



Analysis of Global Tech Trends

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OUTLINE



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- Discussion
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EXECUTIVE SUMMARY



This document will present findings on the following

- Programming languages
 - Current usage
 - Future usage
 - Demographics
- Databases
- Global trends
- Gender gaps

INTRODUCTION



- Analysis of tech/software trends
- ID current popular skills
- ID tech shift in the short-term future
- Web frameworks popularity
- Software engineering platform popularity

METHODOLOGY



- Data was collected from sources such as
 - Stack Overflow Developer (2019),
 - GitHub job postings,
 - Programming languages annual salaries
- Data was in different formats:
 - .csv
 - .xlsx
- EDA was conducted initially followed by the usual suite:
 - Data cleaning
 - Data visualization
- Analysis tools
 - Python (Anaconda distribution)
 - Excel
 - IBM Cognos Analytics

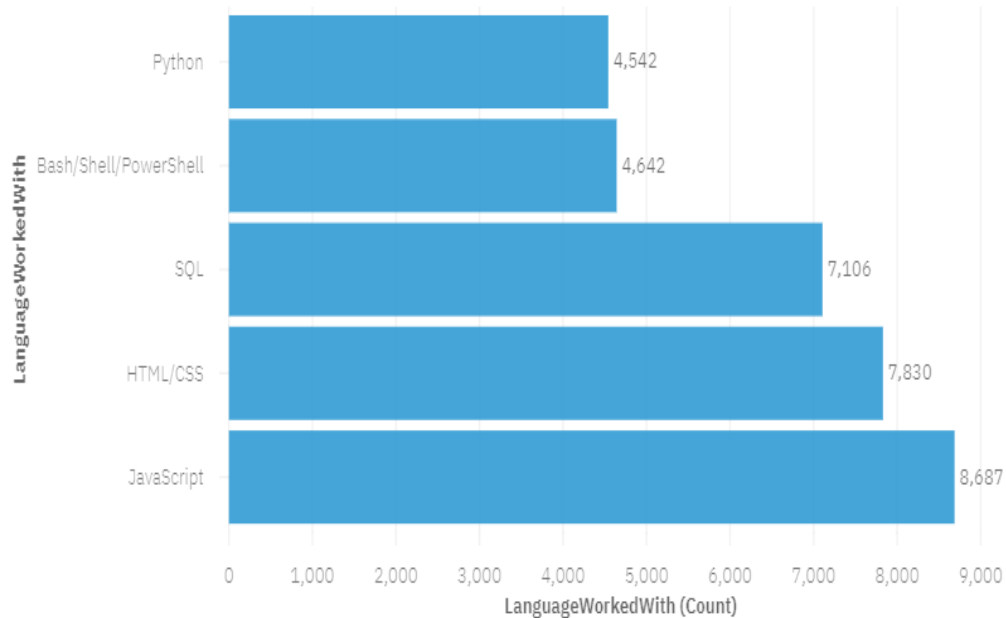
RESULTS

- The results from all the datasets are presented in the next section.
- The trends are backed up by both visual and numerical evidence.
- The analysis is predominantly on:
 - Programming languages
 - Databases
 - Frameworks
 - Demographics (gender)

PROGRAMMING LANGUAGE TRENDS

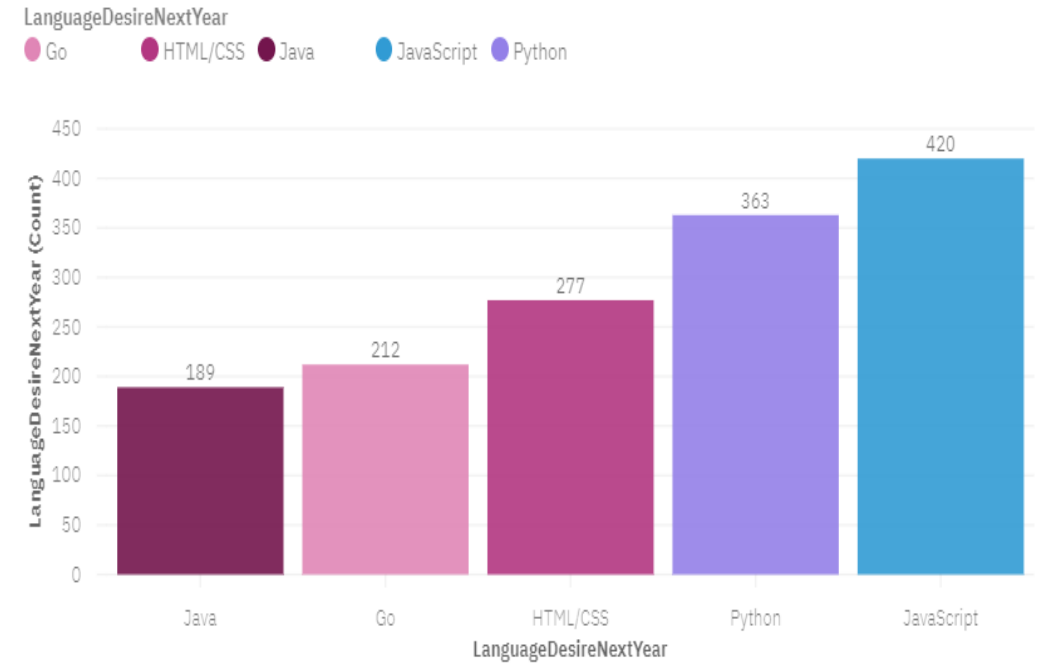
Current Year

Top 5 languages worked with



Next Year

Top 5 language desire next year



PROGRAMMING LANGUAGE TRENDS - FINDINGS & IMPLICATIONS

Findings

- JS, HTML/CSS are currently the most popular
- Python and Java are more popular than C++
- SQL programming is currently very popular

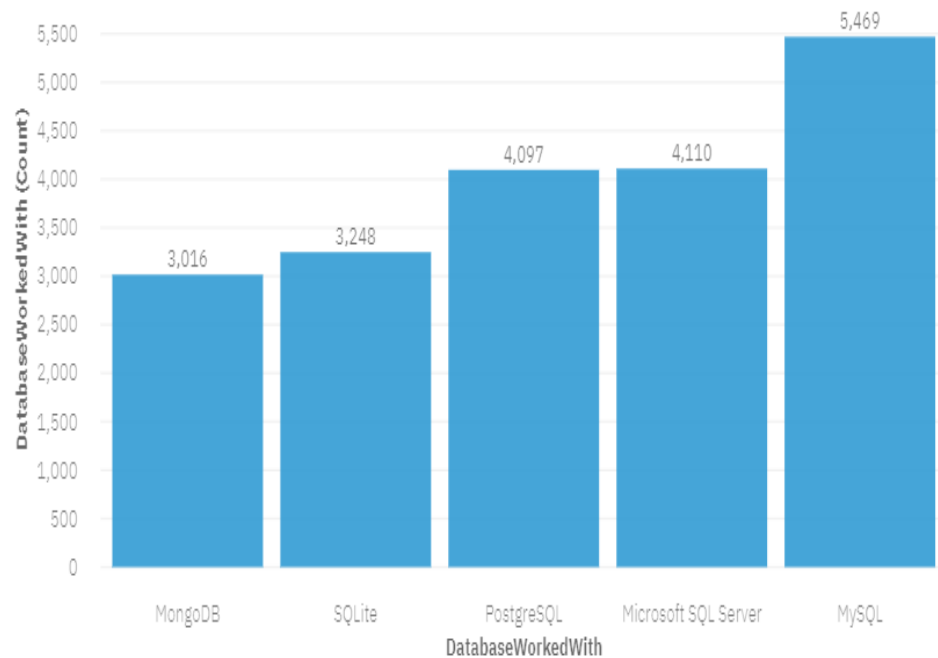
Implications

- Web development skills are in high demand
- Python-related tasks such as Big Data analysis and AI are driving this trend. Java is mostly software in devices
- Scripting languages will become more popular

DATABASE TRENDS

Current Year

Top 5 databases worked with

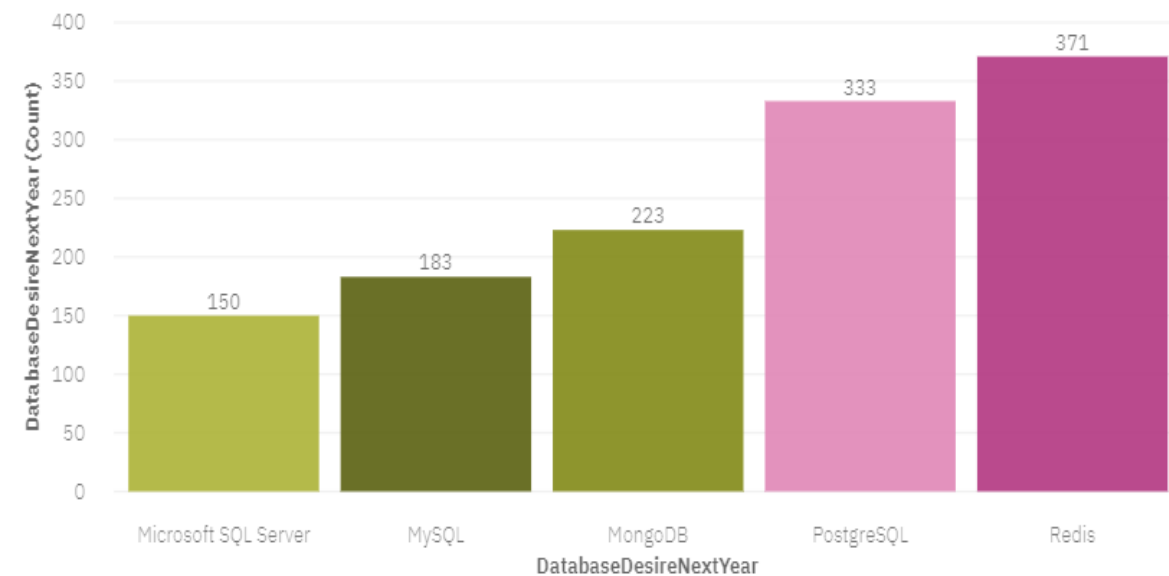


Next Year

Top 5 database desire next year

DatabaseDesireNextYear

Microsoft SQL Server MongoDB MySQL PostgreSQL Redis



DATABASE TRENDS - FINDINGS & IMPLICATIONS

Findings

- SQL based databases are very popular
- MongoDB and Redis are growing in popularity
- PostgreSQL still very popular

Implications

- Workforce in data engineering needs to upskill
- Companies need to plan to migrate to using these databases
- Open-source databases and software will eventually be more commonplace

DASHBOARD



<https://dataplatform.cloud.ibm.com/dashboards/8d0681de-0c97-4d27-a150-161faeb40910/view/5264c13605b523e151f7b1e4079179057b33730cb0bbd10189d17b495b677897a96010c0c87c425ade44036afbee175ccd>

DASHBOARD TAB 1: CURRENT TECH USAGE

Projects / Capstone Project / M5 Dashboard



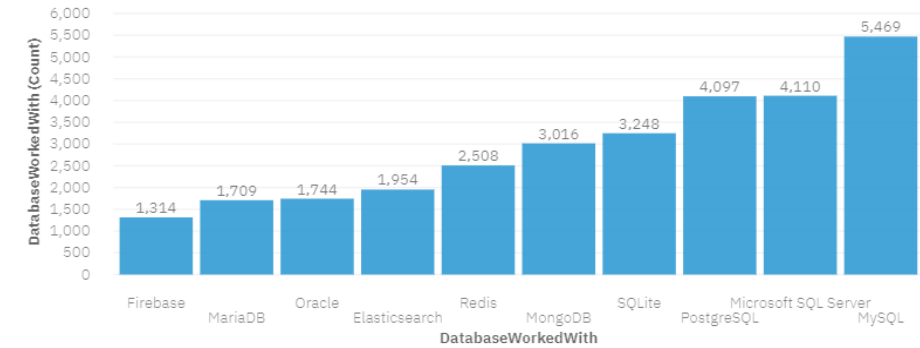
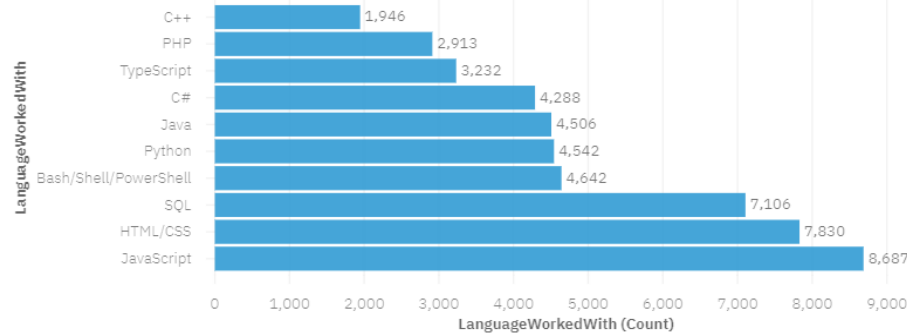
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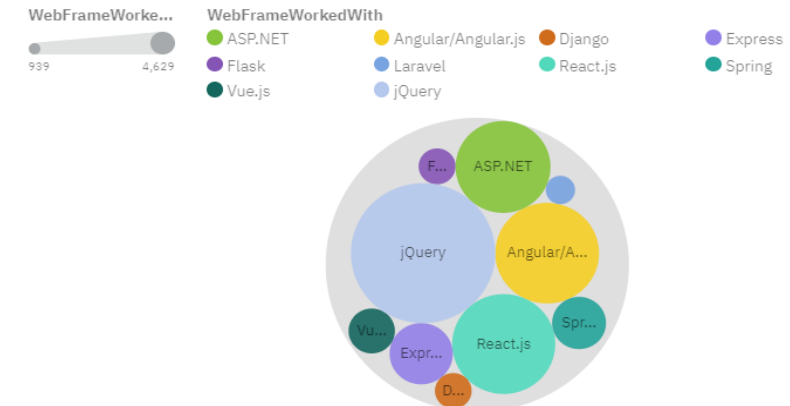
Current Technology Usage Future Technology Trend Demographics +



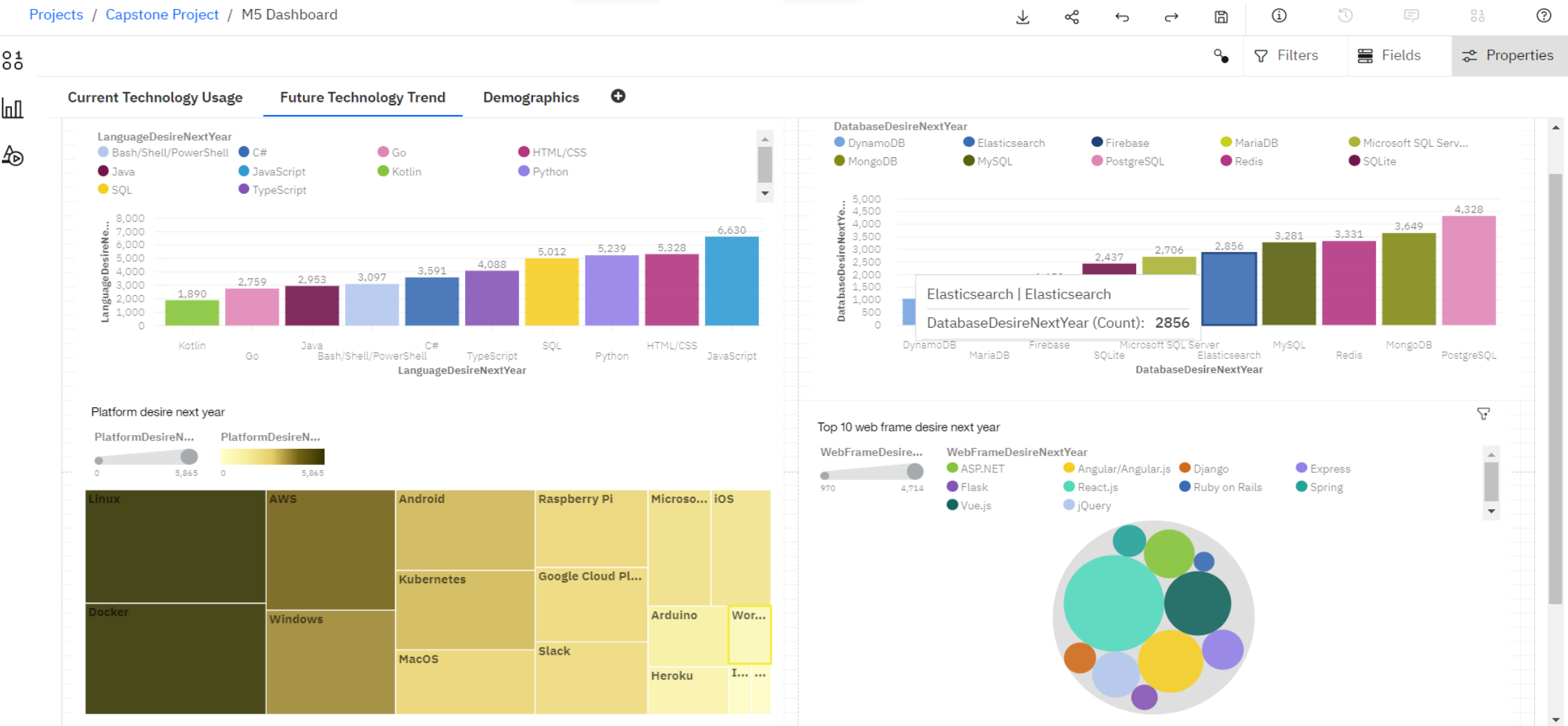
Platform worked with



Top 10 web framework worked with



DASHBOARD TAB 2: FUTURE TECH TREND



DASHBOARD TAB 3 : DEMOGRAPHICS

Projects / Capstone Project / M5 Dashboard



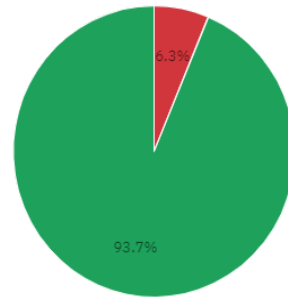
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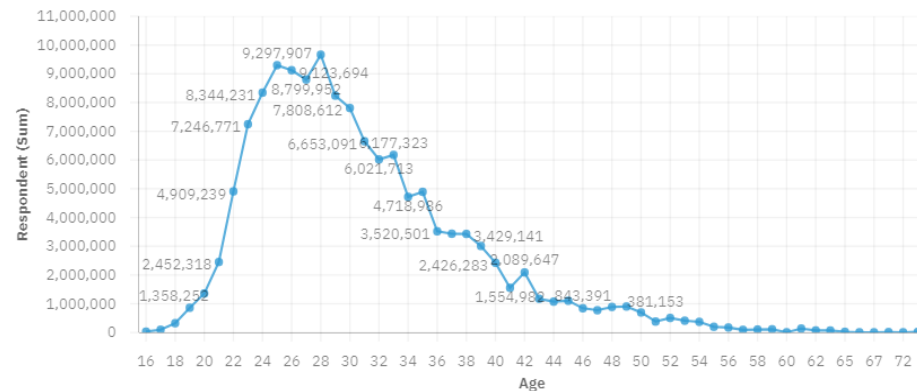
Current Technology Usage Future Technology Trend Demographics

Respondent by gender

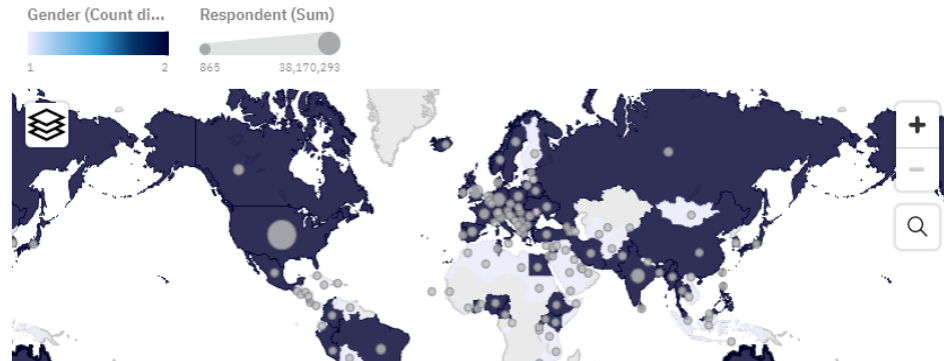
Gender
Woman Man



Respondent count by age

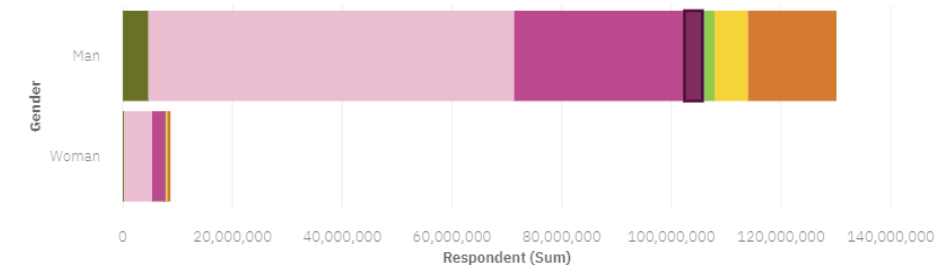


Respondent count for countries



Respondent count by gender and formal education level

EdLevel
Associate degree Bachelor's degree (BA, BS, B.E... I never completed any formal ...
Master's degree (MA, MS, M.E... Other doctoral degree (Ph.D, E... Primary/elementary school
Professional degree (JD, MD, e... Secondary school (e.g. Americ... Some college/university study ...



DISCUSSION



Current trends:

- Web development languages top
- C++ way behind Python and Java
- SQL-based databases are the most popular
- Windows and Linux are currently the extensively used platforms
- Docker more popular than Kubernetes
- JQuery is the most popular web framework

DISCUSSION



Future trends:

- Web development languages still top-JS and HTML/CSS
- Python and Java still among top 10 desirable-C++ not in
- SQL-based databases still most desirable skills
- Docker and Linux significantly more popular than Windows
- Docker far more in demand than Kubernetes
- React.js the framework of the future

DISCUSSION



Demographics:

- Tech and software has biased presentation
- Significantly more men than woman (87 percentage points more!)
- Breakdown by country (global analysis) shows the same bias
- Americas and Eastern Europe are heavily represented
- Age range: 16-54.
- Most tech developers are btwn 23-30
- Majority of the either gender have Bachelor's
- Followed by 'no formal education' respondents

OVERALL FINDINGS & IMPLICATIONS

Findings

- Tech sector is very dynamic
- Huge gender gap
- New tech like Docker and Linux gaining huge traction

Implications

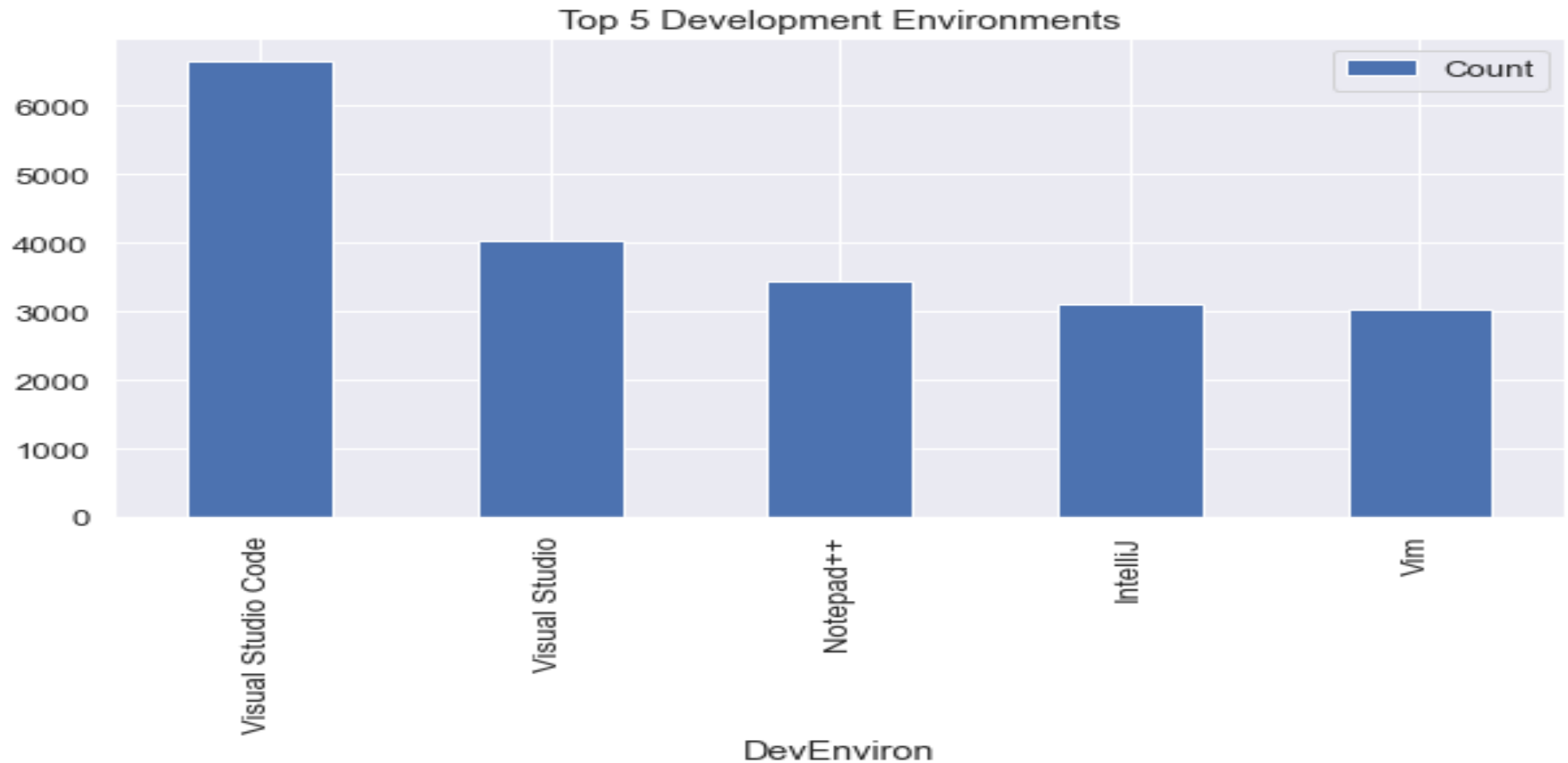
- Stakeholders need to be flexible
- Such findings need to be made available to motivate relevant change
- Workforce needs to upskill

CONCLUSION



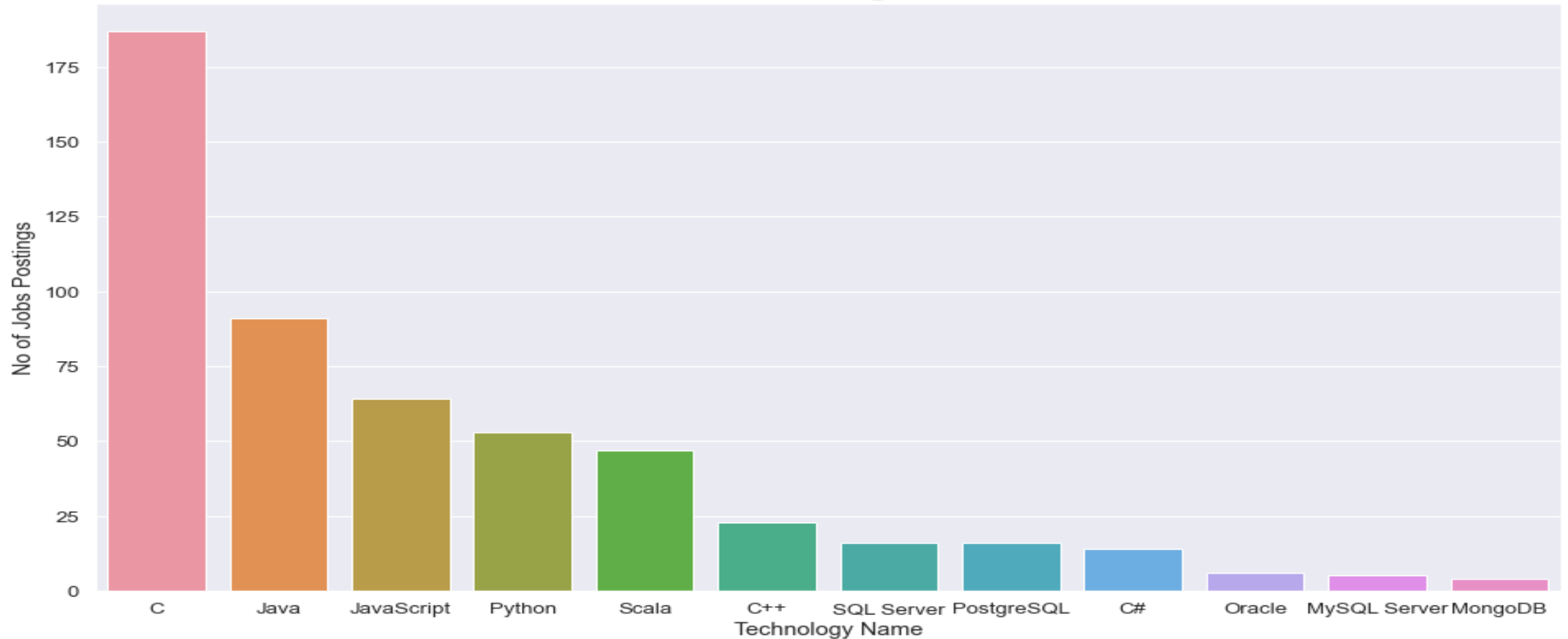
- Companies and workforce need to adapt to and adopt innovation early
 - This will help lower unemployment as areas that need development will ID early
 - Globally, a cultural change is needed wrt female representation in tech and software
- Point 4

APPENDIX



GITHUB JOB POSTINGS

Number of Jobs @ Github



POPULAR LANGUAGES

