EXPLORING THE PERSPECTIVES OF THE HIGH TECH INDUSTRY

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OUTLINE

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  - Dashboard

- Discussion
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EXECUTIVE SUMMARY

- After analyzing the 2019 Stack Overflow Developer Survey

- Most Popular Programming Languages:

- Java Script, HTML/CSS, SQL

- Emerging Trends
  - MongoDB, Python

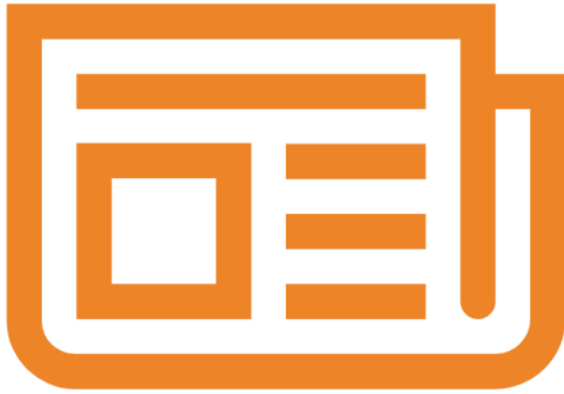- Although the data is prone to change rapidly and dramatically

INTRODUCTION

- Trends in High Tech are sometimes too hard to track, so with proper visualisations make a life for industry employers much simpler.

- Data-driven management and decision-making is very important to stay afloat and to succeed

- This report is designed to serve these purposes

METHODOLOGY

- [The data is taken from 2019 Stack Overflow Developer](#) Survey

- The visualizations were made using IBM Cognos Analytics. The graphs were made with the consideration to useful data, so non-values were not shown

- The Appendix consists of Bar Charts made using Excel after digging the data with Jobs API and Web Scraping and formatting it with Pandas. IBM Skills network was used as a source. And finally the data for the AI pie chart was taken from www.visualcapitalist.com

RESULTS

After analyzing Hi-Tech Trends survey we've came-up with an interactive dashboards showing the **current state**, **prognosis for the future** and the **demographic data** of respondents.

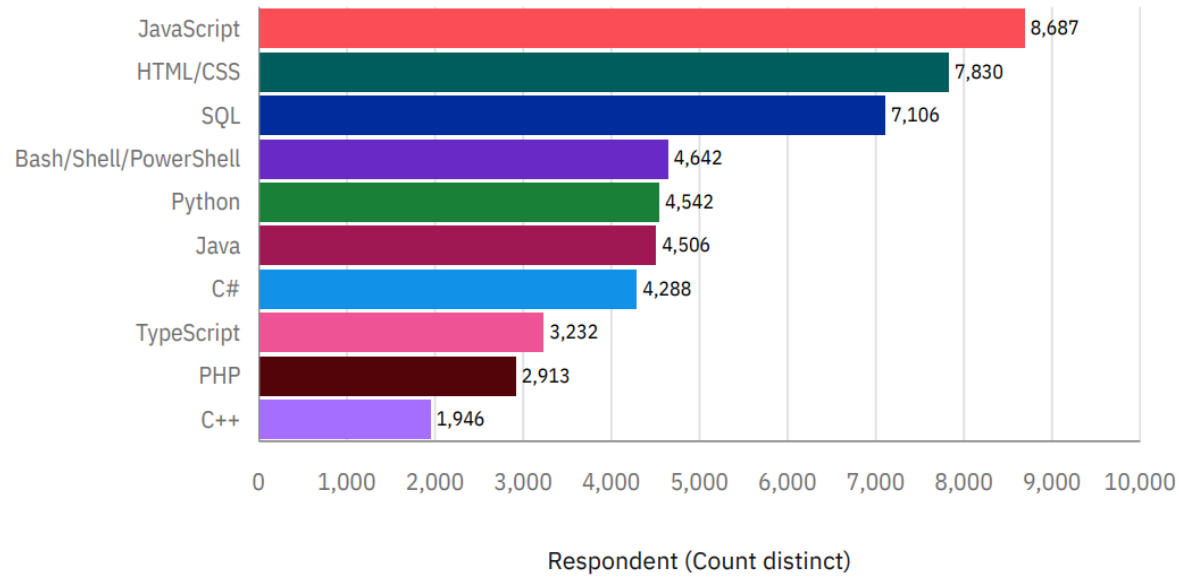The Dashboards could be adjusted by many parameters such as: country, gender, education.

The detailed report is presented below.

PROGRAMMING LANGUAGE TRENDS
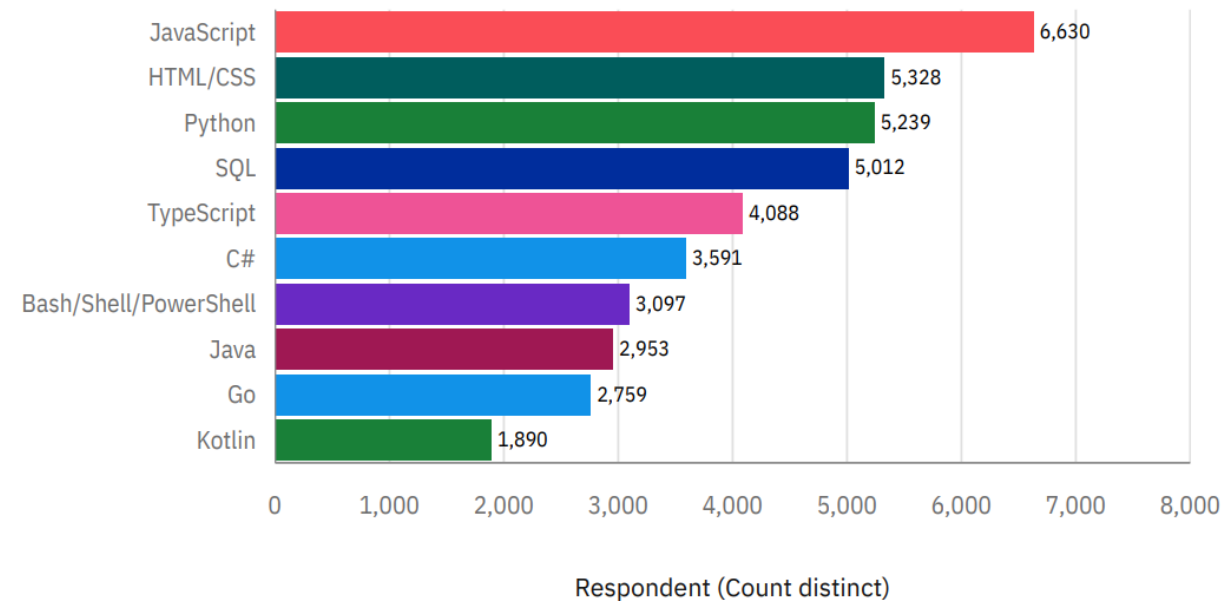
Top 10 Languages Respondents Worked With

Language	Respondent (Count distinct)
JavaScript	8,687
HTML/CSS	7,830
SQL	7,106
Bash/Shell/PowerShell	4,642
Python	4,542
Java	4,506
C#	4,288
TypeScript	3,232
PHP	2,913
C++	1,946

Current Year

Top 10 Language Desire Next Year by Reposndents

Language	Respondent (Count distinct)
JavaScript	6,630
HTML/CSS	5,328
Python	5,239
SQL	5,012
TypeScript	4,088
C#	3,591
Bash/Shell/PowerShell	3,097
Java	2,953
Go	2,759
Kotlin	1,890

Next Year

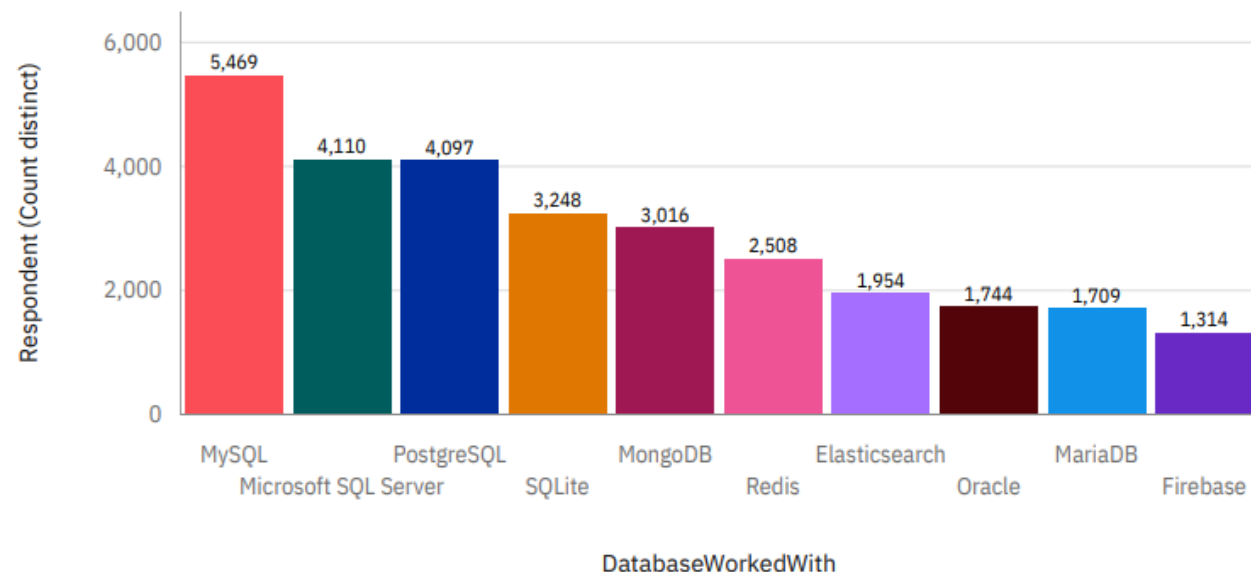# PROGRAMMING LANGUAGE TRENDS - FINDINGS & IMPLICATIONS

Findings

- **JavaScript** and **HTML/CSS** vastly used for writing web-pages are remaining strong

- **8 out of 10** top programming languages have remained the same

- To draw any further conclusion we would need more data

Implications

- There is still a dominance of these languages on the market

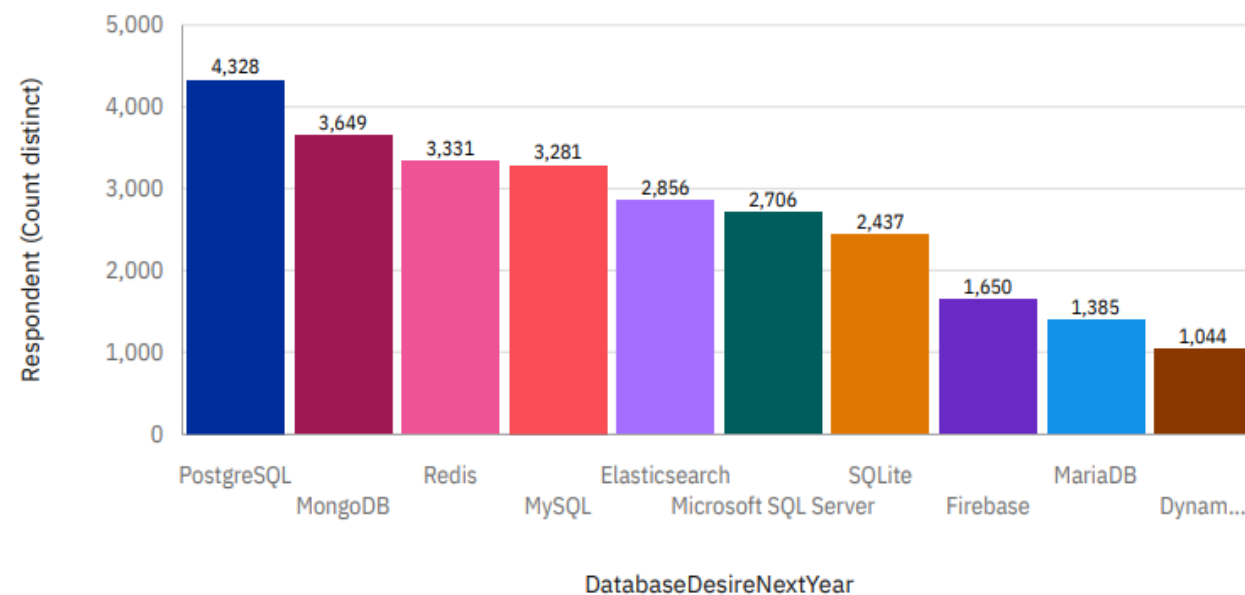- The over-all distribution remains basically the same

DATABASE TRENDS – FINDINGS & IMPLICATIONS

Findings

- **My SQL,** which was coming at the first place, in the next year is pushed to **4th**

- **MongoDB** has come from 5th place to second

- **PostgreSQL** is leading in the next year

Implications

- There is a need to keep a hand on pulse for future changes

- Quickly gaining popularity databases are an object of interest

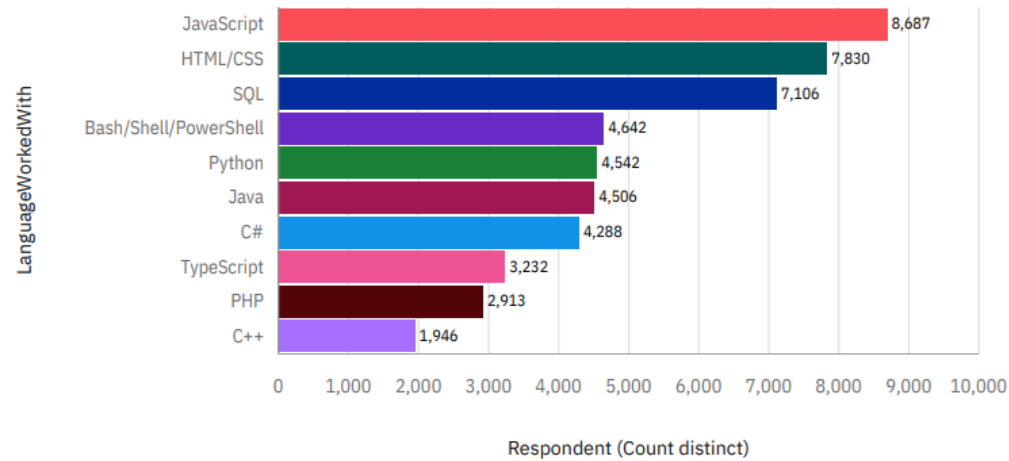- It's maybe relevant to switch interest to PostgreSQL databases

DASHBOARD

[GitHub link of the Cognos dashboard](#)

DASHBOARD TAB 1

Current Technology Usage

Top 10 Languages Respondents Worked With

Language	Count
JavaScript	8,687
HTML/CSS	7,830
SQL	7,106
Bash/Shell/PowerShell	4,642
Python	4,542
Java	4,506
C#	4,288
TypeScript	3,232
PHP	2,913
C++	1,946

Respondent (Count distinct)

Top 10 Databases Respondents Worked With
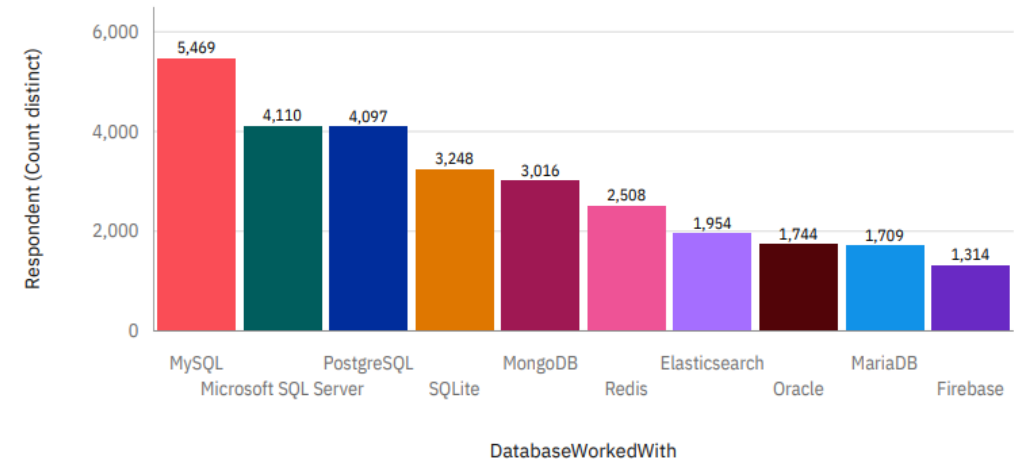
Database	Count
MySQL	5,469
Microsoft SQL Server	4,110
PostgreSQL	4,097
SQLite	3,248
MongoDB	3,016
Redis	2,508
Elasticsearch	1,954
Oracle	1,744
MariaDB	1,709
Firebase	1,314

Platforms Respondents Worked With

Top 10 WebFrameWorkedWith Respondents Worked With
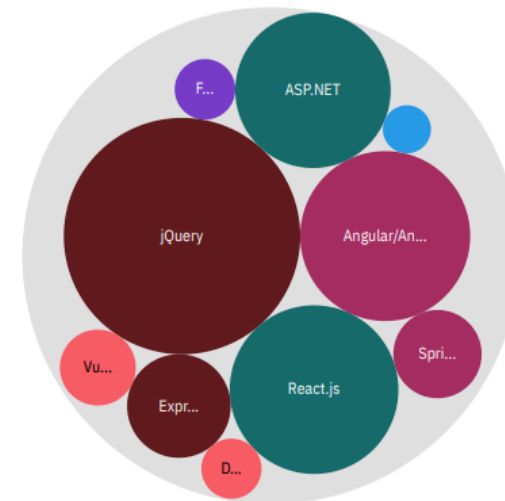
DASHBOARD TAB 2

Future Technology Trend

Top 10 Language Desire Next Year by Reposndents

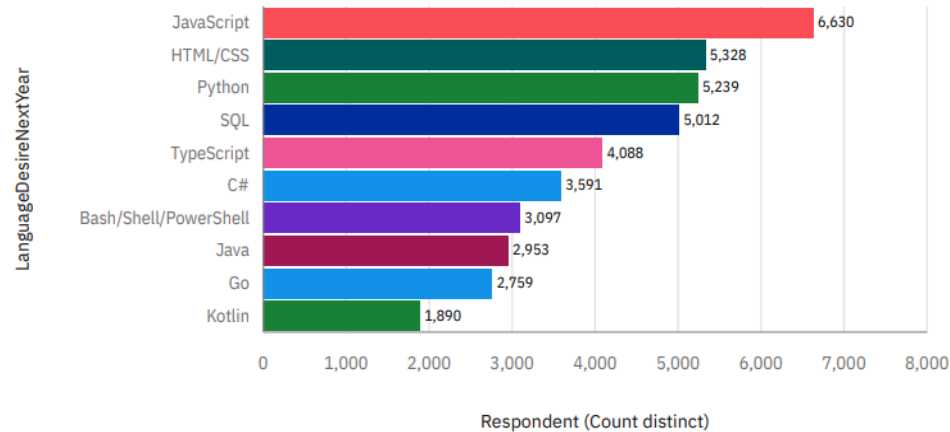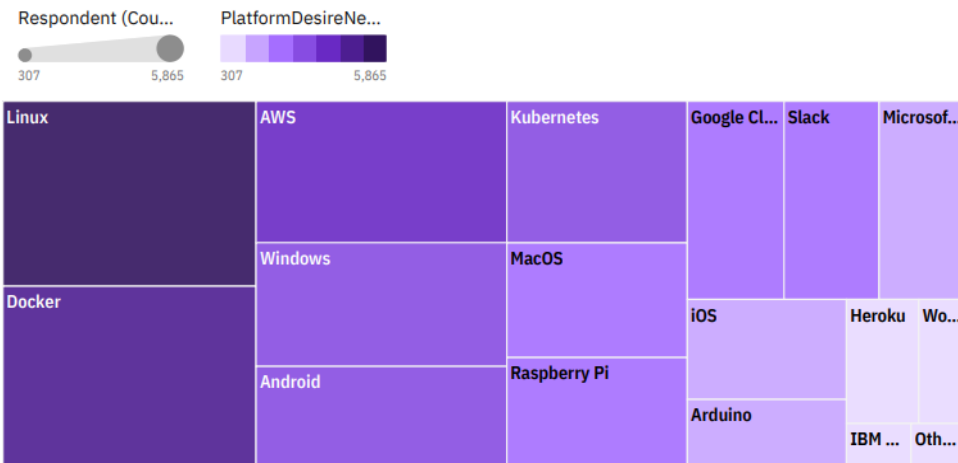| Language	Respondent (Count distinct)
JavaScript	6,630
HTML/CSS	5,328
Python	5,239
SQL	5,012
TypeScript	4,088
C#	3,591
Bash/Shell/PowerShell	3,097
Java	2,953
Go	2,759
Kotlin	1,890

Top 10 Database Desire Next Year by Reposndents

Database	Respondent (Count distinct)
PostgreSQL	4,328
MongoDB	3,649
Redis	3,331
MySQL	3,281
Elasticsearch	2,856
Microsoft SQL Server	2,706
SQLite	2,437
Firebase	1,650
MariaDB	1,385
Dynam...	1,044
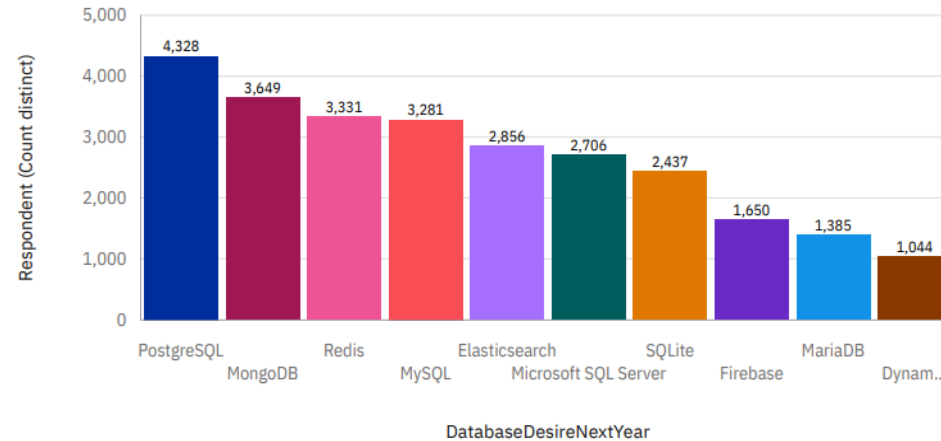
Platform Desire Next Year by Reposndents

Respondent (Cou... 307 — 5,865
PlatformDesireNe... 307 — 5,865

Linux, Docker, AWS, Windows, Android, Kubernetes, MacOS, Raspberry Pi, Arduino, Google Cl..., Slack, iOS, Heroku, Microsof..., Wo..., IBM..., Oth...

Top 10 WebFrame Desire Next Year by Respondents

Respondent (Cou... 970 — 4,714

WebFrameDesireNextYear
- ASP.NET
- Angular/Angular.js
- Django
- Express
- Flask
- React.js
- Ruby on Rails
- Spring
- Vue.js
- jQuery

React.js, Vue.js, ASP..., Angul..., S..., D..., jQu..., Ex...
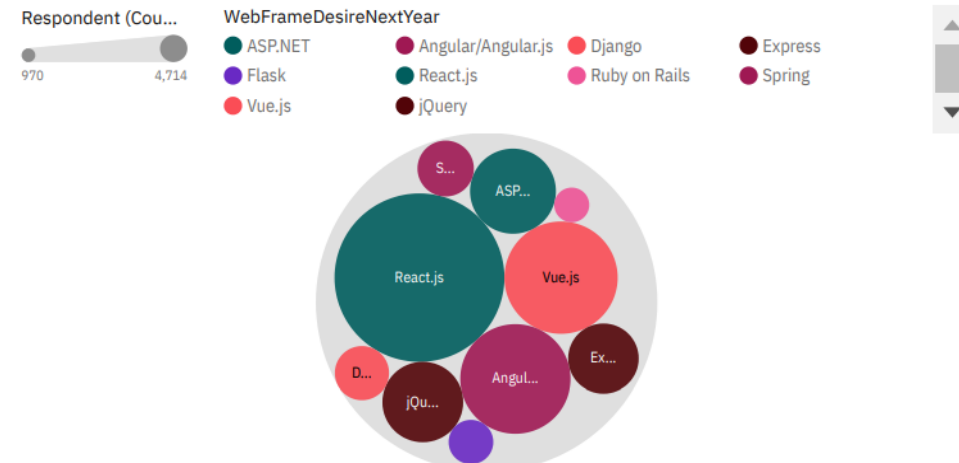
DASHBOARD TAB 3

Demographics

Respondent by Gender

Gender
- Woman;Man;Non-binary...
- Woman;Man
- Woman;Non-binary, gen...
- Man;Non-binary, gender...
- Non-binary, genderquee...
- Woman
- Man

6.5%

92.5%
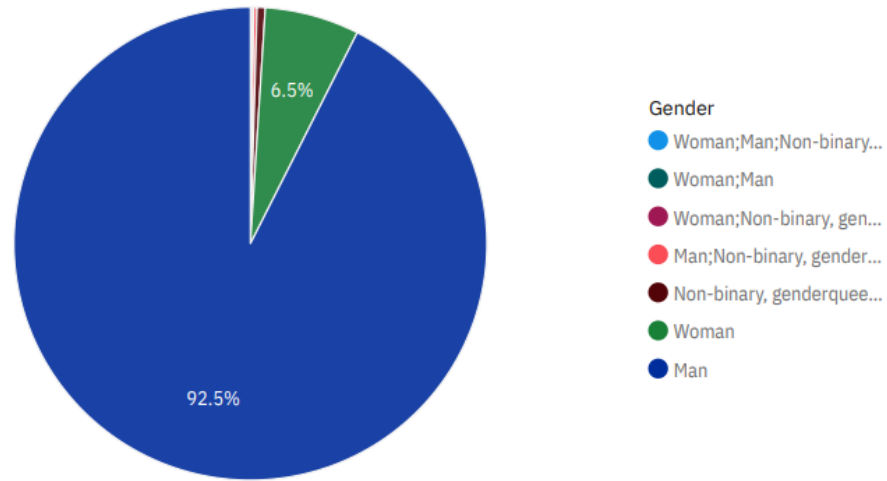
Countries of Respondents

Respondent (Cou...

1   3,127

Country
- Australia   Israel
- Austria   Iran
- United Arab Emirates   Hungary
- Mexico   Indonesia
- Norway   Nepal
- South Africa   Albania

© Mapbox © OpenStreetMap
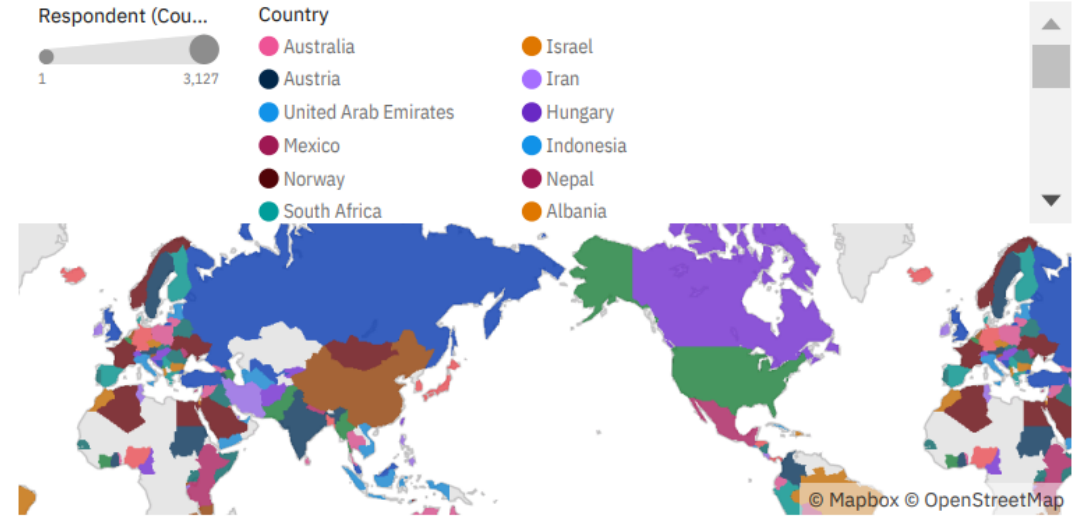
Respondent Count by Age

Respondent (Count distinct)

800
600
400
200

3 6 29 109 203 406 581 679 722 738 787 722 651 531 489 395 308 483 393 232 187 279 136 162 95 66 64 57 32 13 11 11 2 10 5 7 2 1 1 1 2 1 287 1

16 18 20 22 24 26 28 30 32 34 36 38 40 42 44 46 48 50 52 54 56 58 60 62 65 67 71 99

Age

Respondent by Gender colored by Education Level

EdLevel
- Associate degree   Bachelor's degree (BA, BS, B.Eng.,...   I never completed any formal edu...
- Master's degree (MA, MS, M.Eng., ...   Other doctoral degree (Ph.D, Ed.D....   Primary/elementary school
- Professional degree (JD, MD, etc.)   Secondary school (e.g. American ...   Some college/university study wit...

Gender

Man — 5,341   2,484   1,280
Man;Non-binary, genderqueer, or gender non-conform...
Non-binary, genderqueer, or gender non-conforming
Woman
Woman;Man
Woman;Man;Non-binary, genderqueer, or gender non...
Woman;Non-binary, genderqueer, or gender non-conf...

0   2,000   4,000   6,000   8,000   10,000

Respondent (Count distinct)

OVERALL FINDINGS & IMPLICATIONS

Findings

- Gender distribution is not very diverse

- Also there's no such geographical diversity seen

- Still there is dominance of people with academic education present in this field

Implications

- So we could do with some attracting other genders to be development professionals

- Same thing with international specialists

- For future findings we should be aware of the current situation as the state of things tends to change very quickly sometimes
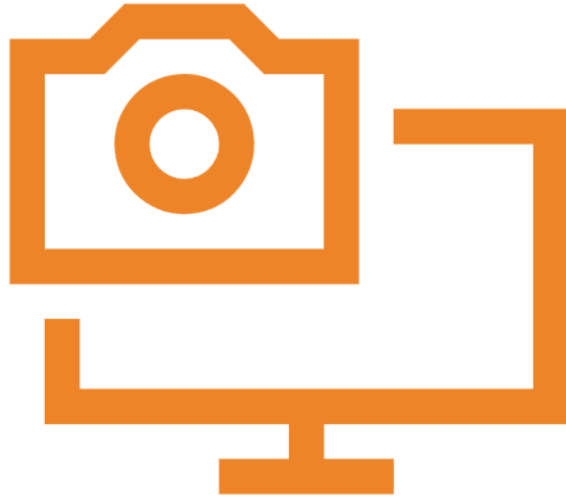
CONCLUSION

- PostgreSQL, MongoDB, Redis and MySQL are considered promising in terms of future use.

- Java Script, HTML/CSS, SQL and Python are retaining their high popularity.

- Gender and geographical diversity could be something to pursue in High tech

- In terms of a platform – predominant are Linux, AWS and Docker.

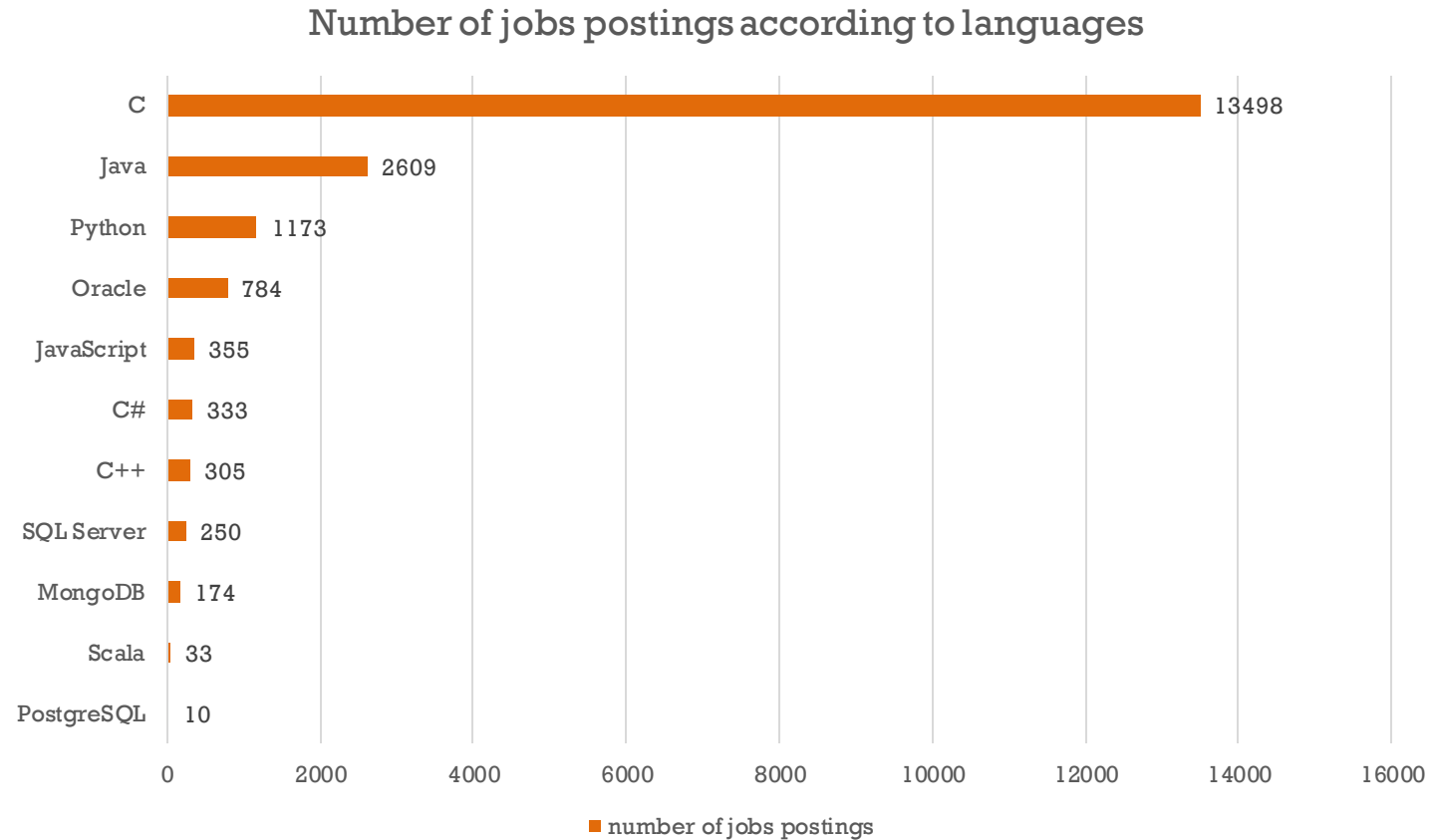- And the most desired webframes are React.js, Angular and Vue.js.

APPENDIX

- Below is additional info: popular languages and job postings

JOB POSTINGS

Number of jobs postings according to languages

Job posting data collected using Job API presented as a bar chart here

POPULAR LANGUAGES

Average Annual Salary for developers

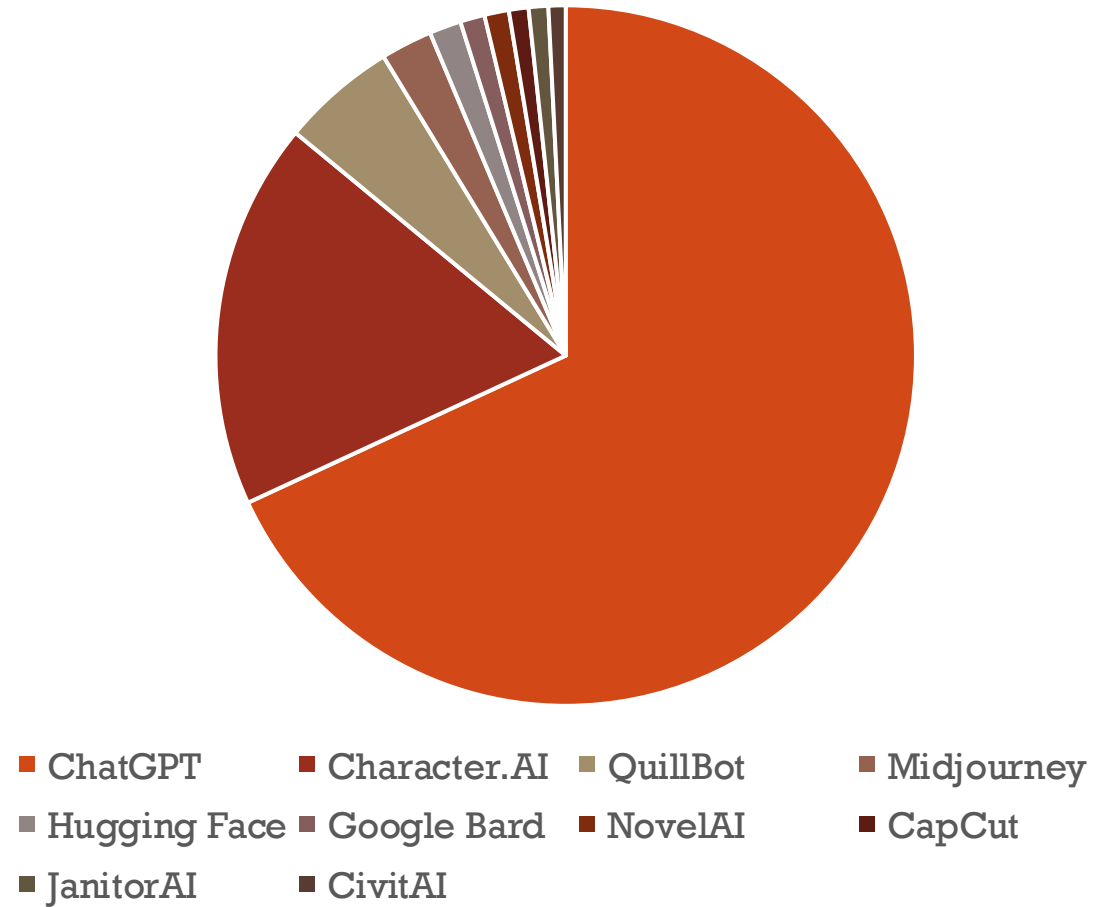| Language	Average Annual Salary
Swift	$130,801
Python	$114,383
C++	$113,865
Javascript	$110,981
Java	$101,013
Go	$94,082
R	$92,037
C#	$88,726
SQL	$84,793
PHP	$84,727

■ Average Annual Salary

Job postings data collected using web scraping presented as a bar chart.

POPULAR AI TOOLS

Share of Industry in AI sector

- ChatGPT
- Character.AI
- QuillBot
- Midjourney
- Hugging Face
- Google Bard
- NovelAI
- CapCut
- JanitorAI
- CivitAI

Popularity of various AI. Taken from www.visualcapitalist.com