



Stack Overflow Developer 2019 Survey

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SKILLS NETWORK 

OUTLINE



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- Methodology
- Results
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 - Dashboard
- Discussion
 - Findings & Implications
- Conclusion
- Appendix

EXECUTIVE SUMMARY

Summary of Methodologies

- Collect data of the top programming skills that are most in demand from various sources including job postings, training portals and surveys by scraping internet web sites and accessing APIs
- Make the data ready for analysis using data wrangling techniques
- Apply statistical techniques to analyze the data
- Bring all of the information together by using IBM Cognos Analytics to create a dashboard
- Share the findings in a presentation

Summary of Results

- JavaScript is the top programming language both for the current and most desired next year
- Python is fast gaining popularity for the top programming language developers are learning
- PostgreSQL is the top database developers are seeking skill and has overtaken MySQL
- More than 90% of the respondents are male and are located mostly in USA, Germany, UK and India
- Majority of the developers had a bachelor's degree as their formal level of education and most of their age range in the 20's



INTRODUCTION



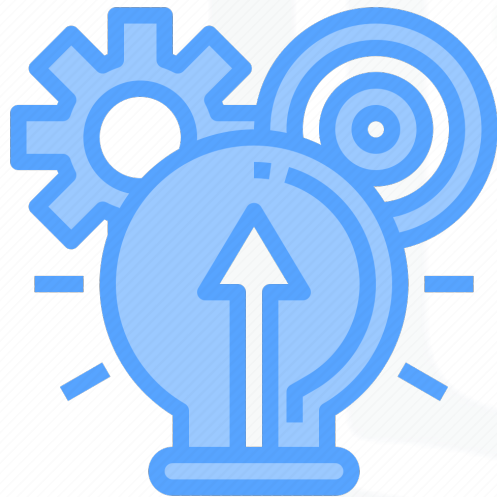
Project background

- As a data analyst of a global IT and business consulting services firm, a task to collect data from various sources and assist with the initiative was given. Then the collected data would be analyzed to help identify future skill requirements and trends for this year's report on emerging skills.

Problems to find answers

- What are the top programming languages in demand?
- What are the top database skills in demand?
- What are the popular IDEs?

METHODOLOGY



Data Collection

- Collecting Data Using APIs
- Collecting Data Using Web scraping
- Exploring Data

Data Wrangling

- Finding Missing Values
- Determine Missing Values
- Finding Duplicates
- Removing Duplicates
- Normalizing Data

Exploratory Data Analysis

- Distribution
- Outliers
- Correlation

Data Visualization

- Visualizing Distribution of Data
- Relationship
- Composition
- Comparison

Dashboard Creation

- Dashboards

Presentation of Findings

- Final Presentation

RESULTS

The Top Programming Languages in Demand

- JavaScript is the top programming language for the current and the most desired for next year
- Python is fast gaining popularity for the top programming language developers are learning

The Top Database Skills in Demand

- PostgreSQL is the top database developers are seeking skill and has overtaken MySQL

The Popular IDEs

- Developers are choosing Linux or Docker over Windows

The Popular WebFrames

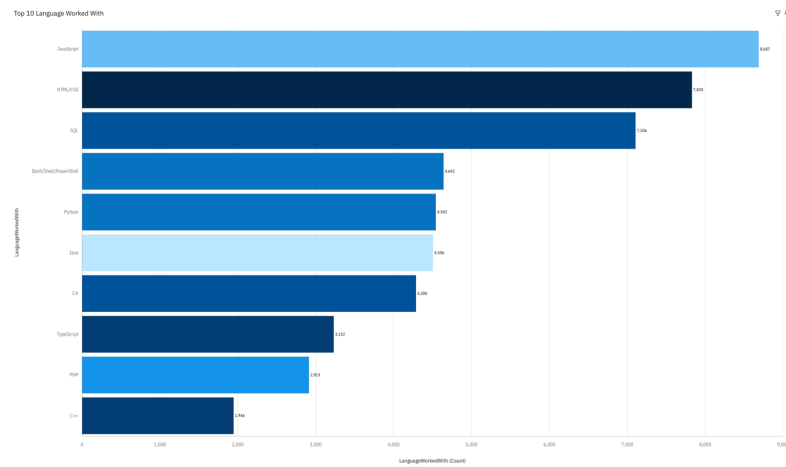
- React and jQuery are both popular JavaScript libraries, but React is the top choice for next year

Demographics

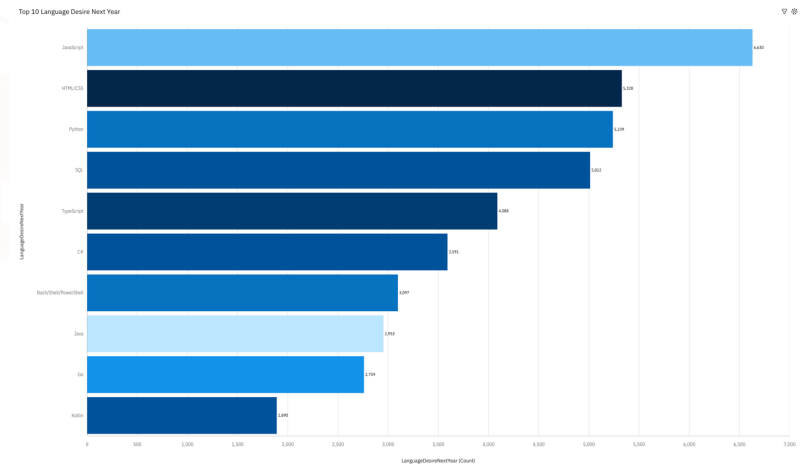
- More than 90% of the respondents are male and are located mostly in USA, Germany, UK and India
- Majority of the developers had a bachelor's degree as their formal level of education and most of their age range in the 20's

PROGRAMMING LANGUAGE TRENDS

Current Year



Next Year



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PROGRAMMING LANGUAGE TRENDS - FINDINGS & IMPLICATIONS

Findings

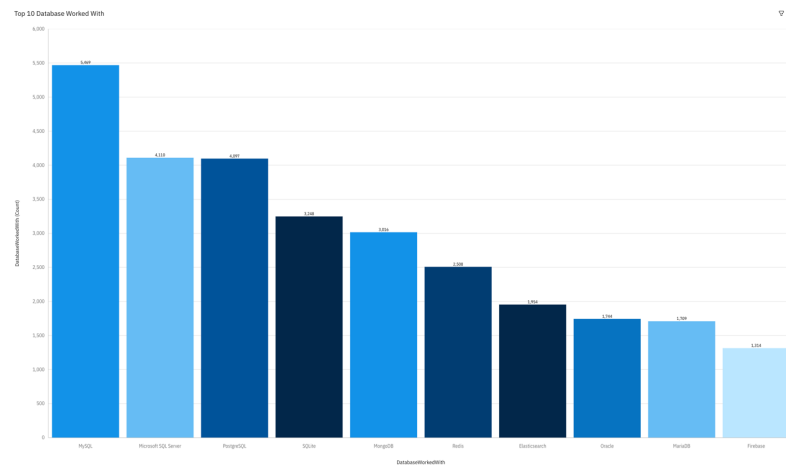
- JavaScript and HTML/CSS are the leading programming languages for the current and following year
- Python is fast gaining popularity for the desired programming language next year

Implications

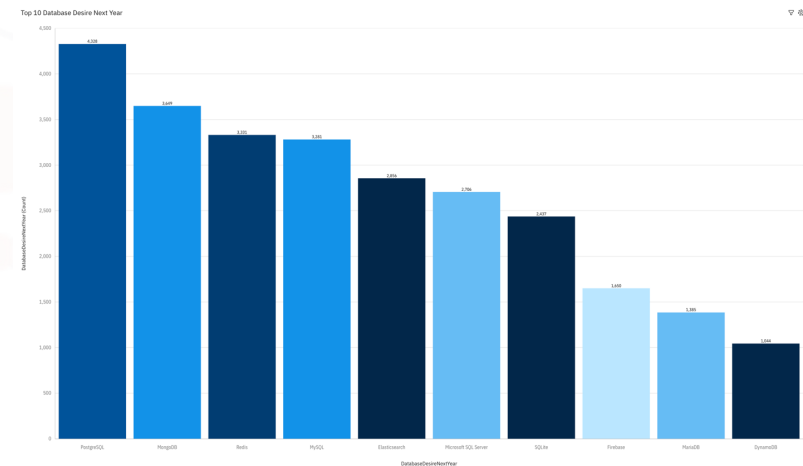
- JavaScript is the language of choice in mobile world
- Python is very easy language to read and write
- Python is the ideal language to work in areas such as Data Science, Machine Learning, Artificial Intelligence

DATABASE TRENDS

Current Year



Next Year



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DATABASE TRENDS - FINDINGS & IMPLICATIONS

Findings

- MySQL is the leading database of choice for the current year
- PostgreSQL and MongoDB both gained popularity for the database most desired for the next year

Implications

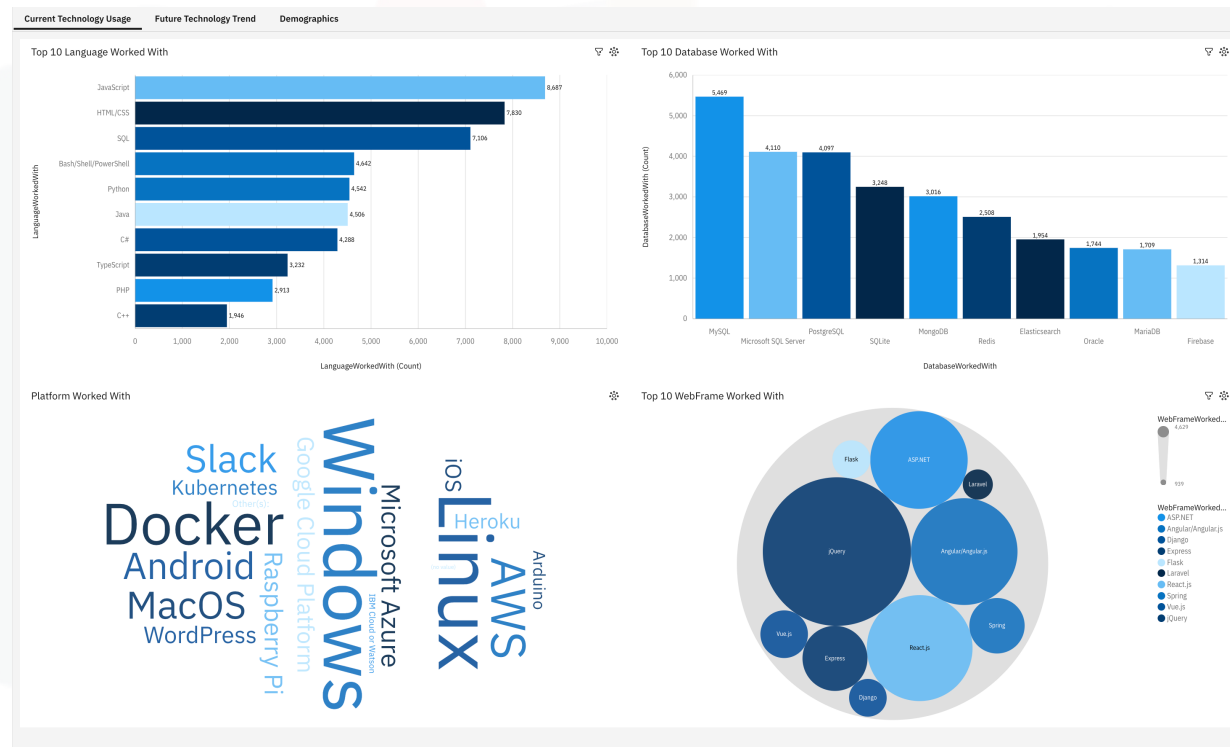
- PostgreSQL offers more features
- PostgreSQL gives more flexibility in data types
- MongoDB is well-suited for real time-analytics, content management, the Internet of Things, mobile, and other types of applications

PERMANENT LINK TO VIEW THE DASHBOARD



https://us1.ca.analytics.ibm.com/bi/?perspective=dashboard&pathRef=.my_folders%2FCognos%2BDashboard&action=view&mode=dashboard&subView=model0000018c14bb8ee8_00000002

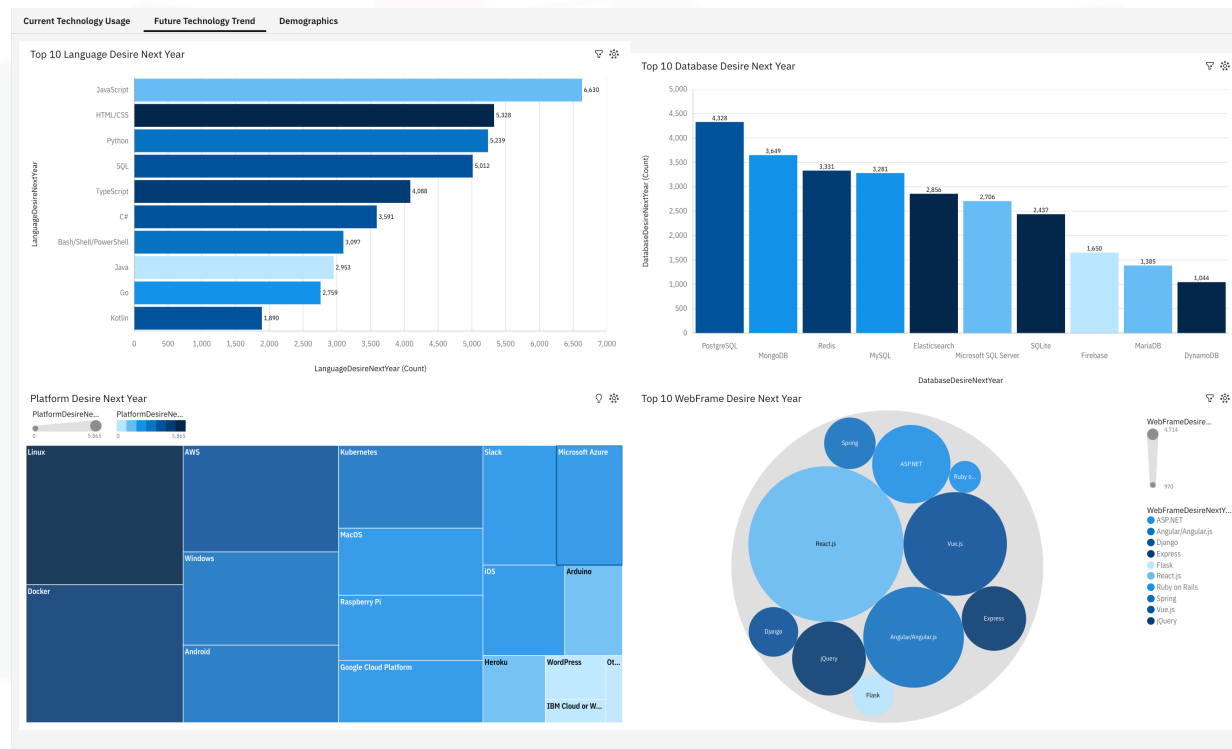
CURRENT TECHNOLOGY USAGE DASHBOARD



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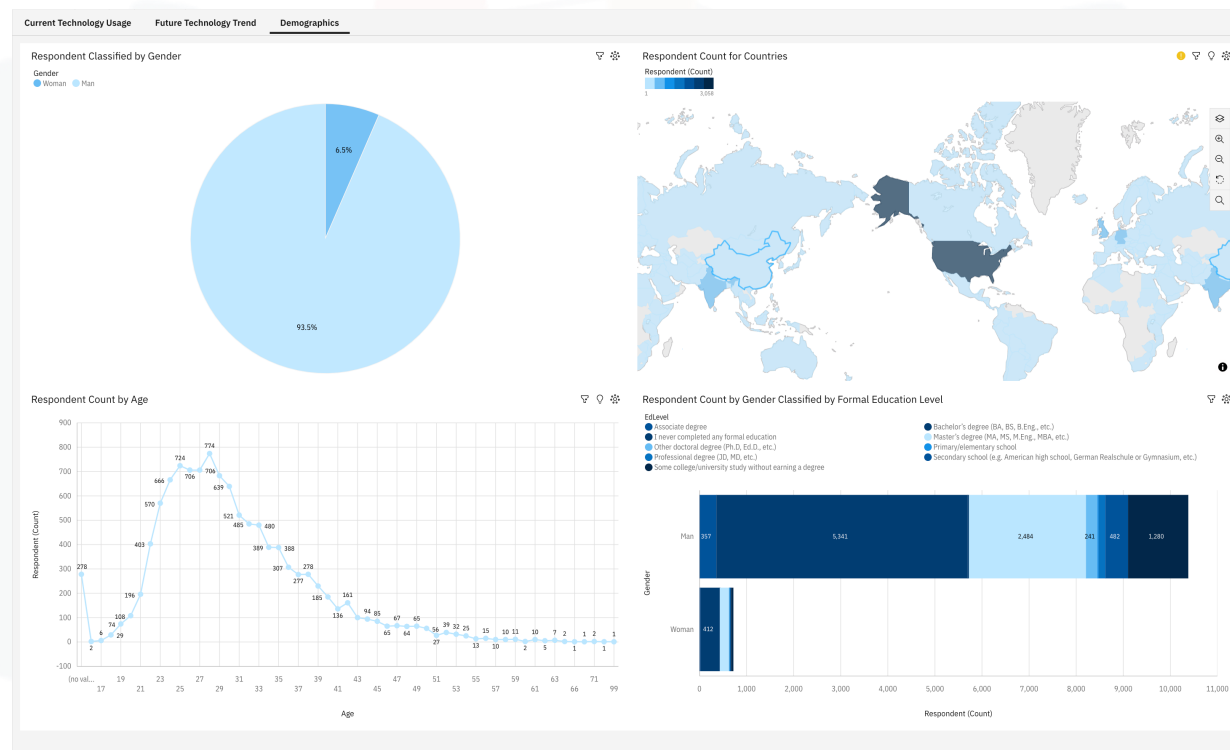
FUTURE TECHNOLOGY TREND DASHBOARD



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DEMOGRAPHICS DASHBOARD



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DISCUSSION



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OVERALL FINDINGS & IMPLICATIONS

Findings

- JavaScript and HTML/CSS are the leading programming languages for the current and following year
- Python is fast gaining popularity for the desired programming language next year
- MySQL is the leading database of choice for the current year
- PostgreSQL and MongoDB both gained popularity for the database most desired for the next year

Implications

- JavaScript is the language of choice in mobile world
- Python is very easy language to read and write
- Python is the ideal language to work in areas such as Data Science, Machine Learning, Artificial Intelligence
- PostgreSQL offers more features
- PostgreSQL gives more flexibility in data types
- MongoDB is well-suited for real time-analytics, content management, the Internet of Things, mobile, and other types of applications

CONCLUSION

- Developers are shifting to different platforms, databases, webframes, and languages for a variety of reasons such as ease of use, efficiency, cost and others
- Python is gaining popularity because it is very easy language to read and write. It is also the ideal language to work in areas such as data science, machine learning, artificial intelligence
- Database such as PostgreSQL offers more features, and it gives more flexibility in data types
- MongoDB is also another database that is well-suited for real time-analytics, content management, the Internet of Things, mobile, and other types of applications
- Developers are choosing Linux over Windows for several reasons such as security, customization, development tools, support for programming languages, and stability
- React and jQuery are both popular JavaScript libraries, but React has faster performance and works better for complex web applications



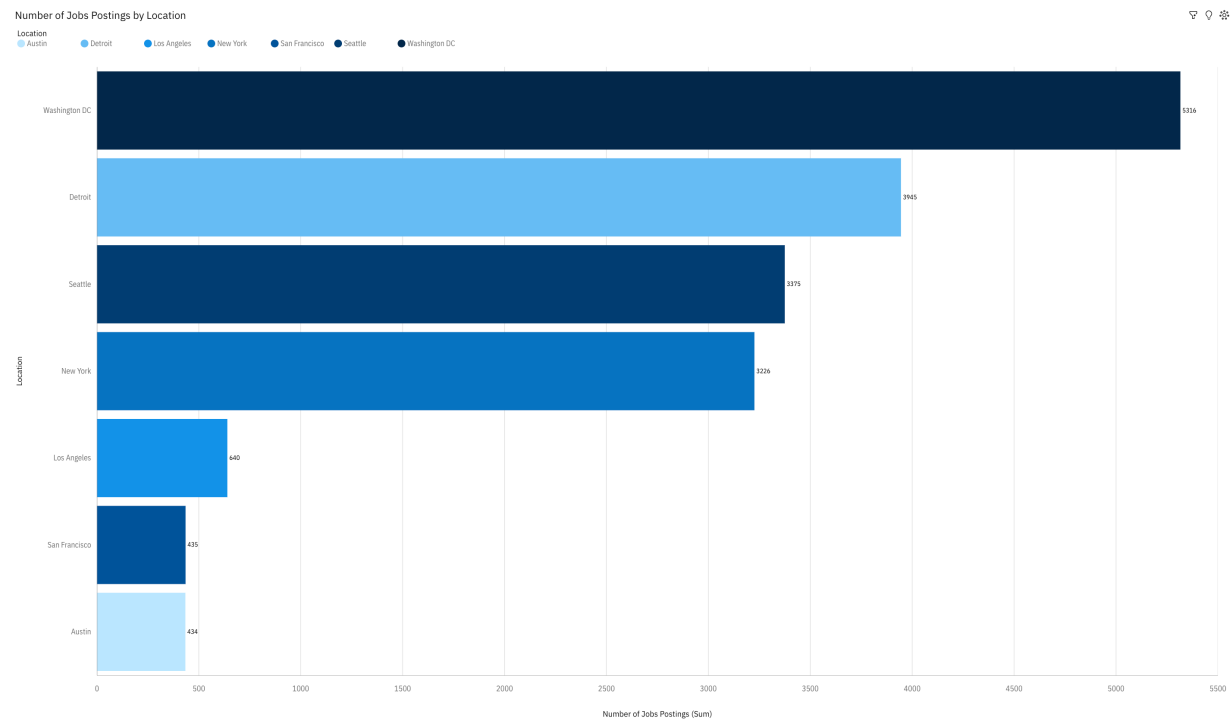
APPENDIX



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JOB POSTINGS



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POPULAR LANGUAGES

