

# Future Programing Skill Trends

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# OUTLINE

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



# EXECUTIVE SUMMARY

- Collecting demand of jobs open from various technology and locations
- Analyzing the data and identify insights and trends
  - The top programming languages
  - The top databases skills
  - The popular IDEs
- Consolidating the information into a comprehensive dashboard that visualizes current skills, future trends, and demographic insights.



# INTRODUCTION

To keep pace with the rapidly evolving technological landscape, it's crucial to address the following key questions:

## **1. What are the current in-demand programming and database skills?**

Which programming languages and frameworks are most widely used?

What are the essential database technologies and their applications?

## **2. What programming and database skills will be in demand in the future?**

Which emerging technologies and trends will shape the industry?


How can we anticipate and adapt to future skill requirements?



# METHODOLOGY

- Data Collection
- Data Wrangling
- Exploring Data Analysis
- Data Visualization
- Dashboard Creation
- Presentation of Findings
- Data Source : Job posting,
- Training portals and Surveys

"[https://cfcourses-data.s3.us.cloud-object-storage.appdomain.cloud/IBM-DA0321ENSkillsNetwork/ LargeData /m2\\_survey\\_data](https://cfcourses-data.s3.us.cloud-object-storage.appdomain.cloud/IBM-DA0321ENSkillsNetwork/LargeData/m2_survey_data)."



# RESULTS

The collected data undergoes a rigorous cleaning process to ensure accuracy and reliability. Once cleaned, statistical techniques are applied to analyze the data and identify trends. The insights derived from this analysis are then used to create informative dashboards that visualize both current and future trends.



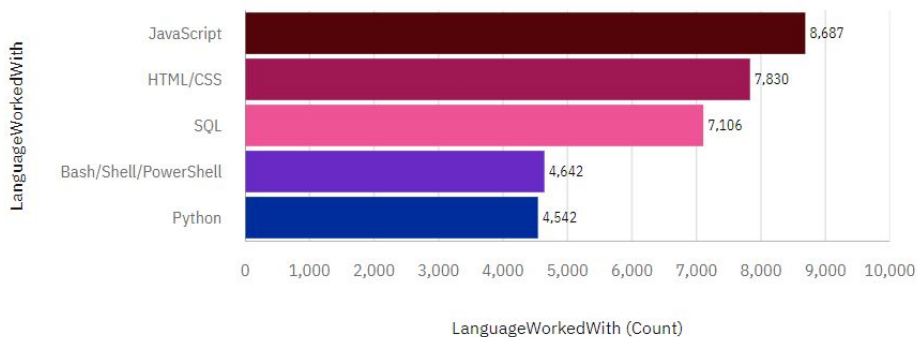
# PROGRAMMING LANGUAGE TRENDS

## Current Year

Top 5 Language Worked With

LanguageWorkedWith

● Bash/Shell/PowerShell ● HTML/CSS ● JavaScript ● Python ● SQL

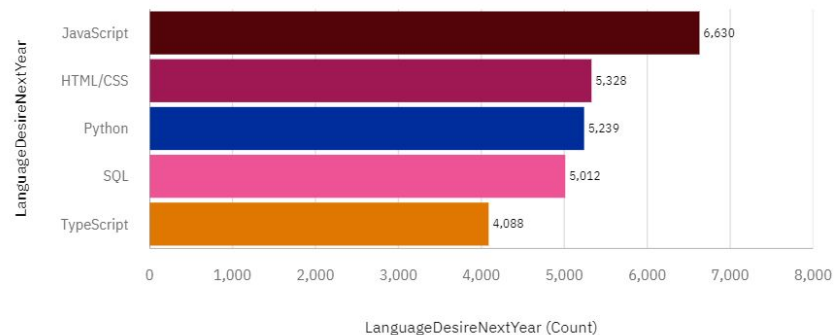


## Next Year

Top 5 Language Desire Next Year

LanguageDesireNextYear

● HTML/CSS ● JavaScript ● Python ● SQL ● TypeScript



# PROGRAMMING LANGUAGE TRENDS FINDINGS & IMPLICATIONS

## Findings

- **JavaScript** is the most widely used language, followed by **HTML/CSS**.
- **Python** has replaced the third most popular language.
- **TypeScript** is expected to be the fifth most popular language, while **Bash/Shell/PowerShell** is no longer in the top five.

## Implications

- **JavaScript** and **HTML/CSS** will **continue to be** popular.
- People are becoming **more interested** in **Python**.
- **SQL** will **remain** a preferred choice.



# DATABASE TRENDS

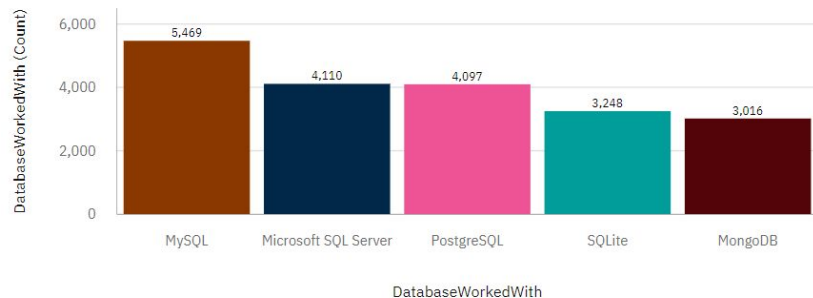
## Current Year

Top 5 Database Worked With



DatabaseWorkedWith

Microsoft SQL Server MongoDB MySQL PostgreSQL SQLite



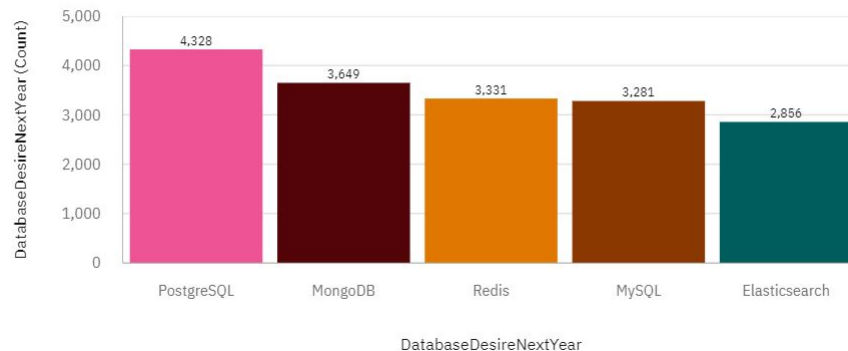
## Next Year

Top 5 Database Desire Next Year



DatabaseDesireNextYear

Elasticsearch MongoDB MySQL PostgreSQL Redis



# DATABASE TRENDS FINDINGS & IMPLICATIONS

## Findings

- Next year, **PostgreSQL** is predicted to be the **top** database, surpassing **MySQL**.
- **MongoDB** is expected to move from the 5th to the **2nd** position.
- **Microsoft SQL Server** and **SQLite** are estimated to be **replaced** by **Redis** and **Elasticsearch**.

## Implications

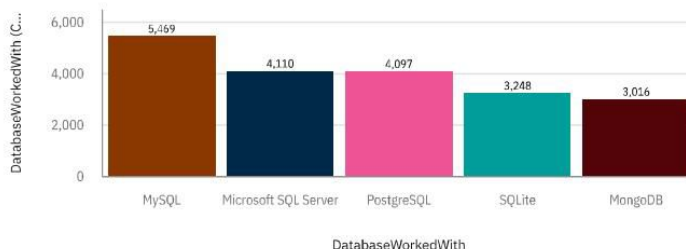
- **MySQL** will be **highly required**.
- **MongoDB** will become **significantly more popular**.
- **Redis** and **Elasticsearch** will be among the **top 5** most used databases.

## Current Technology

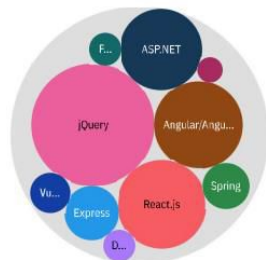
## LanguageWorkedWith



## DatabaseWorkedWith



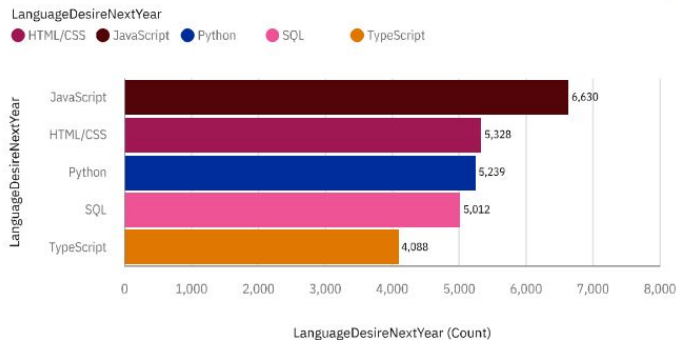
## WebFrameWorked



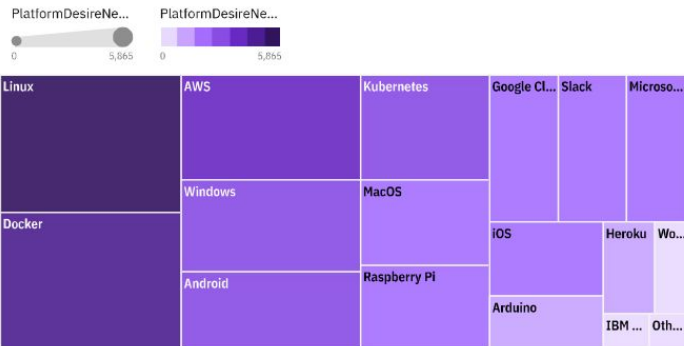
# DASHBOARD 2

## Future Technology

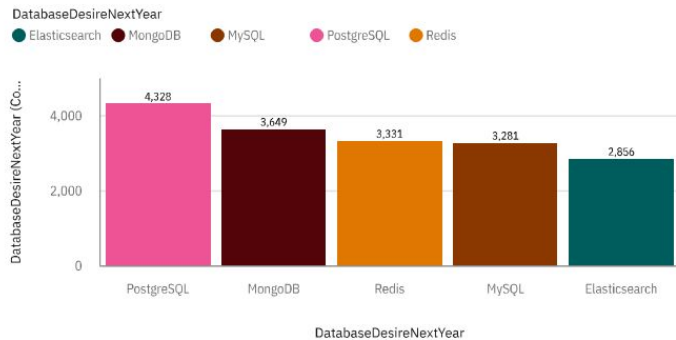
Top 5 Language Desire Next Year



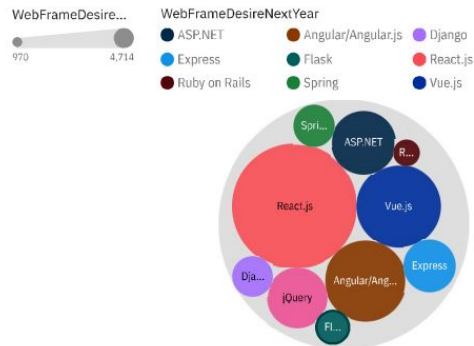
Platform Desire Next Year



1 Top 5 Database Desire Next Year



Top 10 Web Frame Desire Next Year



2

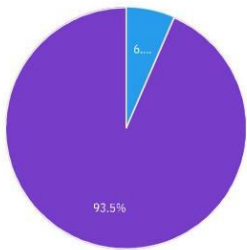
3

# DASHBOARD 3

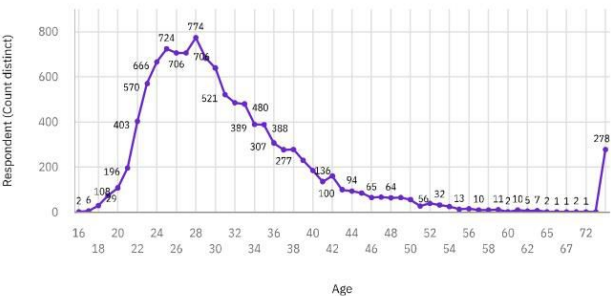
## Demographics

Respondent classified by Gender

Gender  
Woman Man



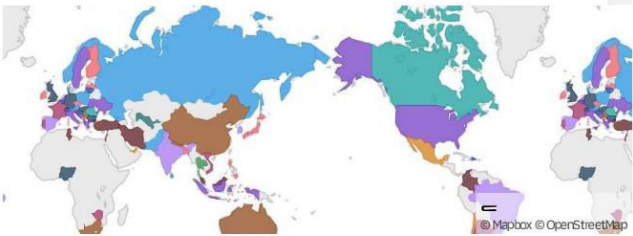
Respondent Count by Age



1 Respondent Count for Country

Respondent

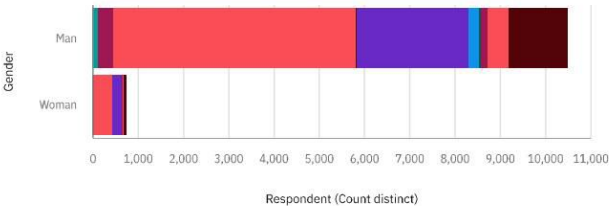
16 17 19 24 49 50 53 57 62 67 68 86 87 92 109 111 114 117 118 119 140 144 163 174 176 188 201 211 213 217 219 224 241 246 254 259 268 279 304



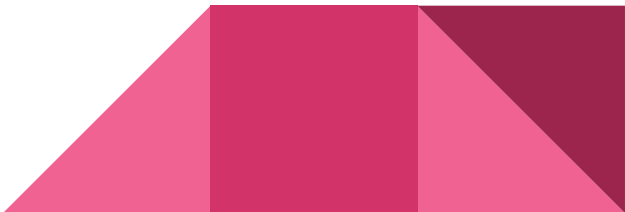
3 Respondent Count by Gender, classified by Formal Education Level

EdLevel

(no value) 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....)



# DISCUSSION

- **Women in Tech:**
    - How can we encourage more women to work in IT?
    - What challenges do women face in the tech industry?
  - **Why is SQL still popular?**
    - What makes SQL a valuable skill?
    - Will SQL continue to be important in the future?
  - **The Importance of HTML/CSS:**
    - Why are HTML and CSS essential for web development?
    - How will HTML and CSS evolve in the future?
- 

# OVERALL FINDINGS & IMPLICATIONS

## Findings

- By next year, JavaScript and HTML/CSS will remain in the top 1st and 2nd positions.
- While SQL is going to be surpassed by Python, Bash/Shell/PowerShell are not shown in the next year's predictions.
- PostgreSQL is predicted to be in the 1st place, surpassing MySQL, compared to the disappearance of Microsoft SQL Server and SQLite.
- The Linux platform will hold the largest proportion, while Windows will be replaced by Docker.
- React.js is predicted to be the highest preference for Web Frameworks in the next year, replacing jQuery.
- By gender, men are shown to respond more than women, with the highest number of responses coming from the Russian Federation. The most common age group is around 28, and most respondents hold a Bachelor's degree.

## Implications

- JavaScript and HTML/CSS will continue to be popular.
- Python is going to be more in demand.
- SQL servers will still be required, but PostgreSQL is expected to be the most popular database.
- Docker is becoming more preferred, alongside Linux.
- The demand for jQuery is decreasing.
- It is assumed that a large number of young Russian men with Bachelor's degrees are likely to have responded to the survey.

# CONCLUSION

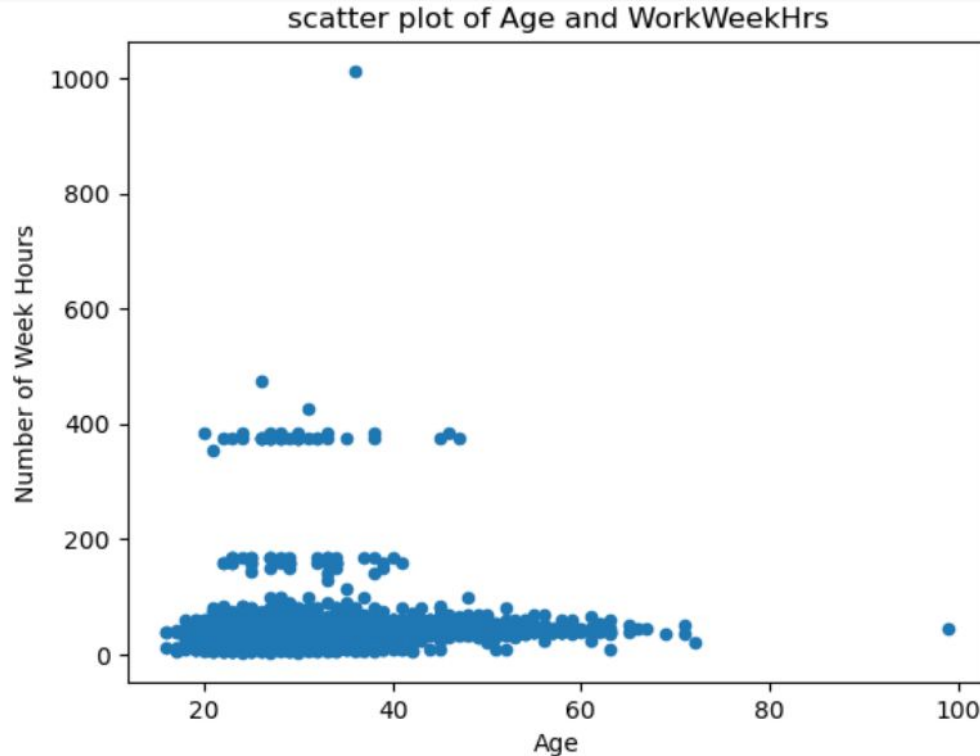
- HTML/CSS is estimated to **remain** popular in the next year.
- PostgreSQL will be the **most in-demand** database.
- The **Linux** platform is predicted to **remain** the most required.
- **React.js** will occupy the **largest percentage** of the Web Framework market.
- **Men** are more interested in IT skills than women.





# APPENDIX

## Age vs Work Week



# APPENDIX

## Job Postings by Location

Number\_of\_Jobs by Location



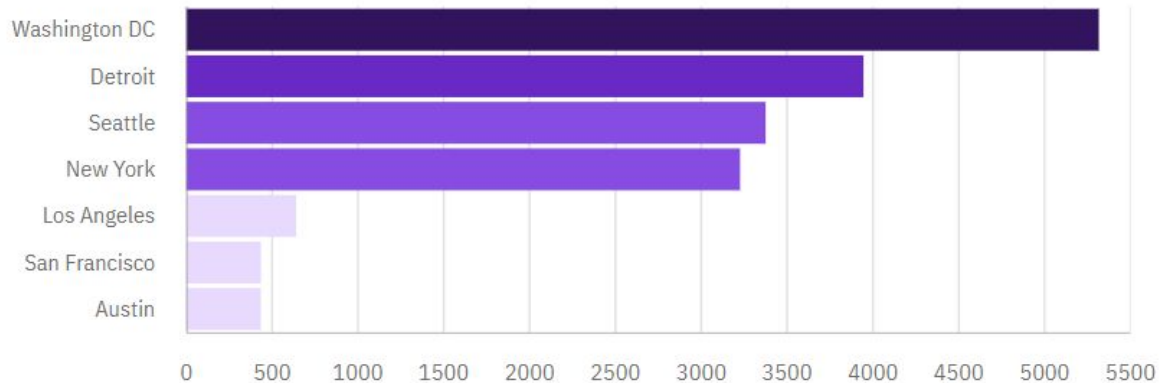
Number\_of\_Jobs (...)



434

5316

Location



Number\_of\_Jobs (Sum)

# Appendix

## Annual Average Salary by Language Name

Annual average salary by Language name



annual average sa...

