



Trends In The Technology Field

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October 2022

OUTLINE



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

EXECUTIVE SUMMARY



- **Introduction**
 - Trends in programming languages and databases
- **Methodology**
 - Gathering Data
 - *Programming languages & Databases*
 - *Demographics survey*
 - Analyzing Data
 - *Cleaning and organizing data*
 - Visualizing Data
 - Tools
- **Results**
- **Dashboards**
- **Discussions**
- **Conclusions**

INTRODUCTION



- **What:**
 - The analysis of development languages, technologies and databases
- **Why:**
 - To keep up and follow the trends and new technological advancements.
 - Help the decision-making process concerning employees current and future needed skills
- **Who:**
 - IT and HR.
- **Support:**
 - Analyzed database
 - dashboards

METHODOLOGY



- **Gathering Data**
 - Scrapping GitHub Job Postings
 - Stack Overflow Developer 2019 Survey
 - Annual Salary by programming languages
- **Data Cleaning**
- **Creating Data Visualization**
- **Dashboards**
- **Analyzing Results**
- **Presentation**

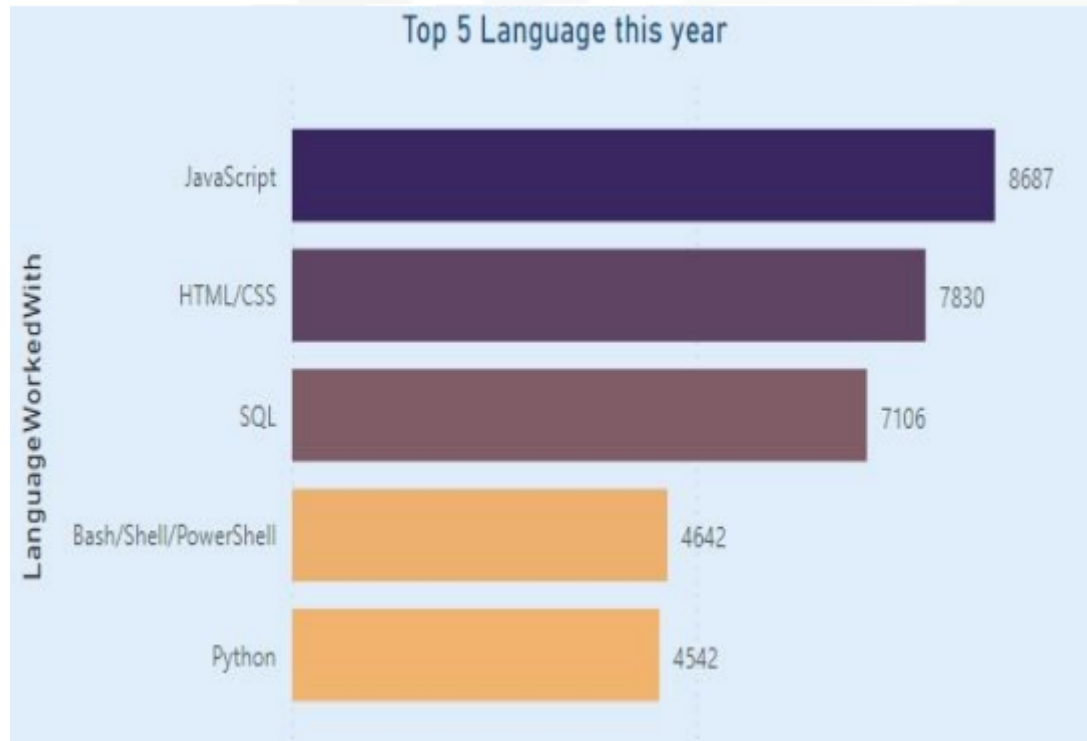
RESULTS

- Results in this analysis is taken out of two large chunks of data that hold a lot of information
- This data has been processed and the derived insights has been put into a dashboard

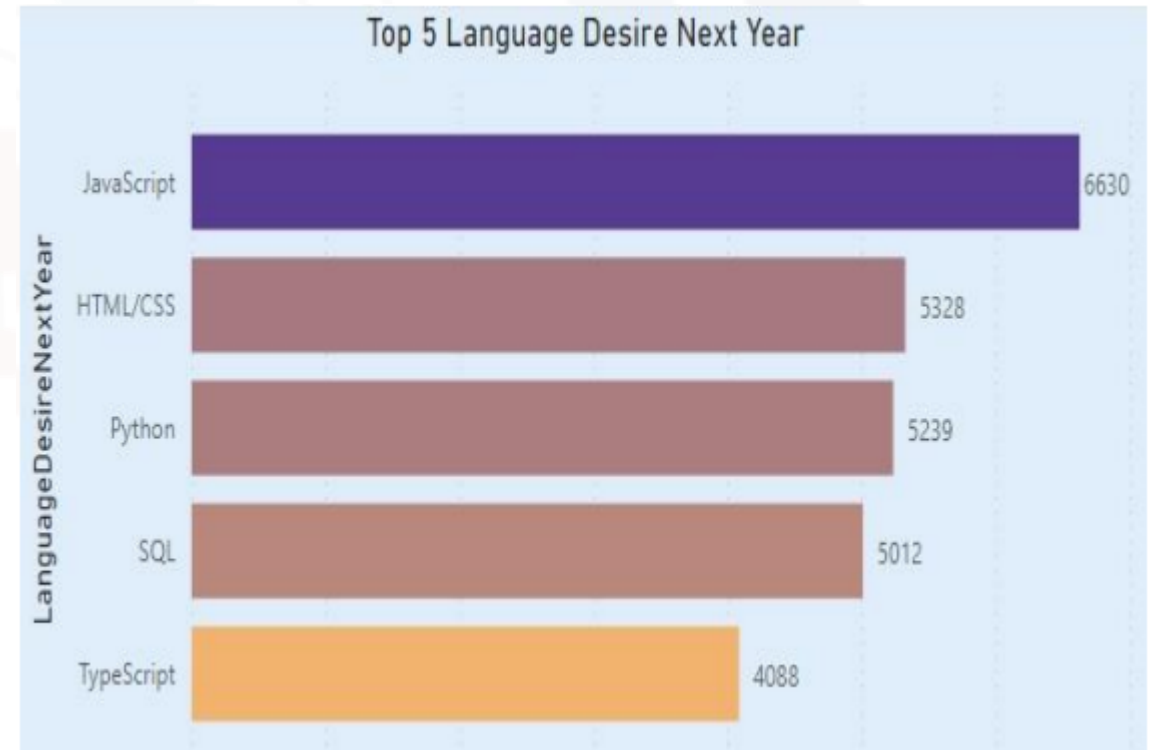
Response	MainBranch	Hobbyist	OpenSource	OpenSource	Employment	Country	Student	EdLevel	Undergraduate	EduOther	OrgSize	DevType	YearsCode	Age1stCode	YearsCode	CareerSat	JobSat	MgrIdiot	MgrMoney	MgrWant	JobSeek	LastHired	LastInt	FizzBuzz
4 I am a dev	No	Never	The quality	Employed	United States	No	Bachelor's	Computer	Taken an	100 to 499	Developer		3	16	Less than	Very satisfied	Slightly satisfied	Very confident	No	Not sure	I am not in	Less than	Write code	No
9 I am a dev	Yes	Once a month	The quality	Employed	New Zealand	No	Some college	Computer	Taken an	10 to 19	Database		12	11	4	Slightly satisfied	Slightly satisfied	Somewhat	No	Not sure	I am not in	Less than	Write any	Yes
13 I am a dev	Yes	Less than	OSS is, on	Employed	United States	No	Master's	Computer	Taken an	10 to 19	Data or business		17	11	8	Very satisfied	Very satisfied				I am not in	3-4 years	Complete	Yes
16 I am a dev	Yes	Never	The quality	Employed	United Kingdom	No	Master's	Computer	Taken an	100 to 499	Developer		10	17	3	Very satisfied	Slightly satisfied	Somewhat	No	No	I am not in	3-4 years	Interview	Yes
17 I am a dev	Yes	Less than	The quality	Employed	Australia	No	Bachelor's	Computer	Taken an	20 to 99	Developer		5	18	2	Slightly satisfied	Neither satisfied	Somewhat	No	No	I am active	Less than	Complete	No
19 I am a dev	Yes	Never	The quality	Employed	Brazil	No	Some college	Computer	Received	100 to 499	Developer		14	13	13	Very dissatisfied	Very satisfied	Very confident	No	No	I am not in	Less than	Interview	No
20 I am not a	No	Never	OSS is, on	Employed	Lithuania	No	Master's	Computer	Taken an	1,000 or more	Database		8	17	4	Very satisfied	Slightly dissatisfied	Very confident	No	I am already	I am not in	More than	Interview	No
22 I am a dev	Yes	Less than	OSS is, on	Employed	United States	No	Some college/university	Computer	Taken an	10,000 or more	Data or business		35	12	18	Slightly satisfied	Very dissatisfied	Somewhat	No	No	I am not in	More than	Interview	No
23 I am a dev	Yes	Less than	The quality	Employed	United States	No	Bachelor's	Computer	Taken an	10,000 or more	Developer		3	19	1	Slightly satisfied	Slightly satisfied	Very confident	No	Not sure	I am not in	Less than	Write any	No
24 I am a dev	Yes	Never	OSS is, on	Employed	Israel	No	Primary/elementary	Computer	Taken an	10 to 19	Developer		2	21	1	Very satisfied	Very satisfied	Very confident	No	No	I am not in	1-2 years	Write any	No
25 I am a dev	No	Never	OSS is, on	Employed	South Africa	No	Associate	Computer	Taken an	2-9 employees	Designer		2	16	1	Very satisfied	Very satisfied	Very confident	No	Not sure	I am not in	1-2 years	Interview	No
26 I am a dev	Yes	Less than	The quality	Employed	United States	No	Some college	Computer	Taught by	10,000 or more	Designer		12	8	8	Very satisfied	Very satisfied				I am not in	More than	Interview	No
29 I am a dev	Yes	Less than	OSS is, on	Employed	United States	No	Bachelor's	Computer	Taken an	10,000 or more	Developer		4	20	2	Very satisfied	Slightly satisfied	Very confident	Not sure	Not sure	I am not in	1-2 years	Write code	Yes
32 I am a dev	No	Never	The quality	Employed	United States	No	Associate	Computer	Complete	100 to 499	Developer		3	16	2	Slightly satisfied	Slightly satisfied	Somewhat	No	No	I am active	1-2 years	Write any	No
38 I am a dev	Yes	Never	OSS is, on	Employed	Czech Republic	No	Master's	Computer	Participated	10 to 19	Developer		30	14	22	Slightly satisfied	Very satisfied	Somewhat	Yes	I am already	I am not in	More than	Write any	No
39 I am a dev	Yes	Less than	The quality	Employed	United States	No	Bachelor's	Computer	Taken an	100 to 499	Database		30	6	23	Very satisfied	Very satisfied	Somewhat	No	No	I am not in	More than	Write any	No
43 I am a dev	Yes	Less than	OSS is, on	Employed	Spain	No	Bachelor's	Computer	Taken an	10,000 or more	Developer		9	15	2	Very dissatisfied	Slightly dissatisfied	Very confident	No	Yes	I am not in	Less than	Write any	No
44 I am a dev	Yes	Once a month	The quality	Employed	Germany	No	Bachelor's	Computer	Taken an	10,000 or more	Developer		26	12	19	Slightly satisfied	Neither satisfied	Not at all	No	Not sure	I am not in	More than	Interview	No
49 I am a dev	Yes	Less than	The quality	Employed	Serbia	Yes, full-time	Some college	Computer	Taught by	20 to 99	Database		15	15	8	Very satisfied	Very satisfied	Very confident	Yes	Not sure	I am not in	More than	Write any	Yes
50 I am a dev	Yes	Once a month	OSS is, on	Employed	India	No	Bachelor's	Computer	Received	10,000 or more	Developer		7	15	2	Slightly satisfied	Very satisfied	Very confident	Not sure	Yes	I am not in	1-2 years	Write code	No
53 I am not a	Yes	Less than	OSS is, on	Employed	United States	Yes, full-time	Secondary school	Computer	Taken an	500 to 999	Developer		5	10	3	Slightly satisfied	Slightly satisfied	Somewhat	Not sure	Not sure	I am not in	3-4 years ago		No
54 I am a dev	Yes	Once a month	OSS is, on	Employed	Sweden	No		Computer	Taken an	20 to 99	Developer		20	13	10	Very satisfied	Slightly satisfied	Very confident	Yes	No	I am not in	1-2 years	Interview	No
56 I am a dev	No	Never	The quality	Employed	China	No	Bachelor's	Computer	Taken an	10,000 or more	Developer		13	19	10	Slightly dissatisfied	Slightly dissatisfied	Somewhat	Yes	No	I am not in	1-2 years	Interview	No
57 I am not a	Yes	Never	OSS is, on	Employed	France	No	Master's	Computer	Taken an	10,000 or more	Developer		2	29	Less than	Very satisfied	Very satisfied	Not at all	No	No	I am active	NA - I am	Interview	No
60 I am a dev	Yes	Less than	OSS is, on	Employed	United States	No	Secondary school	Computer	Taught by	100 to 499	Developer		10	13	9	Slightly satisfied	Neither satisfied	Somewhat	Yes	No	I am not in	1-2 years	Complete	Yes
61 I am a dev	Yes	Less than	OSS is, on	Employed	United States	No	Some college	Computer	Taken an	20 to 99	Database		15	10	8	Very satisfied	Very satisfied	Very confident	No	Not sure	I am not in	More than	Interview	No
62 I am a dev	Yes	Less than	OSS is, on	Employed	Netherlands	Yes, full-time	Associate	Computer	Taken an	10,000 or more	Data or business		1	11	1	Very satisfied	Slightly dissatisfied	Not at all	No	Yes	I am not in	1-2 years	Write any	No

PROGRAMMING LANGUAGE TRENDS

Current Year



Next Year



PROGRAMMING LANGUAGE TRENDS - FINDINGS & IMPLICATIONS

Findings

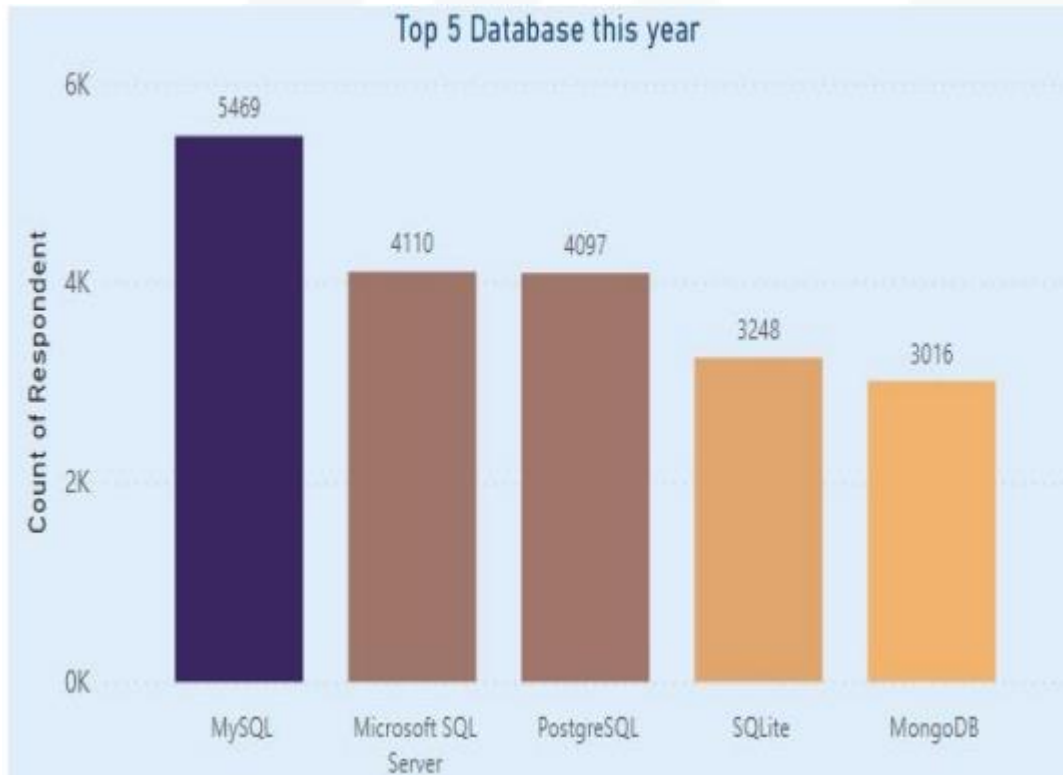
- PowerShell popularity is on the decline
- Python Will Pass SQL Next Year
- (JavaScript, HTML/CSS, SQL) popularity will continue to rise

Implications

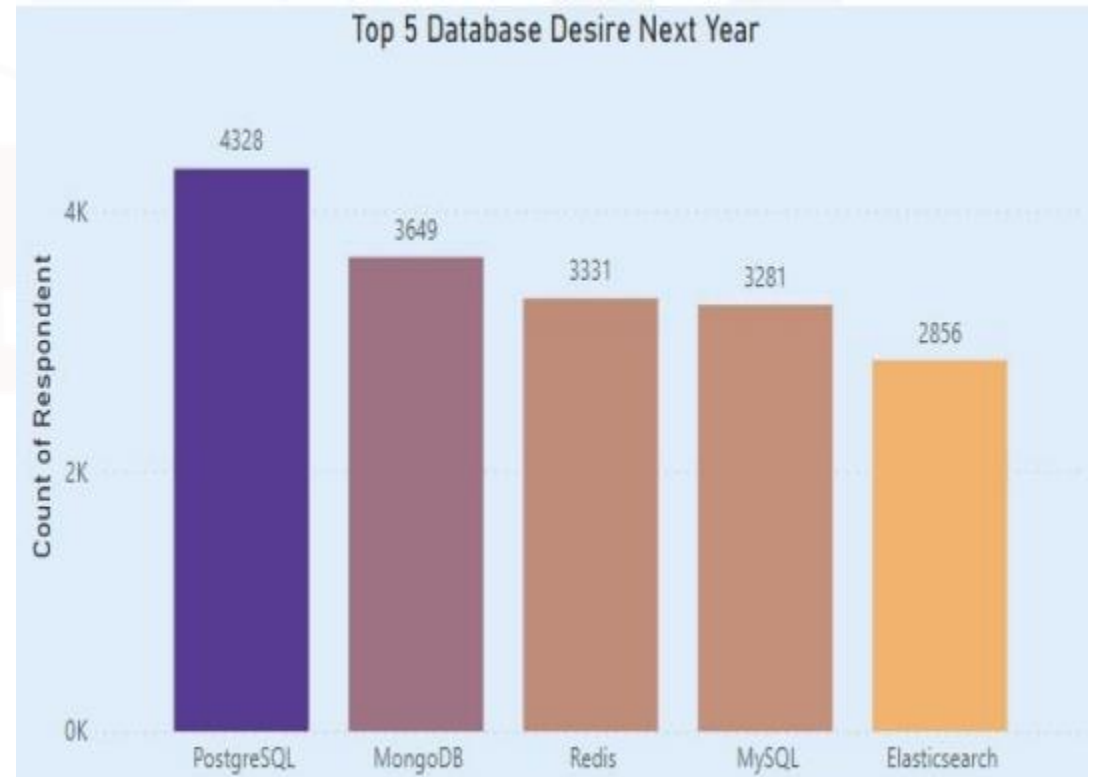
- Data Science technologies are getting more in demand
- Web development is in high demand
- SQL will still be needed even with Python for data manipulation

DATABASE TRENDS

Current Year



Next Year



DATABASE TRENDS - FINDINGS & IMPLICATIONS

Findings

- Elasticsearch will be getting a lot of attention in the next years
- NoSQL database are getting popular
- Microsoft SQL Server and MySQL will fade out

Implications

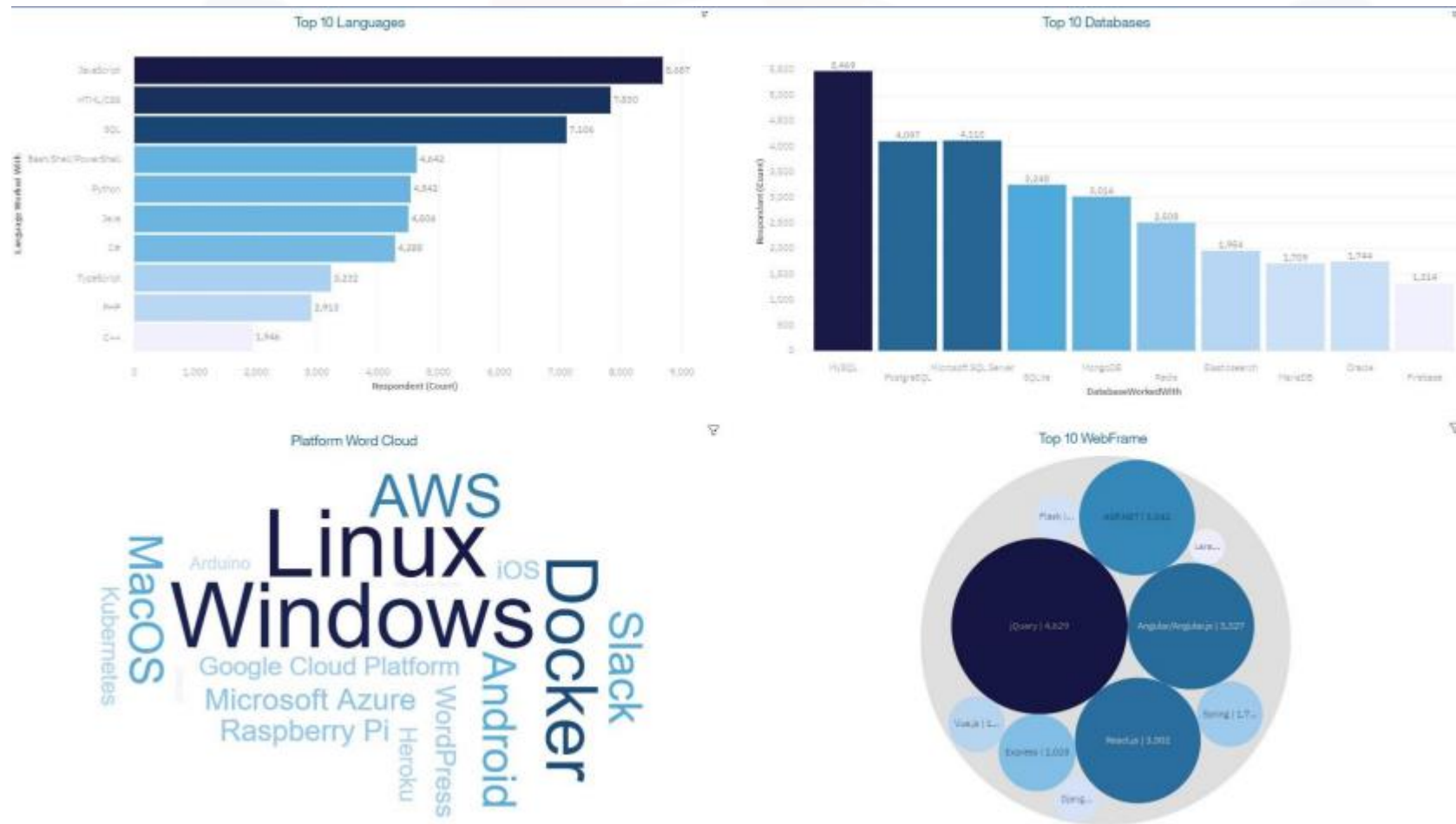
- There seems to be a trend in switching to open-source technologies
- More resources will be available using faster, easier, cheaper database technologies
- New technologies for fast processing will generate cheaper workloads

DASHBOARD

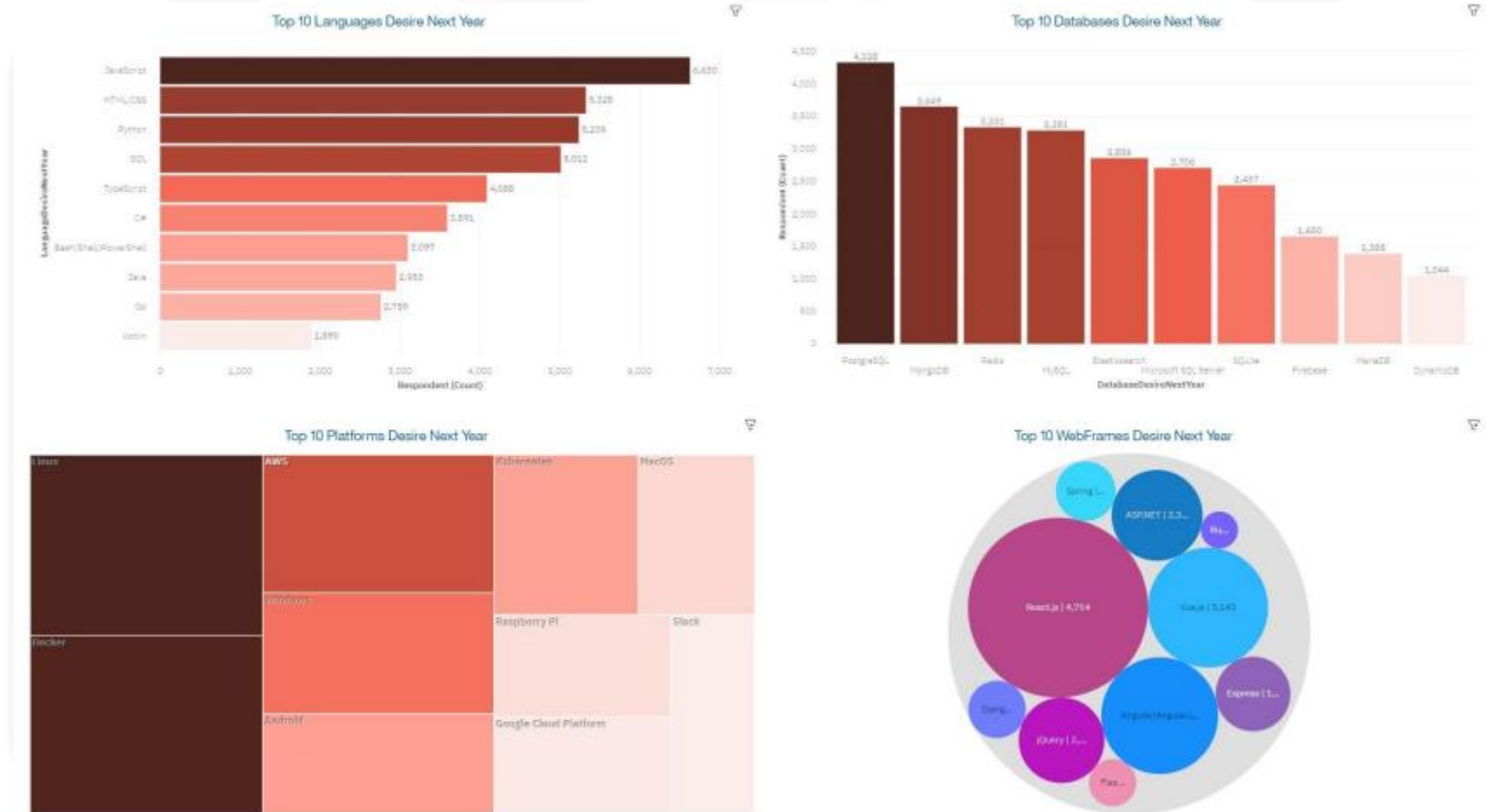


<https://dataplatform.cloud.ibm.com/dashboards/467eea90-cba9-4f93-a9cd-5fef95d0e90a/view/7824a60b2f8b11f041cbf6e407902a5229632655bbbbd15780837b4906697397f3611690c82a425f89160c66a0b9435f9d>

DASHBOARD TAB 1



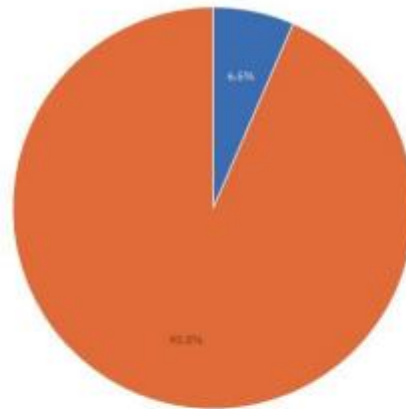
DASHBOARD TAB 2



DASHBOARD TAB 3

Respondents by Gender

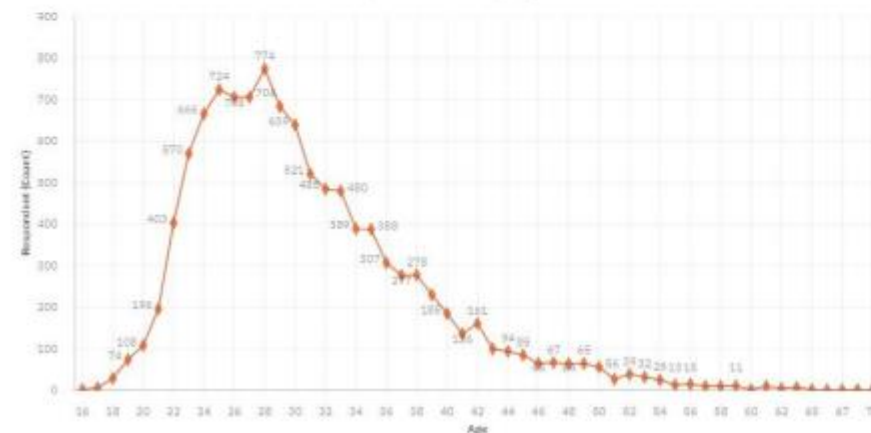
Gender
Woman Man



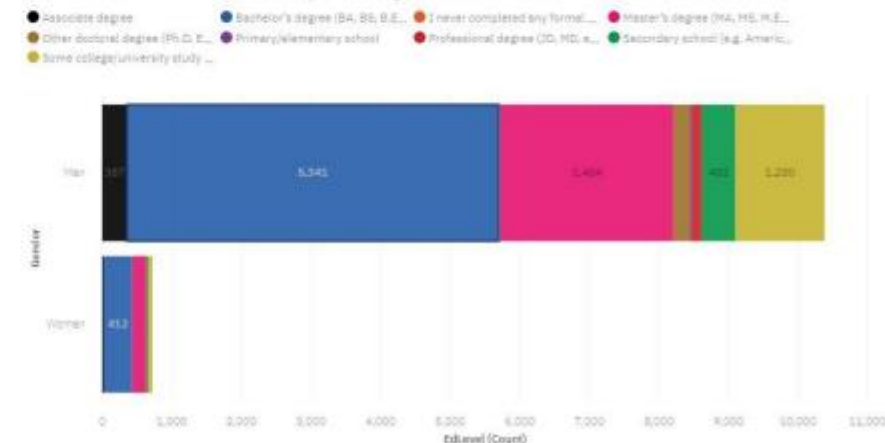
Respondents by Country



Respondents count by Age



Respondents by Gender and Education Level



DISCUSSION



- Current and Future Technology Trends
- Demographics in Technology jobs
- Training to be prepared
- Saving in products licensing

OVERALL FINDINGS & IMPLICATIONS

Findings

- Technologies are evolving fast all the times
- Employees will need constant training
- Disparity between gender
- Educated employees are concentrated in few countries (USA, INDIA)

Implications

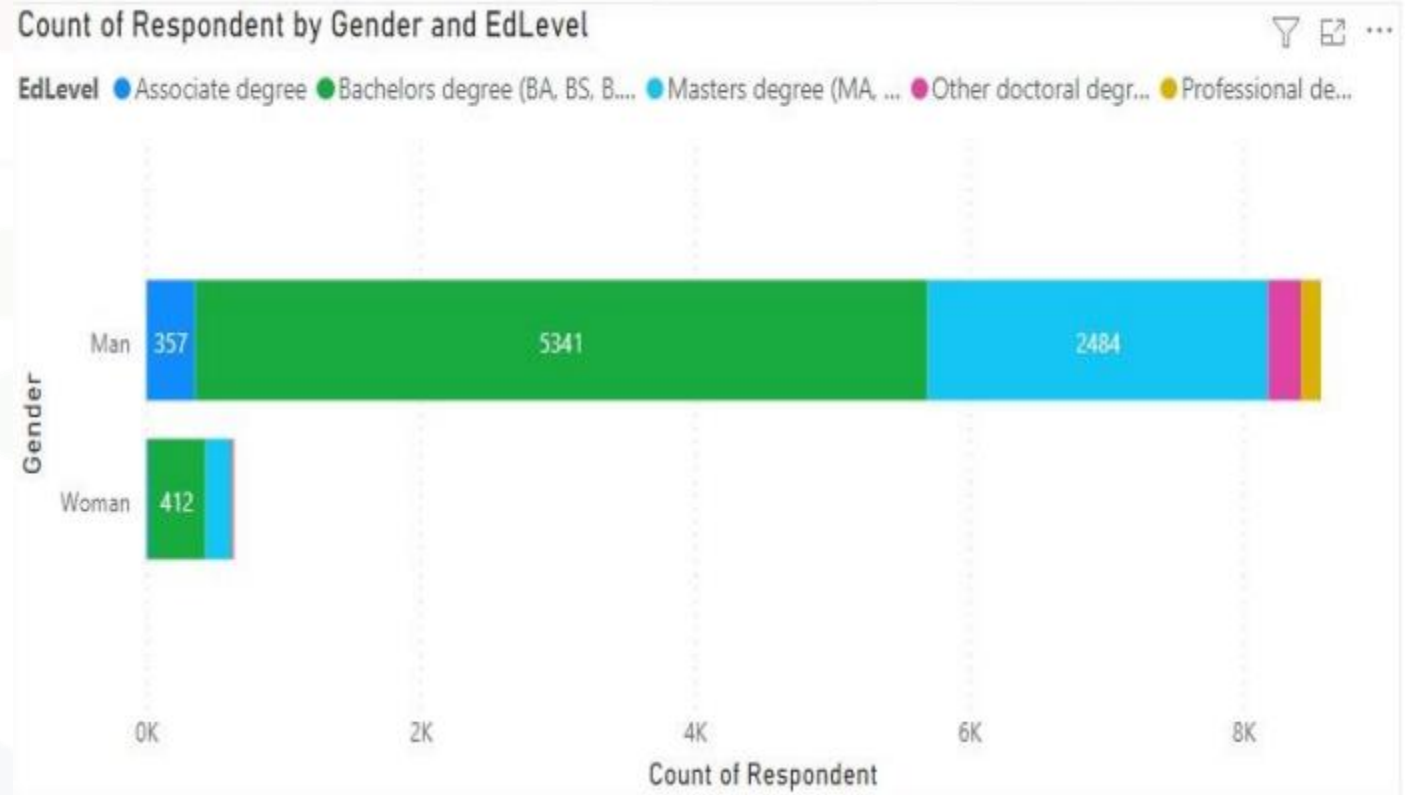
- Need to be following the trend with changes
- Changes will increase training cost but will lower licensing cost and increase efficiency
- Need to create better family friendly jobs to attract more women
- Open source and cloud platform is still the future

CONCLUSION

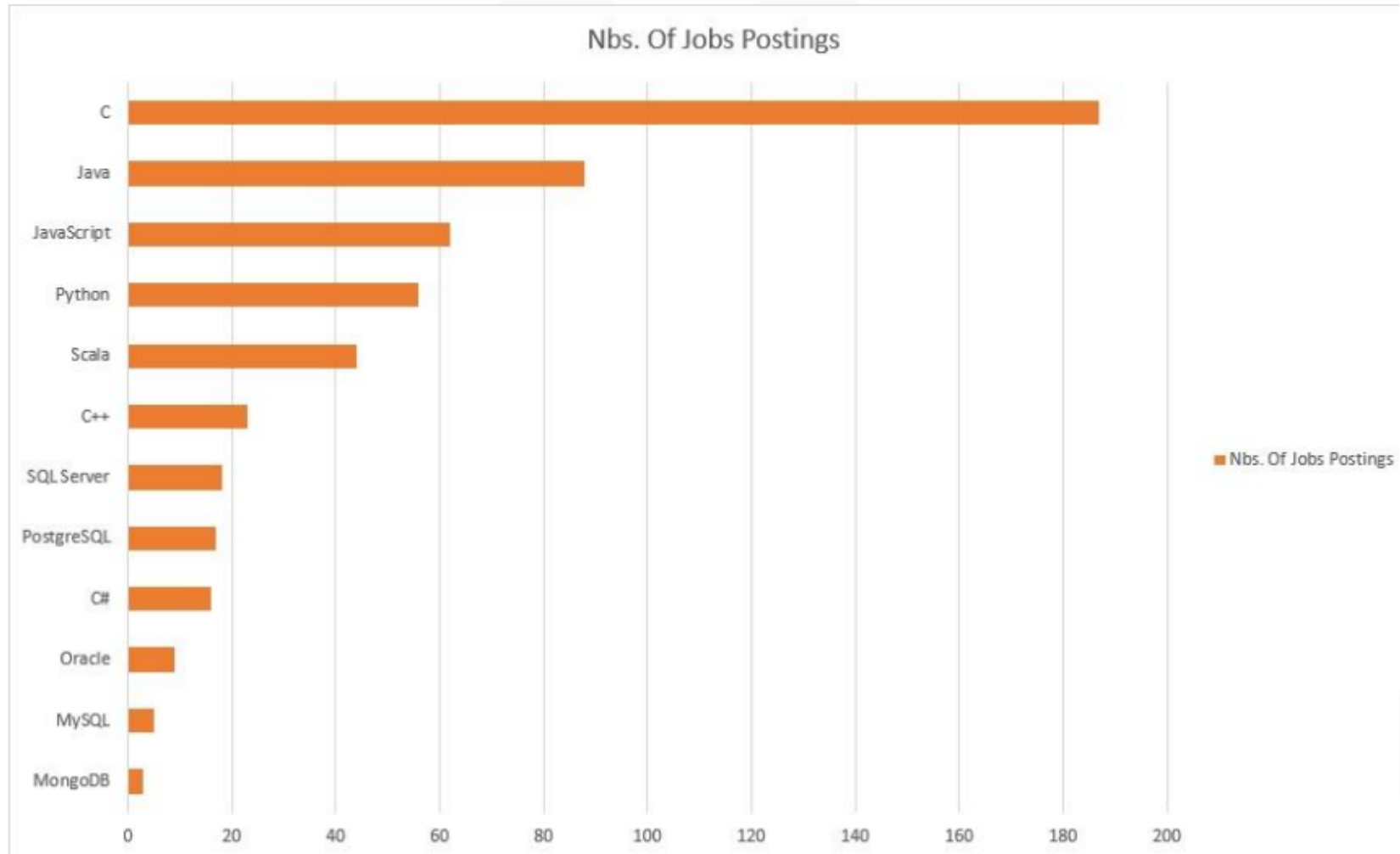


- Open-source technology trend
- Effect on the cost categories in the future
 - training vs. licenses
- Demographics overview
- Next up: What to prepare for next year

APPENDIX



JOB POSTINGS



POPULAR LANGUAGES

