



IBM Data Analyst Capstone Project

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OUTLINE



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- Methodology
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EXECUTIVE SUMMARY



- JavaScript remains most utilized language, Python rises
- PostgreSQL eliminating need for other SQL databases
- Platform satisfaction remains steady
- jQuery webframe losing major interest, Vue.js gains
- Demographics
 - Young, educated, male dominant field
 - US and India remain top countries for developers

INTRODUCTION



In a world that advances in technology so quickly, how do we know where we stand? Where are we headed?

- This presentation analyzes the results of Stack Overflow's 2019 Developer Survey
- It aims to shed light on the current global situation and future trends of the industry
- For anyone interested in the tech industry
- Content Covered:
 - Coding Languages
 - Databases
 - Platforms
 - WebFrames
 - Global Developer Demographics

METHODOLOGY



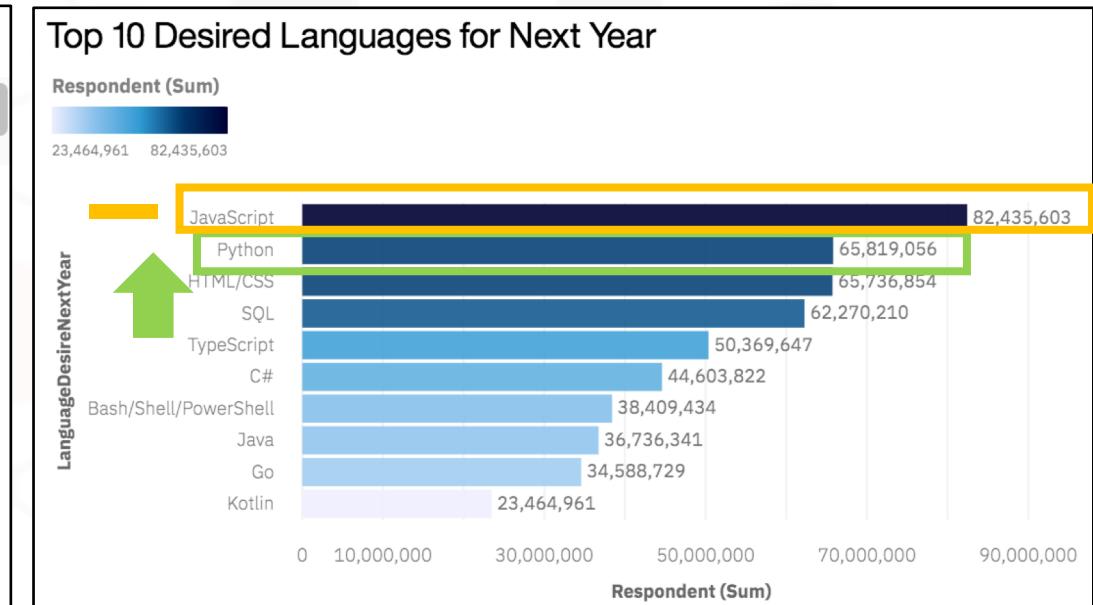
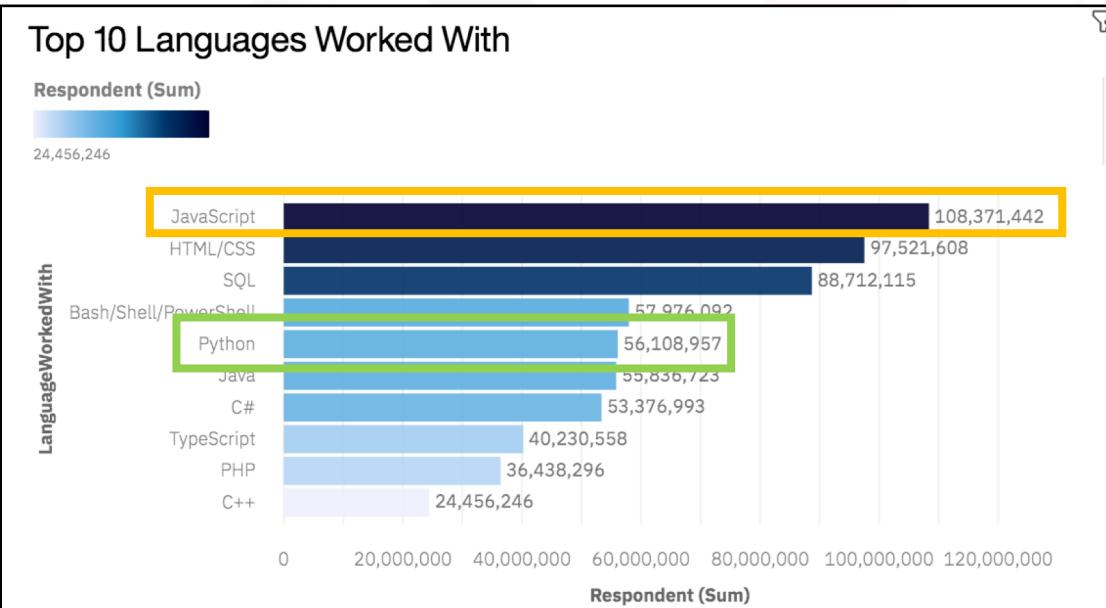
- Data sourced: 2019 Stack Overflow Developer Survey
https://stackoverflow.blog/2019/04/09/the-2019-stack-overflow-developer-survey-results-are-in/?cm_mmc>Email_Newsletter- -Developer_Ed%2BTech- -WW_WW- -SkillsNetwork-Courses-IBM-DA0321EN-SkillsNetwork-21426264&cm_mmca1=000026UJ&cm_mmca2=10006555&cm_mmca3=M
- Github and web scraping also used
- System Utilized: IBM Cognos
- Methods Used:
 - Regression analysis
 - Histogram comparison
 - Age correlation
 - Gender breakdown

RESULTS



- Collection performed annually
- Global participation from varying company sizes

RESULTS – PROGRAMMING LANGUAGE



JavaScript remain most utilized language
Python gains large desire for usage in coming year



LANGUAGE FINDINGS & IMPLICATIONS

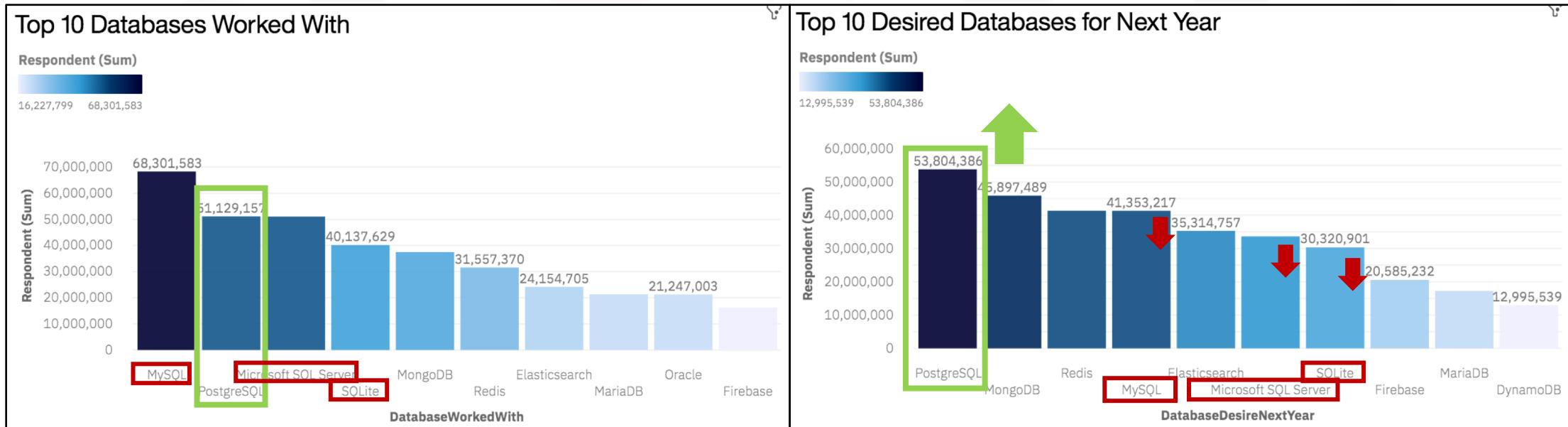
Findings

- JavaScript still mostly used language
- HTML / CSS begins losing desirability
- Python rises in desired usage
- Typescript makes unexpected jump in popularity

Implications

- JavaScript may be considered outdated
- Python may overtake JavaScript in the near future
- HTML / CSS are mainly used by web developers, where data scientist jobs are now increasing
- The need for a new language stands

RESULTS – DATABASE



Postgre SQL eliminates need for other SQL databases

DATABASE FINDINGS & IMPLICATIONS

Findings

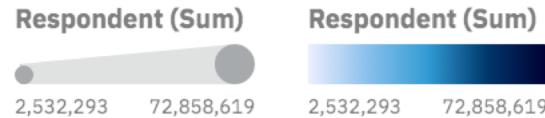
- Postgre SQL becomes most desired database for next year
- All other SQL databases fall drastically
- MongoDB holds second spot next to SQL
- Oracle loses Top 10 spot, instead comes DynamoDB

Implications

- Postgre SQL could supplement all functions of other SQL databases
- Companies are looking to consolidate into one system
- MongoDB still holds good standing with developers
- Oracle's high fees could be causing it to lose popularity, as so many new viable options arise

RESULTS - PLATFORMS

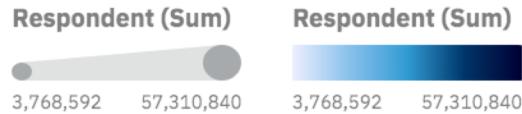
Platforms Worked With



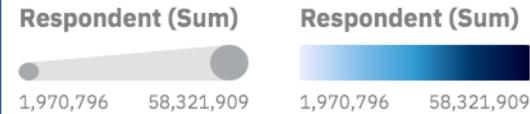
Most used platforms

RESULTS – WEB FRAMES

Top 10 Web Frames Worked With



Top 10 Desired Web Frames for Next Year



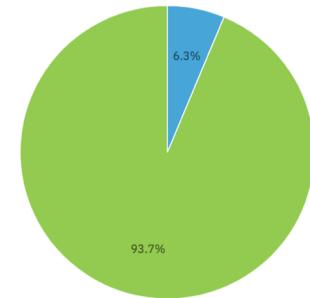
jQuery loses major desirability for next year
Vue.js makes way into Top 3 more desires for next year

RESULTS - DEMOGRAPHICS

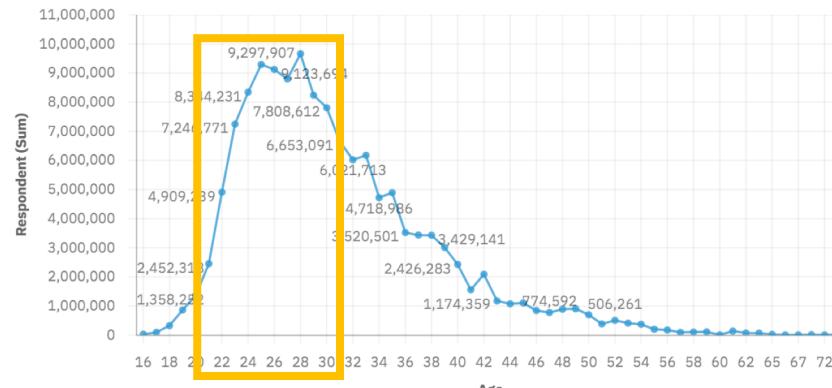
Respondents by Gender

Gender

• Woman



Respondents by Age



Respondent Formal Education Level by Gender

EdLevel

Associate degree

Master's degree MA, MS, M.E...

Professional degree (JD, MD, e...

Bachelor's degree (BA, BS, B.E...

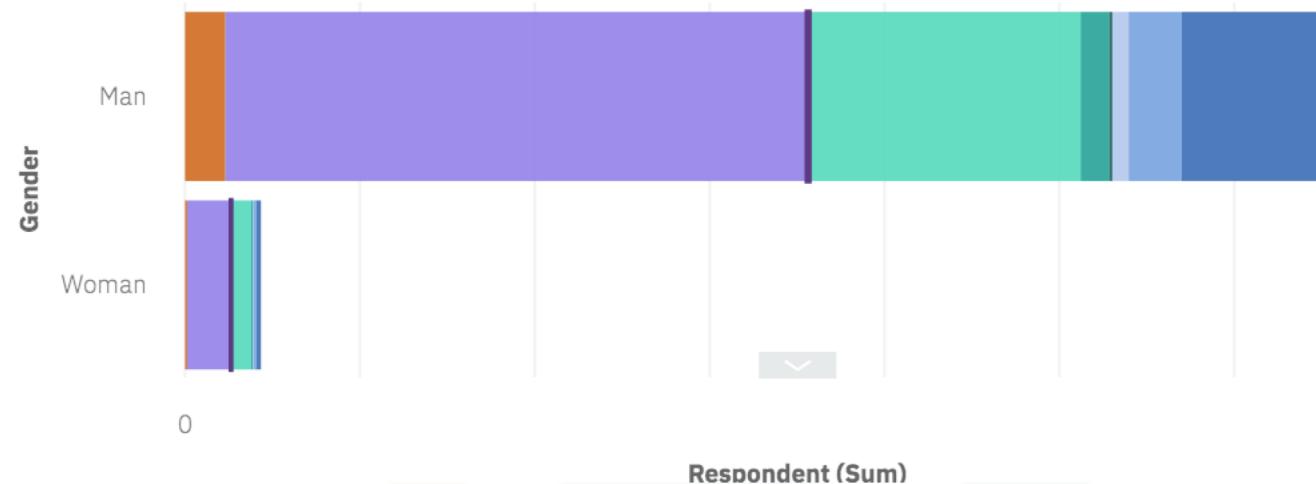
I never completed any formal ...

Other doctoral degree (Ph.D, E...

Primary/elementary school

Secondary school (e.g. Americ...

Some college/university study ...



90%+ of developers are male, mainly in their 20's

All developers have at least some type of higher education



RESULTS DEMOGRAPHICS

Respondents by Country



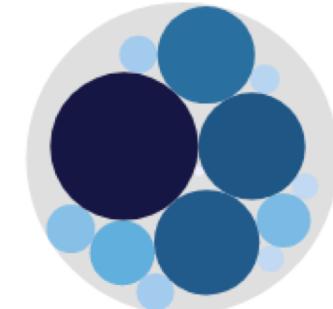
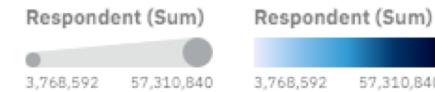
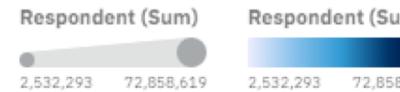
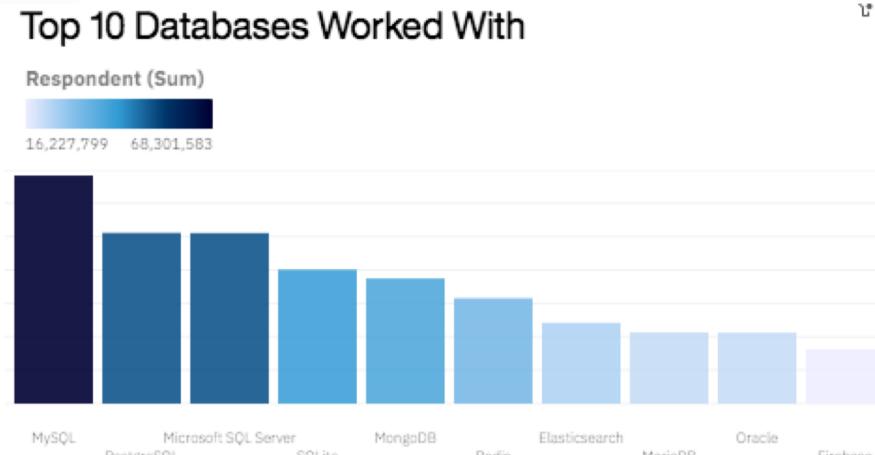
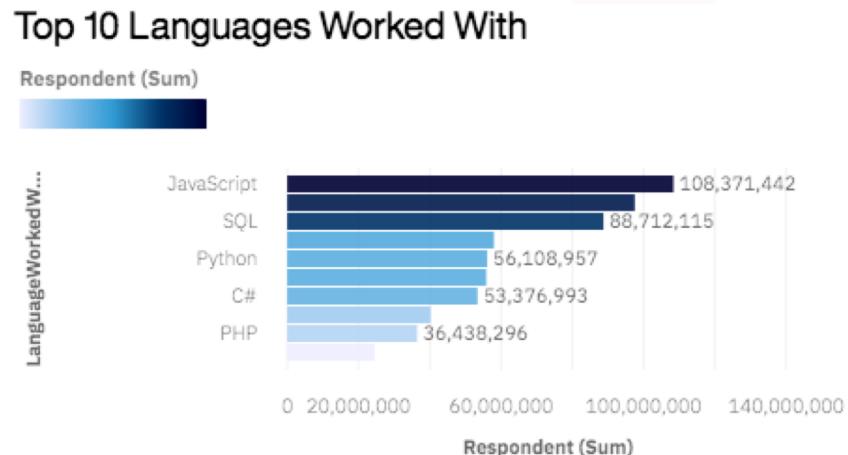
Dominant Countries: US, India, UK, France, Canada, Brazil

DASHBOARD



<https://dataplatform.cloud.ibm.com/dashboards/23094c5d-e163-46e8-abc2-5e2613141a3e/view/7a12d603679810f16f1c0e407c828077e33775fb2bb8a0681877b490f667797a93f1797c828420edf10066ba2e9475bc0>

DASHBOARD TAB 1

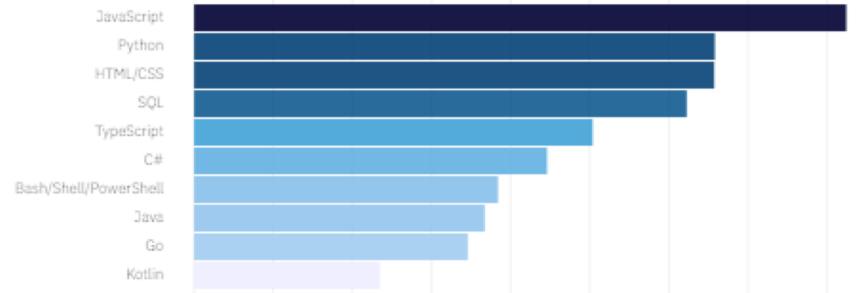


DASHBOARD TAB 2

Top 10 Desired Languages for Next Year

Respondent (Sum)

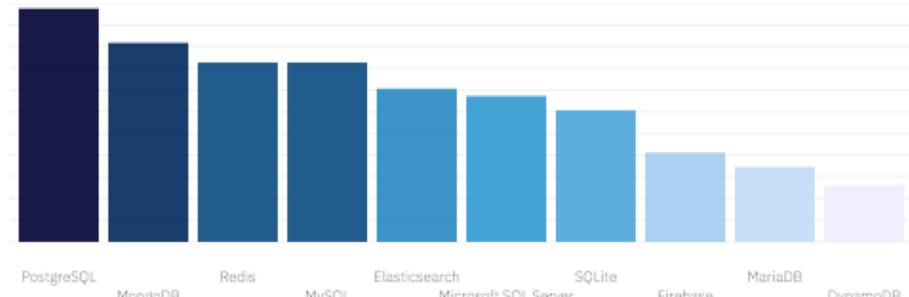
23,464,961 82,435,603



Top 10 Desired Databases for Next Year

Respondent (Sum)

12,995,539 53,804,386



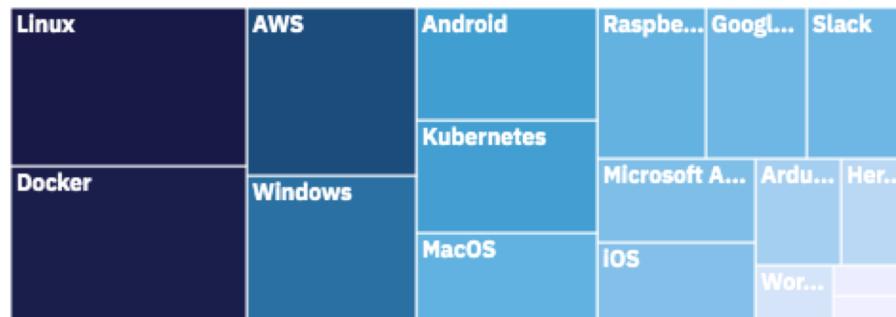
Desired Platforms to Work With Next Year

Respondent (Sum)

3,752,980 73,486,491

Respondent (Sum)

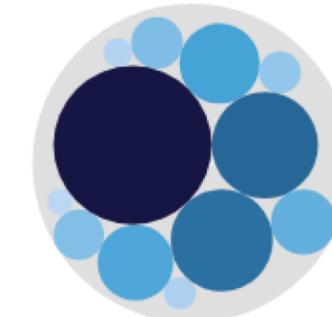
3,752,980 73,486,491



Top 10 Desired Web Frames for Next Year

Respondent (Sum)

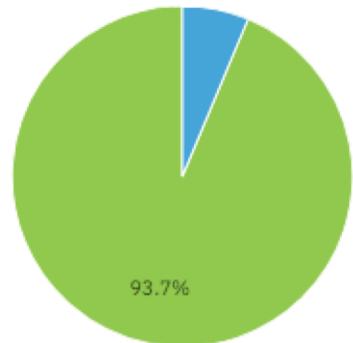
1,970,796 58,321,909



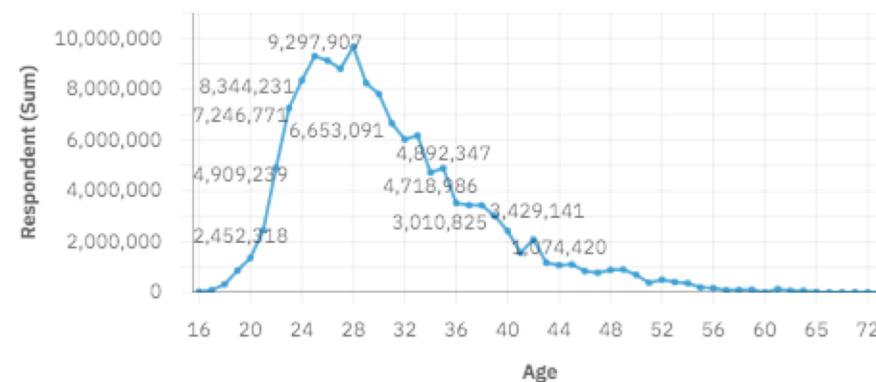
DASHBOARD TAB 3

Respondents by Gender

Gender
Woman Man



Respondents by Age



Respondents by Country

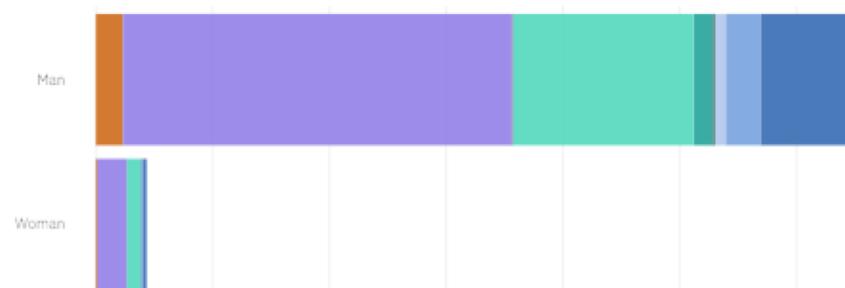
Respondent (Sum)
865 38,170,293



Respondent Formal Education Level by Gender

EdLevel

Associate degree
I never completed any formal ...
Other doctoral degree (Ph.D. E...
Bachelor's degree (BA, BS, B.E...
Master's degree (MA, MS, M.E...
Primary/elementary school



DISCUSSION



- The tools of the developer world are swiftly changing
- Preference for languages and databases alter with the development of new systems
- More women need to be empowered in the industry

OVERALL FINDINGS & IMPLICATIONS

Findings

- JavaScript still mostly used language
- SQL being consolidated with Postgre
- Platform usage remains constant
- jQuery loses popularity as Vue.js gains
- More than 90% male industry

Implications

- Python may overtake JavaScript in the near future
- Database and Web Frame tech may be migrating
- Women empowerment in the industry is still lacking, but seeing great efforts around the world

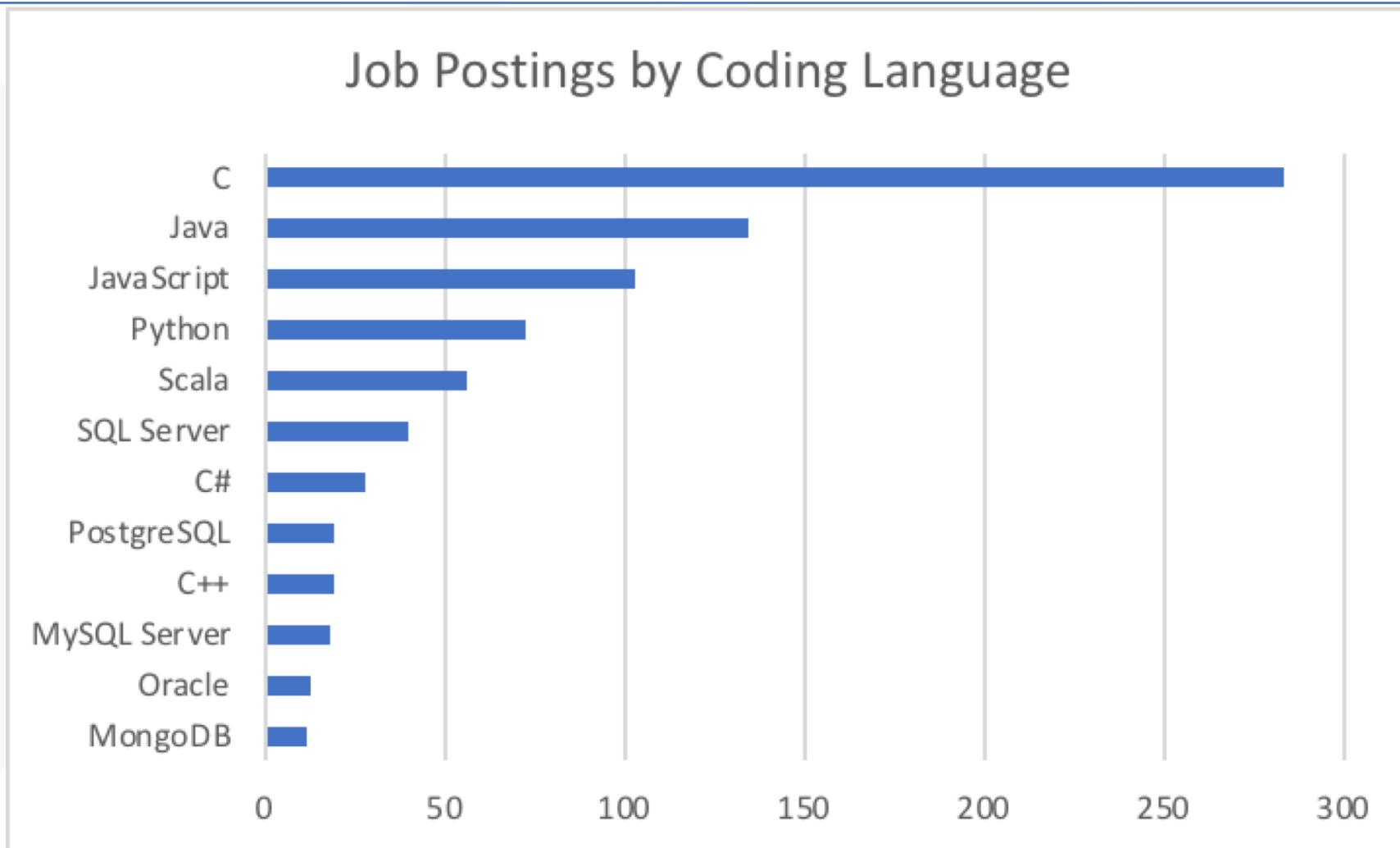
CONCLUSION



In a world that advances in technology so quickly, how do we know where we stand? Where are we headed?

- Currently a JavaScript, MySQL dominated industry
- High possibility of becoming Python, Postgre SQL lead in the near future
- Platforms remain constant
- Young, male dominant field with need for diversification

GITHUB JOB POSTINGS



POPULAR LANGUAGES

Average Annual Salary by Coding Language

