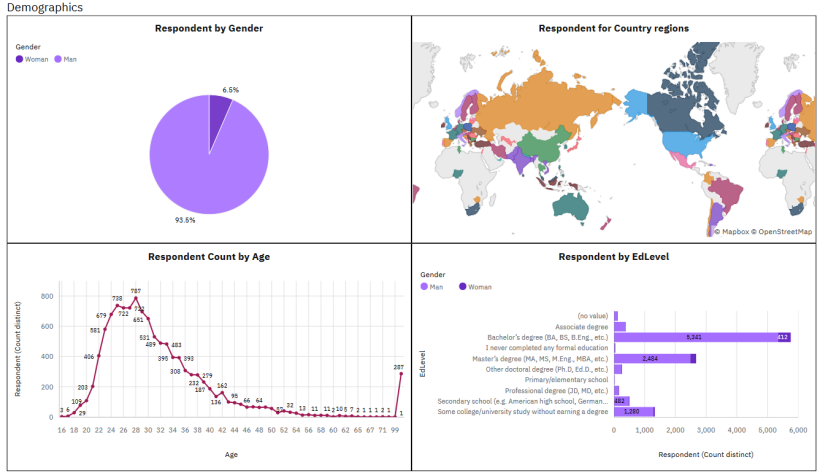


Future Technology Trend



[GitHub dashboard]

Demographics

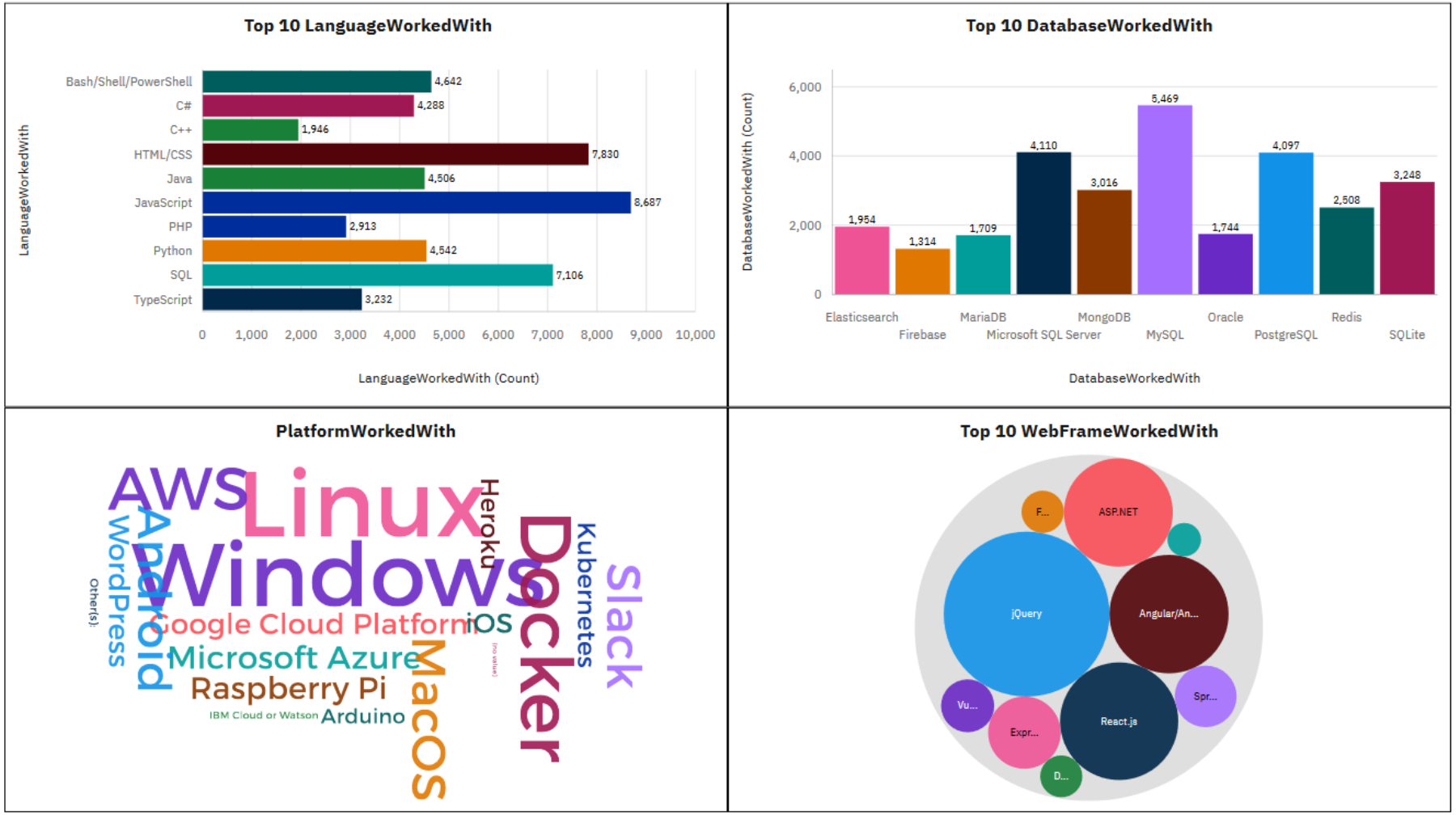


IBM Developer

SKILLS NETWORK

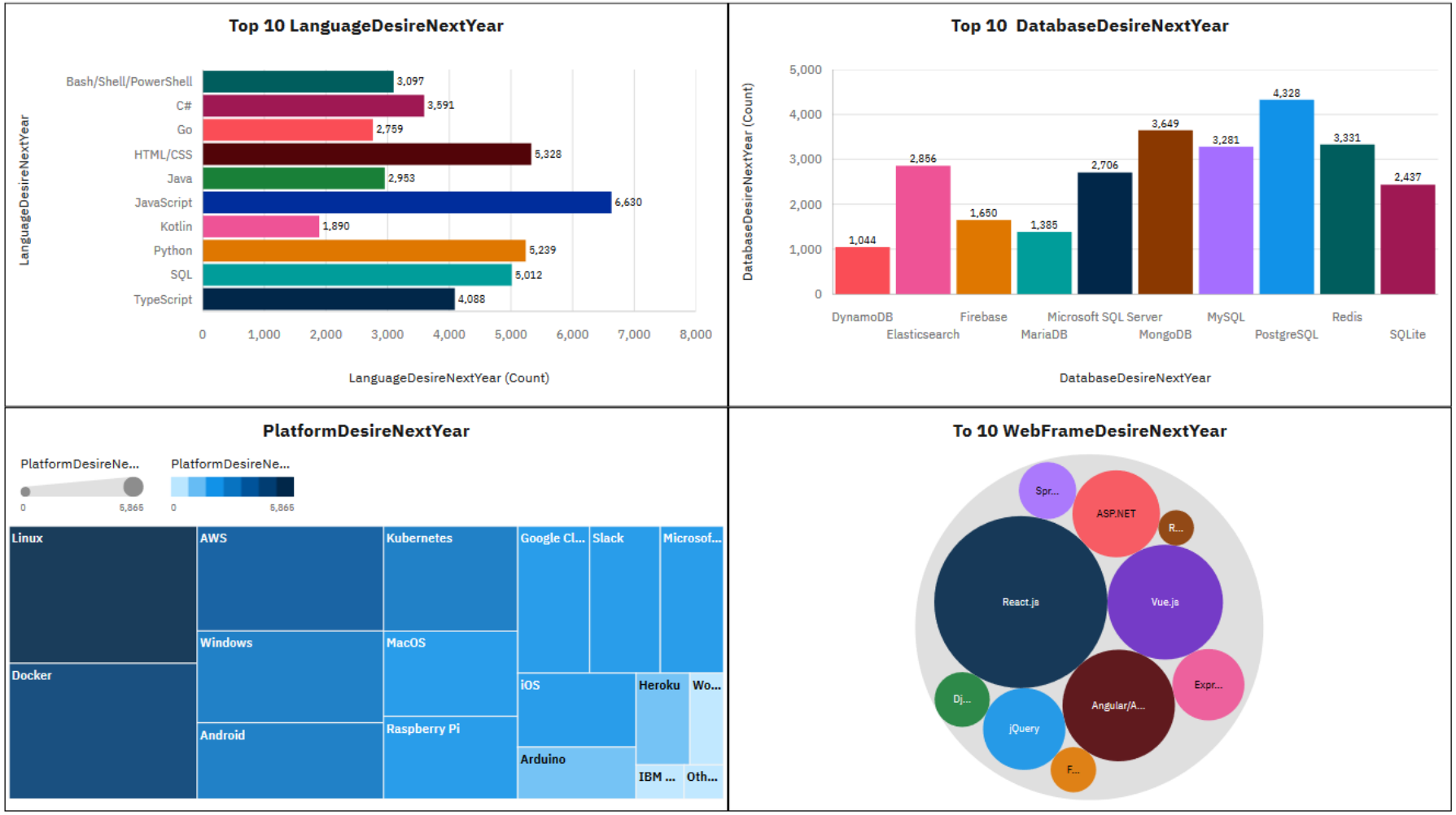
DASHBOARD TAB 1

Current Technology Usage



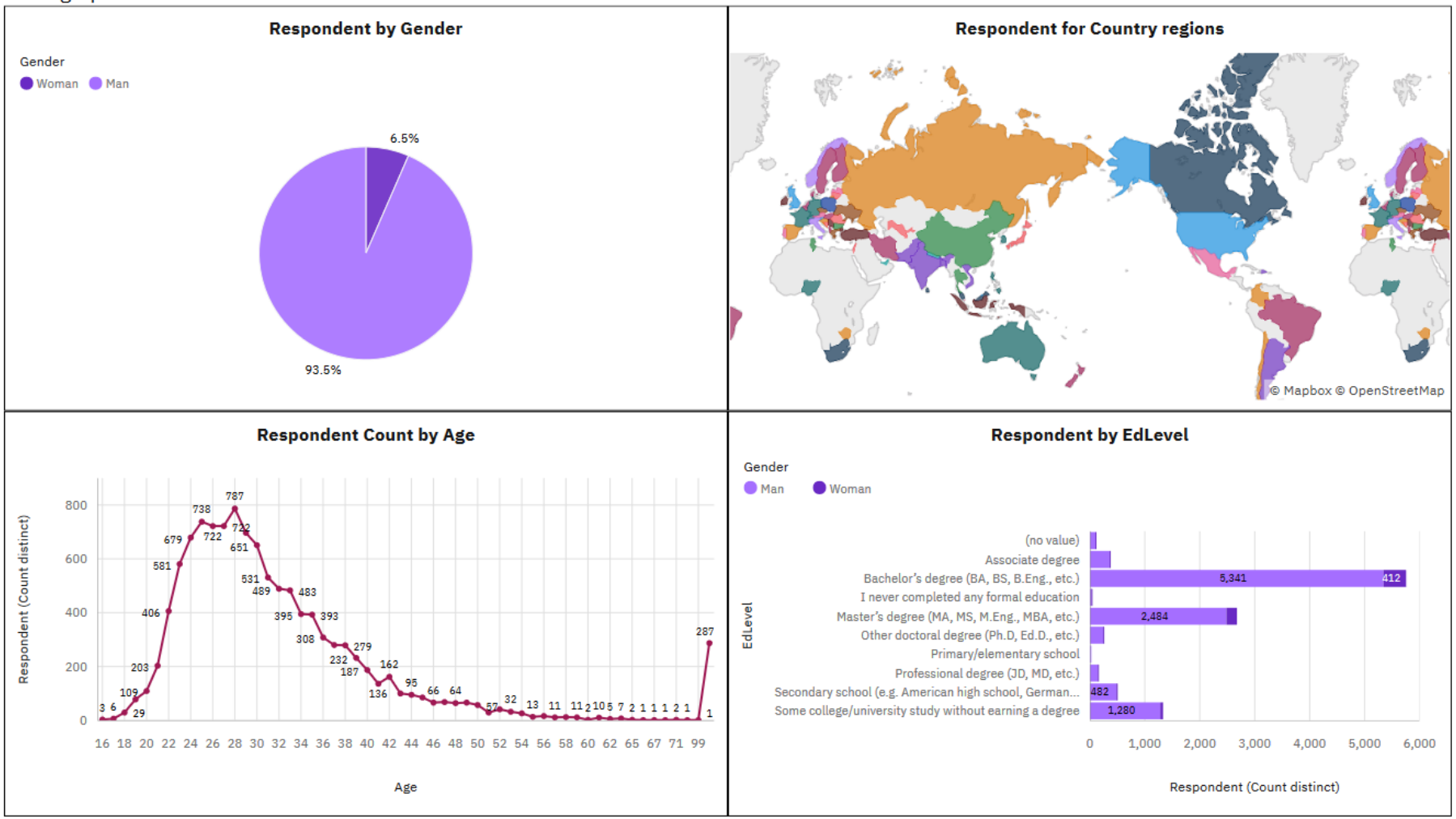
DASHBOARD TAB 2

Future Technology Trend



DASHBOARD TAB 3

Demographics



DISCUSSION

- Technology trends now
- New technology trend in the future
  - Possible Reskilling of the current workers
- Technology diversity across foreign countries
- Eliminating gender, age and education descrimination.

OVERALL FINDINGS & IMPLICATIONS

Findings

- Technology changes every year
- USA is the top technology country
- Huge gender discrimination in IT sector

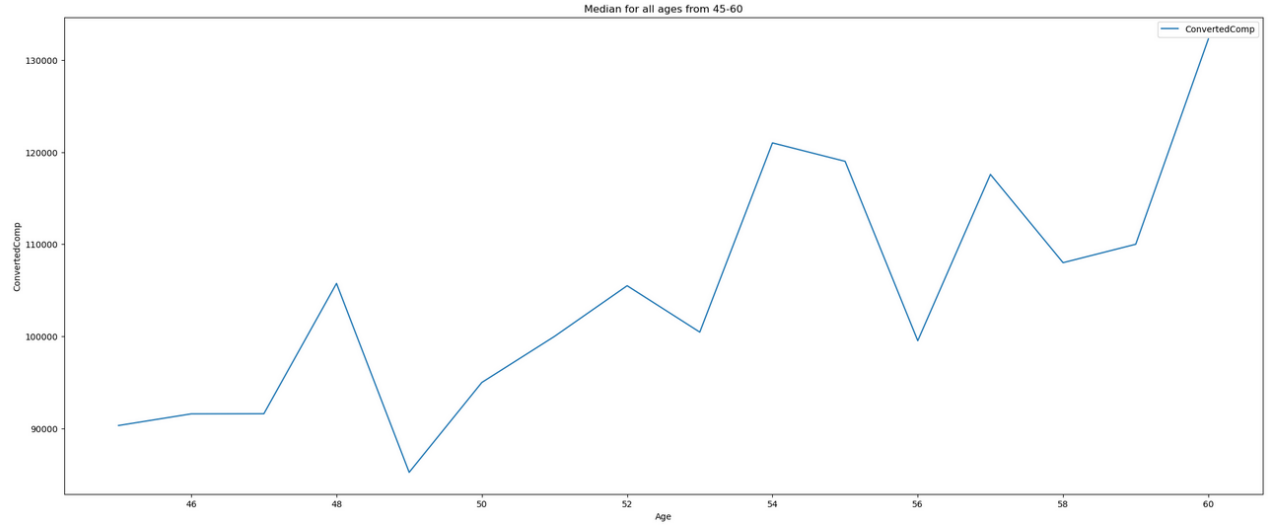
Implications

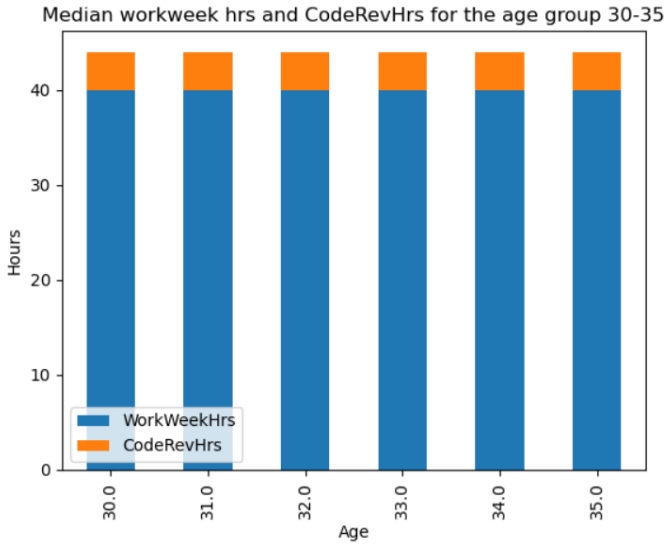
- It is need to be open to learn new skills
- Spreading the technology should be seen as a new opportunity
- Hiring new employers should not be decides based on gender or age

CONCLUSION

- New technology comes very quickly, it is necessary to be flexible and invest in reeducation the employers
- There is still huge gap between man and woman employed in IT sector
  - This trend could lead to not having enough workers or not hiring high educating one
- Difference in technology across the world could lead to greater economical, financial and healhcare differencies.

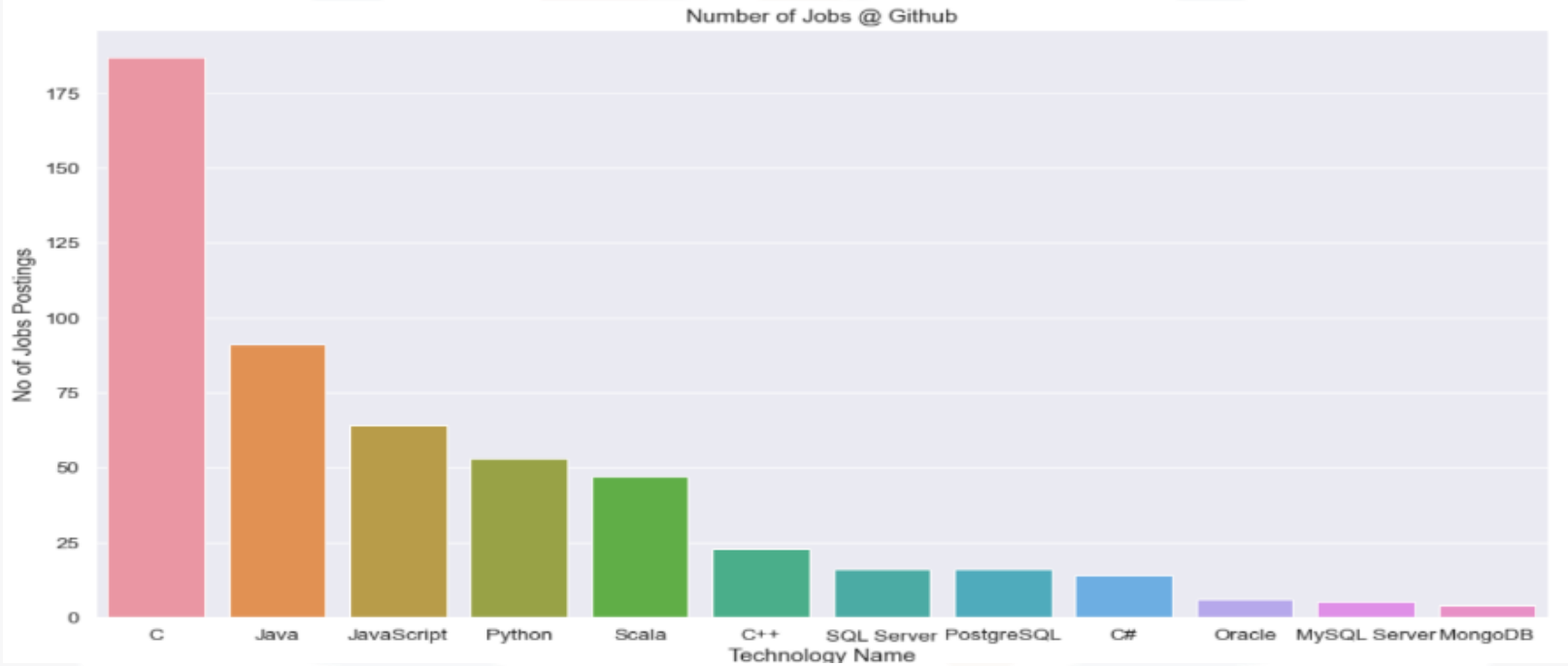
APPENDIX





Thank you, it was a lot of fun :)

JOB POSTINGS



POPULAR LANGUAGES

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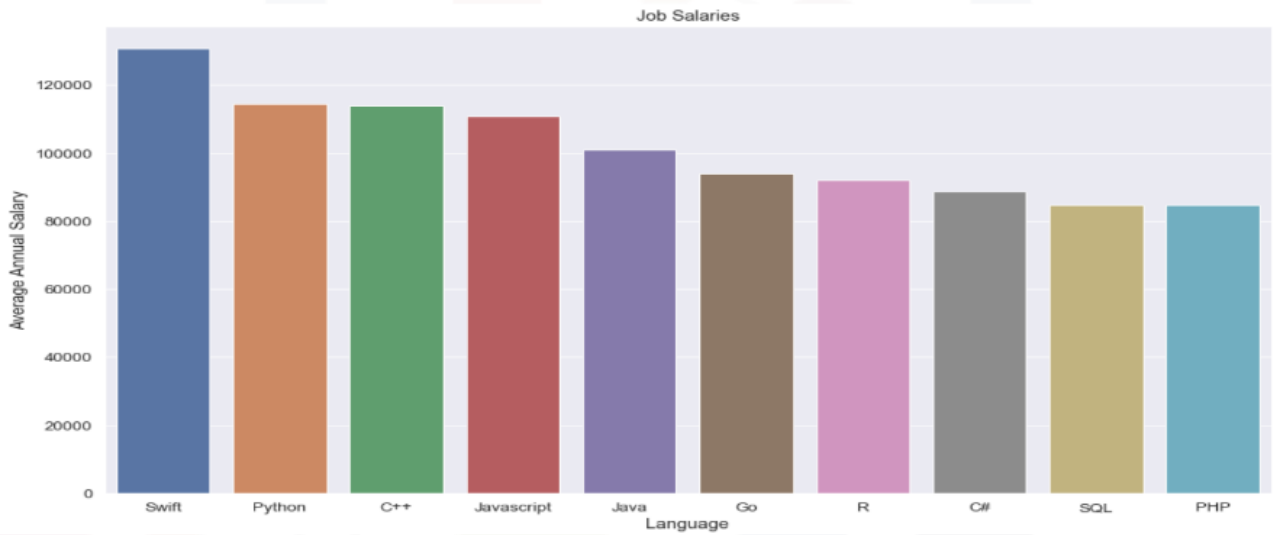
	Language	Average Annual Salary
1	Python	$114,383
2	Java	$101,013
3	R	$92,037
4	Javascript	$110,981
5	Swift	$130,801
6	C++	$113,865
7	C#	$88,726
8	PHP	$84,727
9	SQL	$84,793
10	Go	$94,082