



TECHNOLOGY TRENDS AND ANALYSIS PRESENTATION

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OUTLINE



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

EXECUTIVE SUMMARY



- Trends in programming languages and databases
- Demographic survey
- Technological gap in countries
- Gender gap in jobs

INTRODUCTION



About:

Analyzing the trends in software development

Purpose:

- Identify skill requirement for future
- What are the top programming languages on demand?
- What are the top databases on demand?
- What are the popular IDEs?

Audience: Human Resource and IT Head

METHODOLOGY



- **Data Collection Sources**
 - Stack Overflow Developer 2019 Survey
 - GitHub job posting
 - Programming Languages Annual Salary
- **Data Exploration**
- **Data Cleaning**
- **Data Visualization**
- **Presentation**

RESULTS

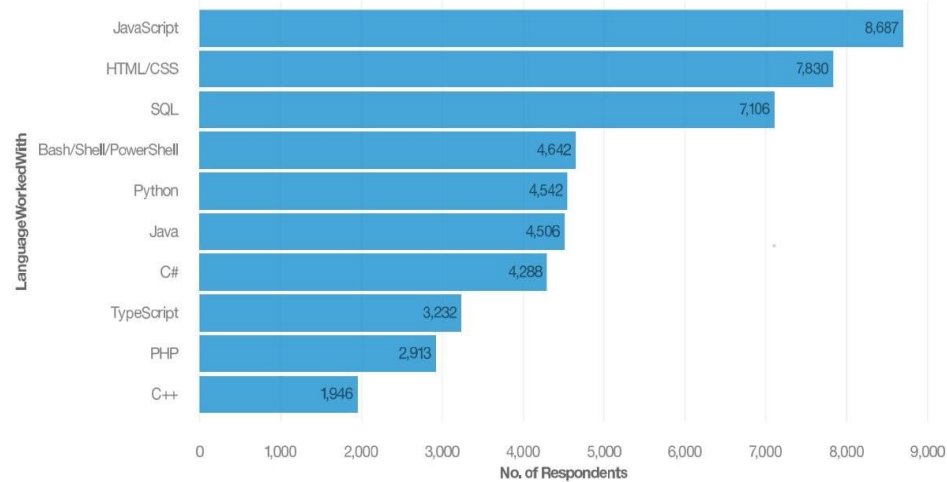
| Respondent | LanguageWorked... | LanguageDesireN... | DatabaseWorked... | DatabaseDesireN... |
|------------|---------------------|--------------------|----------------------|--------------------|
| 23 | HTML/CSS | Go | SQLite | DynamoDB |
| 26 | C# | JavaScript | Redis | Redis |
| 26 | HTML/CSS | Objective-C | SQLite | SQLite |
| 29 | JavaScript | Clojure | MongoDB | SQLite |
| 44 | Bash/Shell/Power... | C# | Oracle | Other(s): |
| 50 | C | JavaScript | Firebase | PostgreSQL |
| 56 | HTML/CSS | JavaScript | Oracle | DynamoDB |
| 57 | JavaScript | Elixir | Firebase | DynamoDB |
| 57 | Python | JavaScript | MongoDB | Firebase |
| 60 | Go | C++ | Elasticsearch | MySQL |
| 61 | C++ | Go | Firebase | PostgreSQL |
| 62 | C++ | C | Microsoft SQL Ser... | MySQL |
| 62 | Go | C++ | MySQL | Oracle |
| 67 | C | C# | DynamoDB | Elasticsearch |

PROGRAMMING LANGUAGE TRENDS

Current
Year

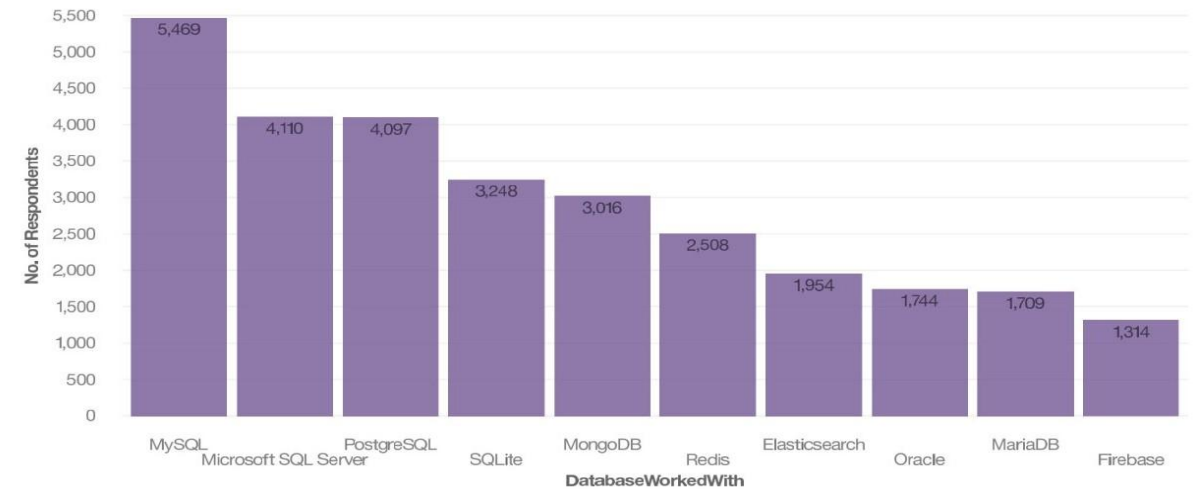
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Top 10 Language Worked With



Next
Year

Top 10 Database Worked With



PROGRAMMING LANGUAGE TRENDS - FINDINGS & IMPLICATIONS

Findings

- JavaScript, HTML/CSS, SQL are top 3 this year
- Python and Typescript becoming popular next year
- PowerShell edged out in next year

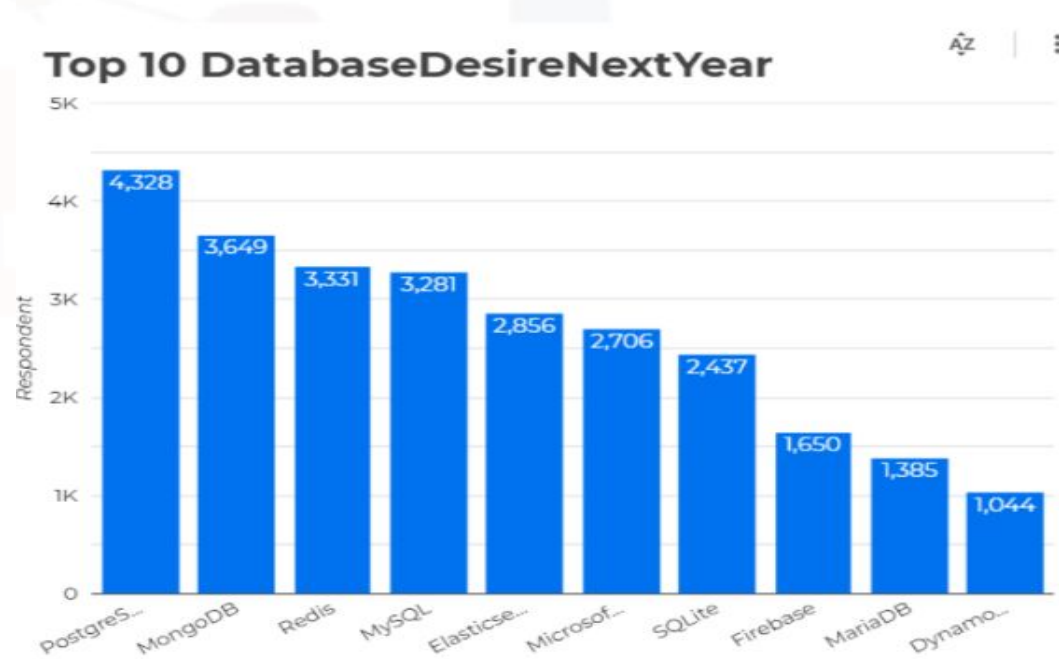
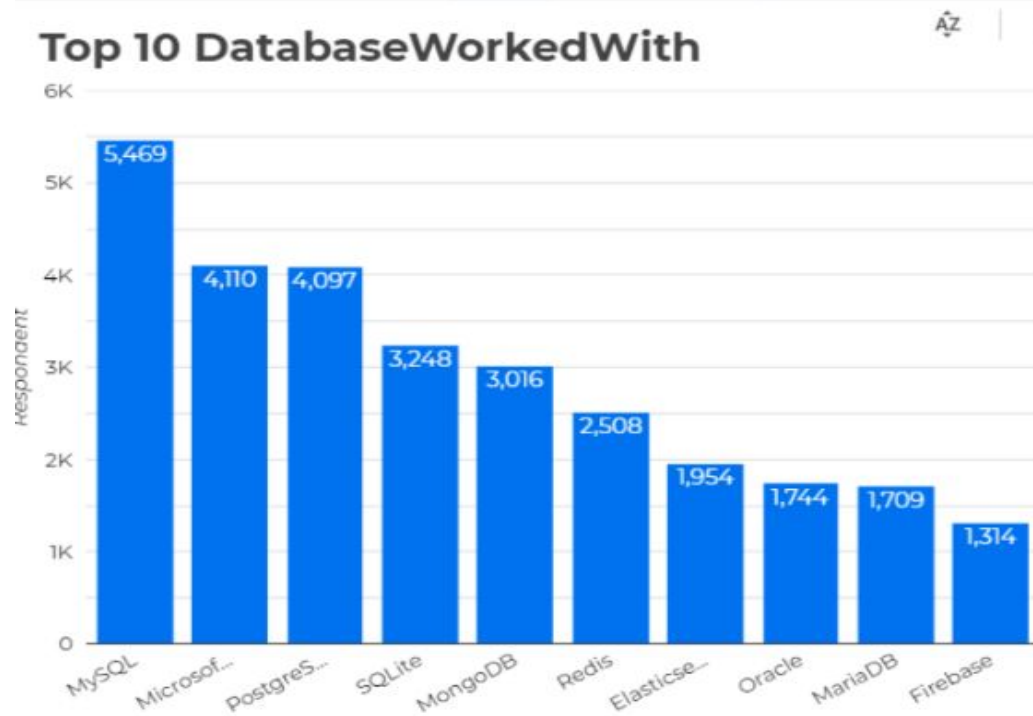
Implications

- Web development are still in high demand
- Big Data technology in companies still requires SQL
- With AI and ML in rising demand, Python is best choice

DATABASE TRENDS

Current
Year

Next
Year



DATABASE TRENDS - FINDINGS & IMPLICATIONS

Findings

- MySQL is most popular
- Behind is Microsoft SQL
- MongoDB and Redis are upcoming favorites
- New kid on the block: Elasticsearch

Implications

- Open source databases are still preferable in companies
- NoSQL databases will make an impact for storing non relational data
- Redis supports abstract data types
- Pre tuned search to website, app, or ecommerce store

DASHBOARD



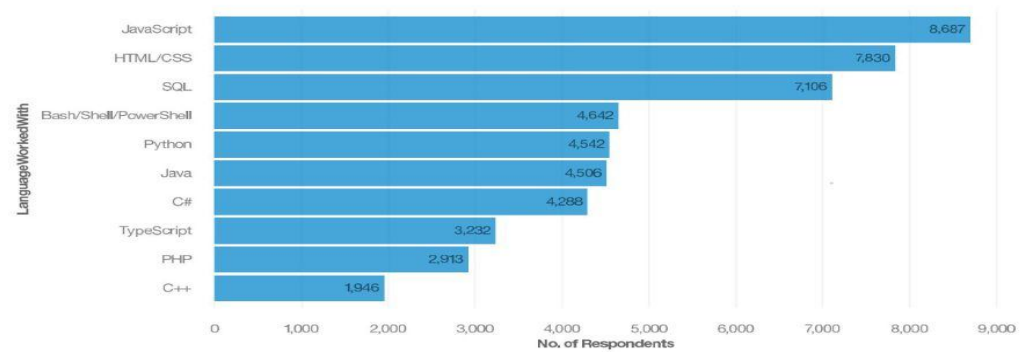
[Link for Capston Project Dashboard](#)

DASHBOARD TAB 1

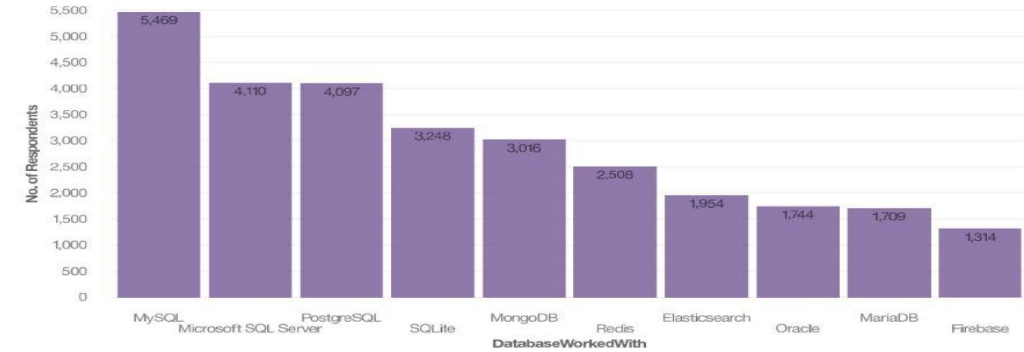
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IBM Watson Studio

Top 10 Language Worked With



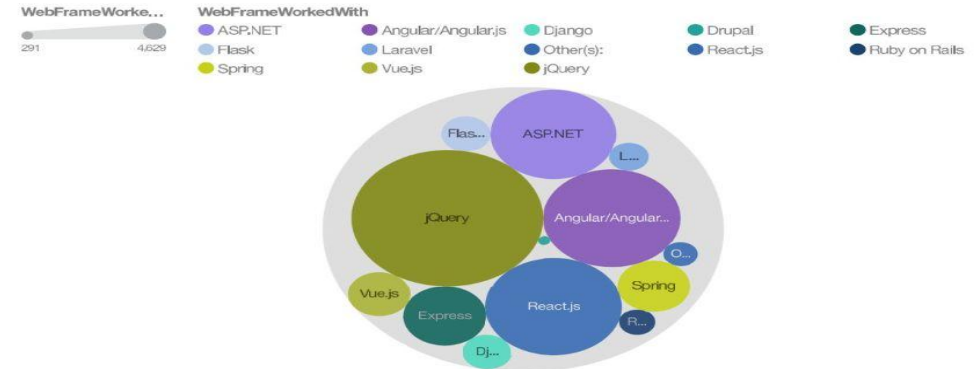
Top 10 Database Worked With



Platform Worked With



Top 10 Web Frameworks Worked With



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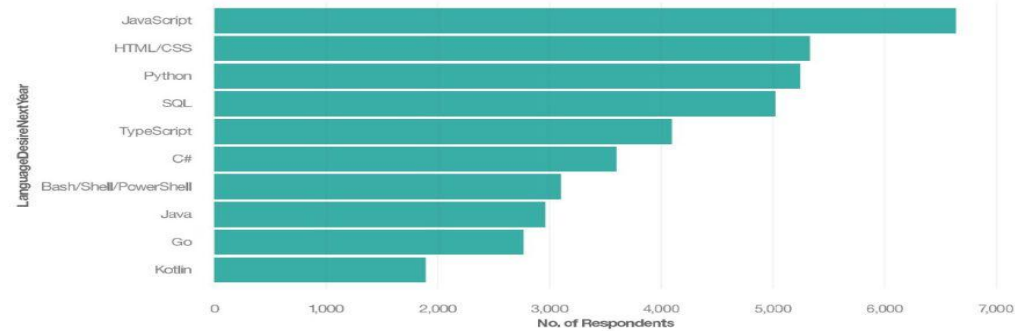
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DASHBOARD TAB 2

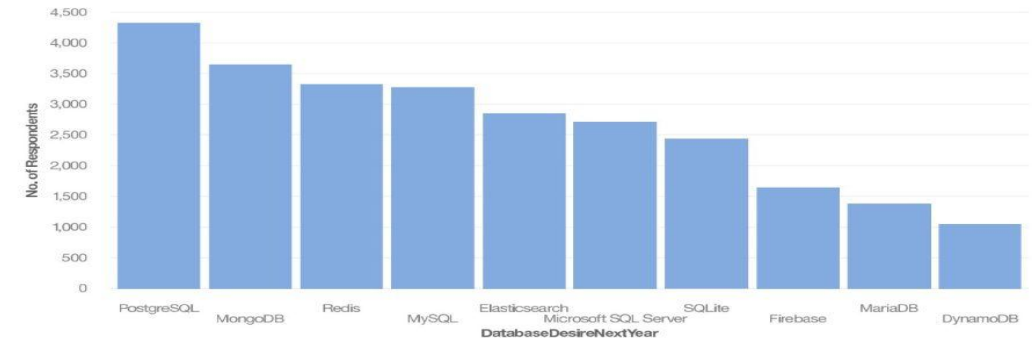
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Top 10 Language Desire Next Year

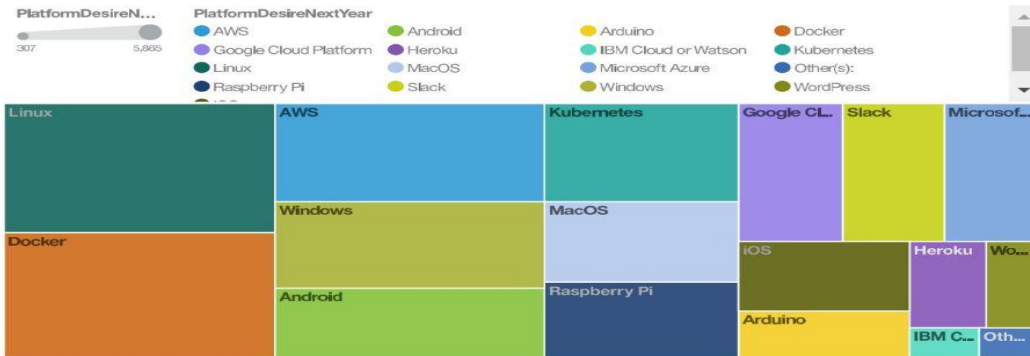


IBM Watson Studio

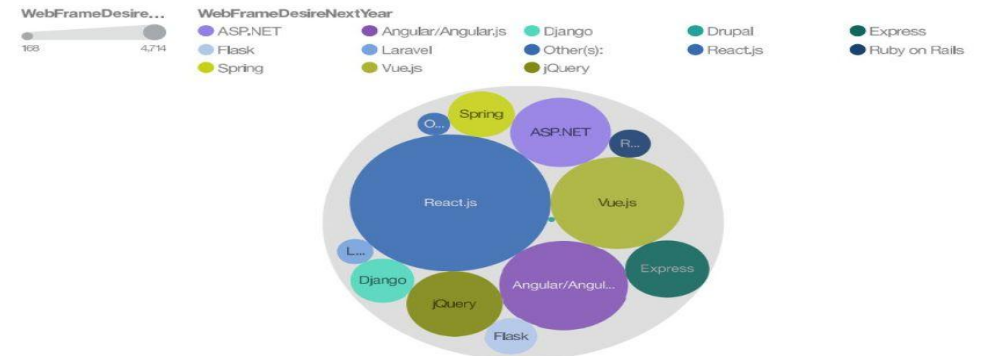
Top 10 Database Desire Next Year



Platform Desire Next Year



Top 10 Web Frame Desire Next Year



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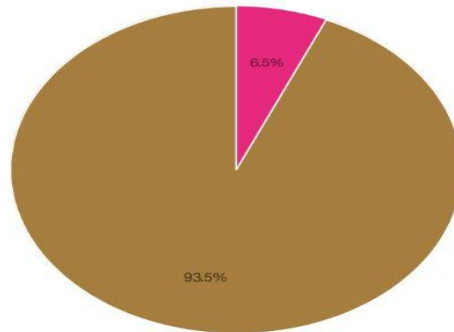
DASHBOARD TAB 3

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IBM Watson Studio

Respondent classified by Gender

Gender
● Woman ● Man

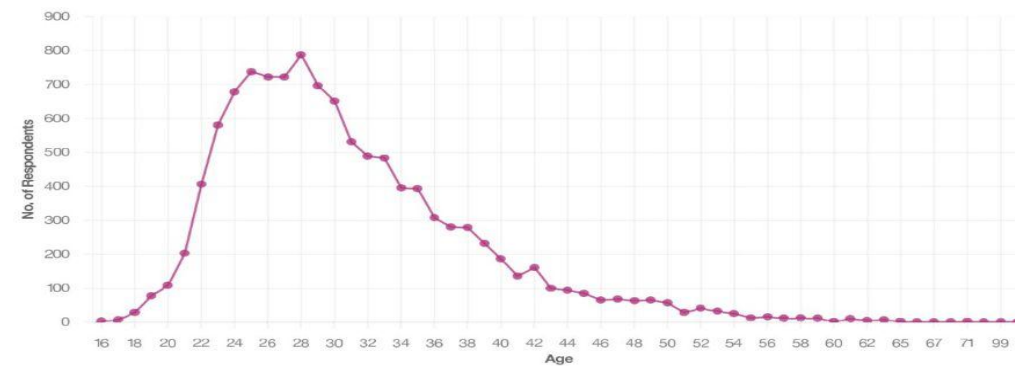


Respondent Count for Countries

Country (Count)
1 3,127

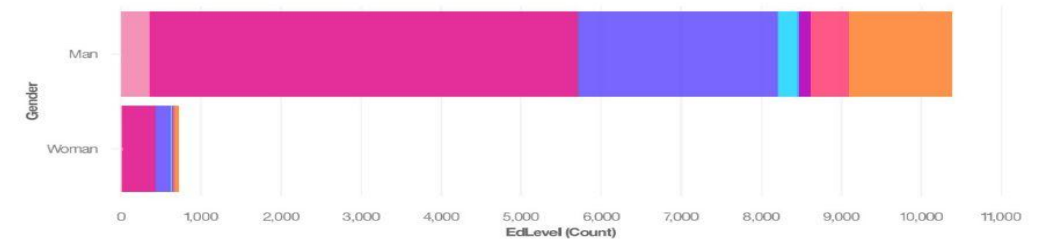


Respondent Count by Age



Respondent Count by Gender, classified by Formal Education Level

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



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<https://eu-de.dataplatform.cloud.ibm.com/dashboards/1b000c35-d301-4475-a59c-89c32e463130/view/513cdd3e03ec69ec4cb0eee407ca250e74662d59b7bbd103d5807b490e687297f36113c4c87d480fd3420c64f1bd1a0bcc>

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DISCUSSION



- Technology trends now and future
- Training and Reskilling workers
- Females participation in technology field
- Bridge divide of technology gaps in developing countries
- Eliminate age and education discrimination in employment

OVERALL FINDINGS & IMPLICATIONS

Findings

- Fast changing technology every year
- Concentration on several countries like USA and India
- Gender gap in technology jobs
- Platforms like Docker and AWS are growing

Implications

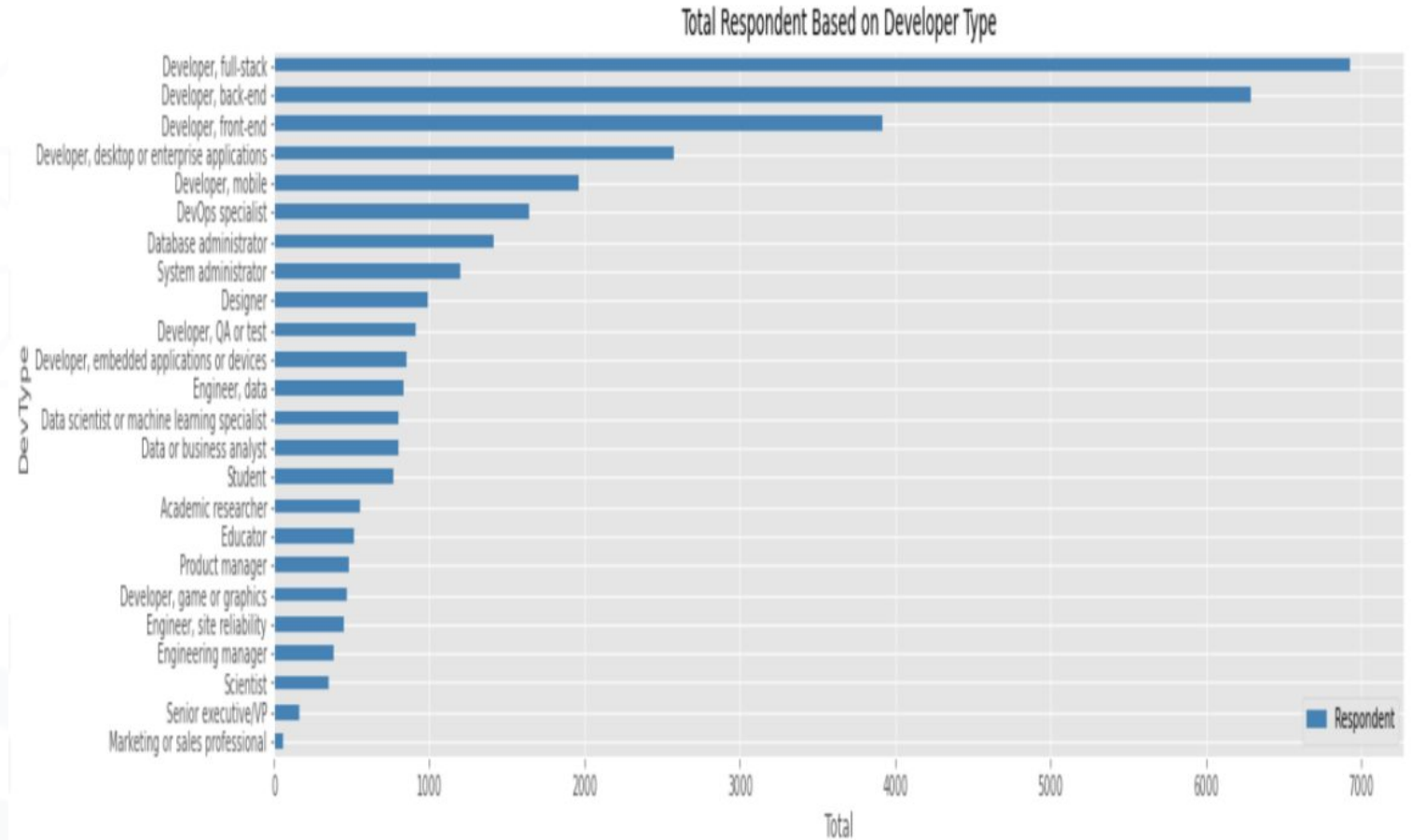
- Companies need to be flexible and adjust to rapid changes
- Need to spread technology out to lagging countries
- Impact of job hirings
- Shift to faster app deployments and cloud services in future

CONCLUSION

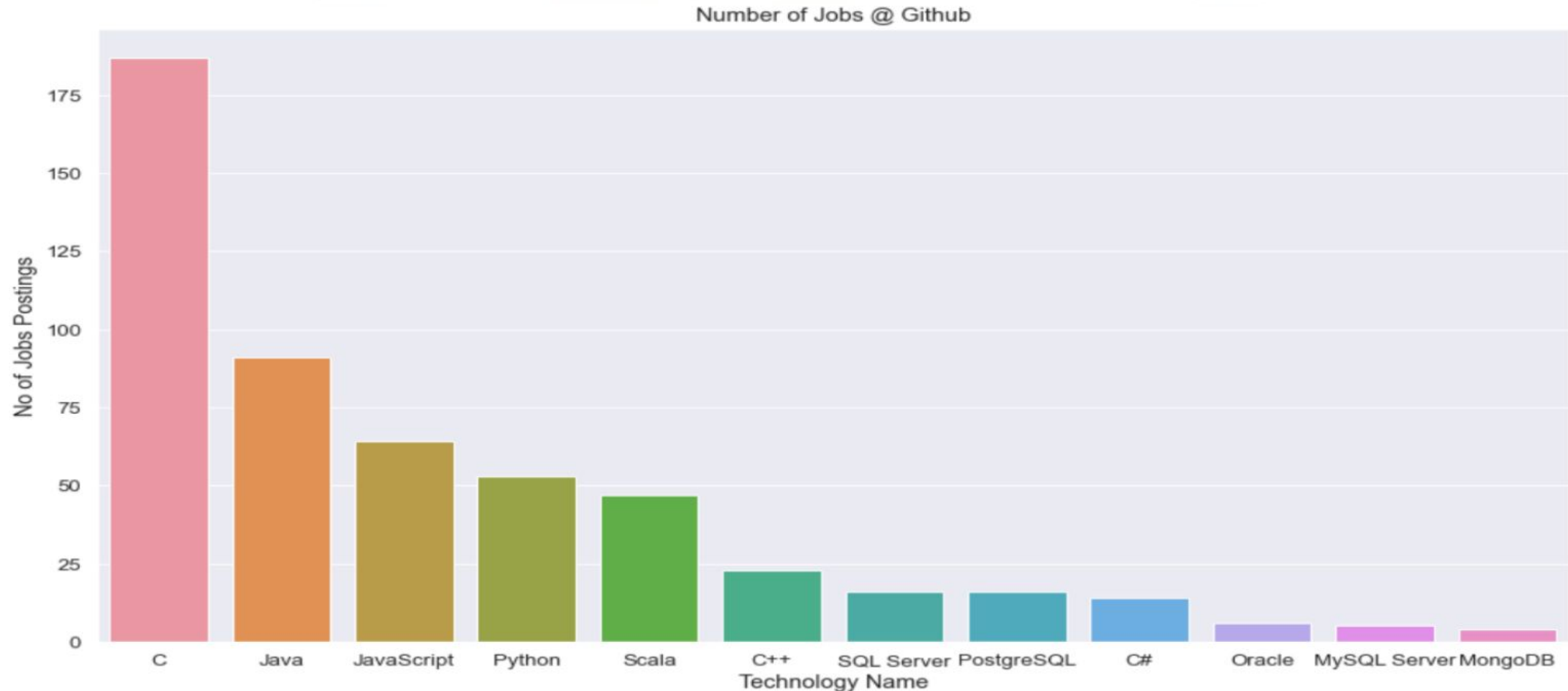


- Technology trends for current and next year
- Programming languages, database and platform overview
- Demographic overview
- Actions to be taken
- In future, incorporate Machine Learning to predict trends and salaries

APPENDIX



JOB POSTINGS



POPULAR LANGUAGES

