



# TRENDING TECHNOLOGIES

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# OUTLINE

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

# EXECUTIVE SUMMARY



- Analyzing data from various sources, including job postings, training portals, and surveys.
- Providing insights in demand to help organization to stay competitive and anticipate future skill requirement by undergoing below steps:
  - Use of techniques like web scraping for data collection.
  - Use of data wrangling process to clean and transform it into a consistent format suitable for analysis.
  - Use of “Exploratory Data Analysis”
- Visualizing the findings to create interactive and visually appealing dashboard with “IBM Cognos Analytics Dashboard”.
- Highlighting the languages that organizations are seeking in job postings and the preferences of developers.
- Provides recommendations for upskilling and reskilling employees, focusing on the most in-demand programming languages, database skills, and IDEs

# INTRODUCTION

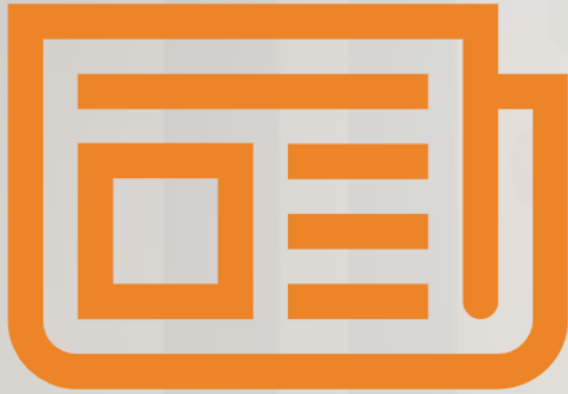


- This report is about the IT industry which is dynamic and constantly evolving. Staying competitive in this landscape requires organizations to adapt and anticipate future skill requirements.
- Aim to provide cutting-edge services to clients and remain at the forefront of technological innovation
- Aim to determine the top programming languages, database skills, and popular IDEs that are in high demand.
- To keep pace with changing technologies:
  - Regularly analyze data to understand the evolving skill landscape.
  - Identify emerging skills to stay competitive.



# METHODOLOGY

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- Scraping websites, accessing APIs, and collecting data in different formats like CSV files, Excel sheets, and databases.
- Data has been cleaned and normalized by data wrangling technique
- Did “Exploratory Data Analysis” to identify distribution and outlier of data , removed outliers and found correlation between features in dataset.
- Visualized data using dashboard “IBM Cognos Analytics” to:
  - Understand the relationships of the data.
  - Understand the characteristics of the data.

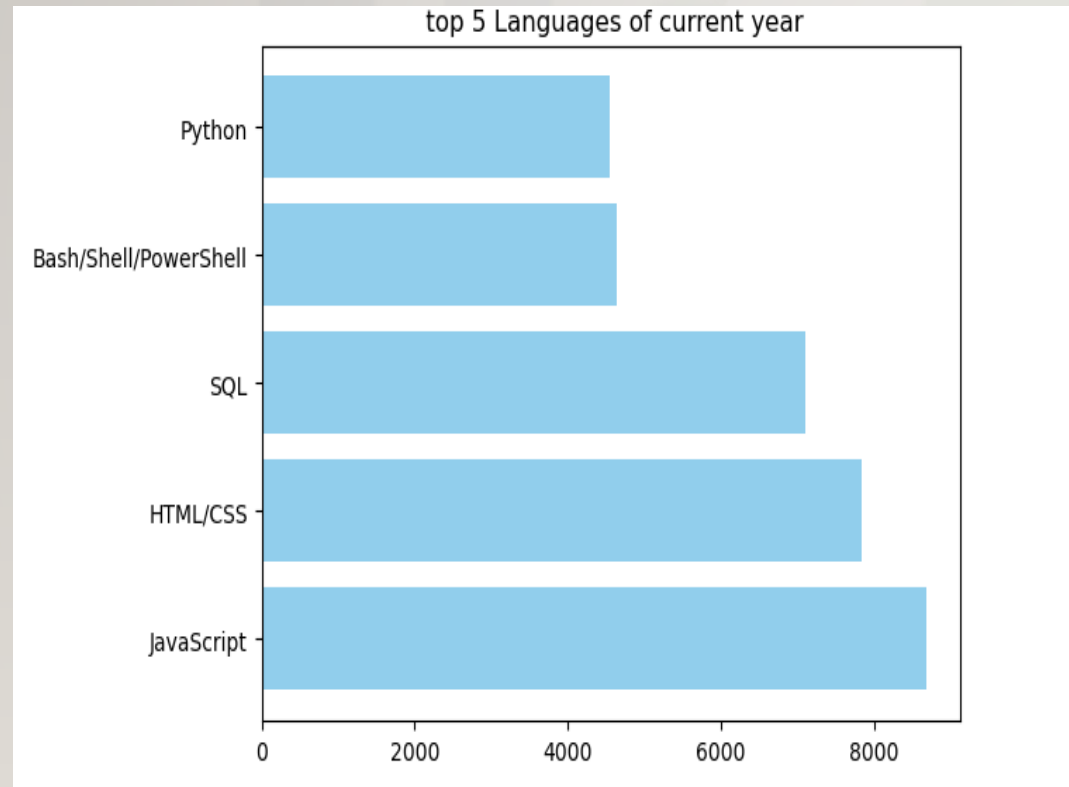
# RESULTS

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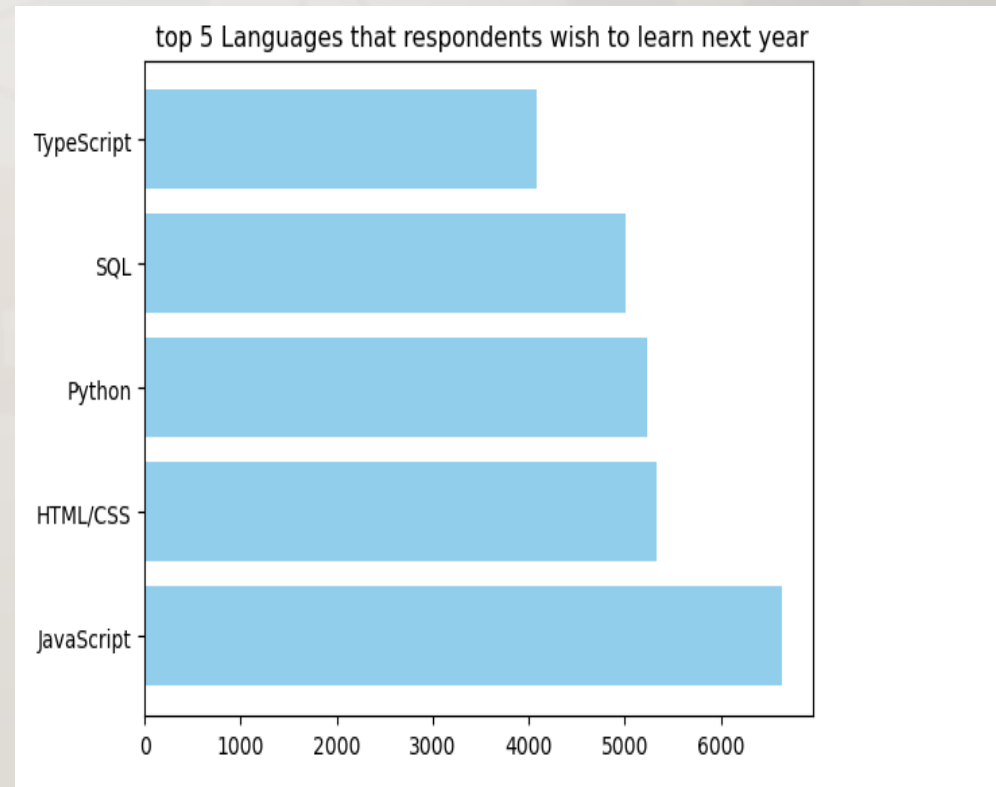
- Top 10 Programming languages which are in demand: Python, JavaScript, Java.
- Top 10 databases which are in demand: Postgre, MongoDB.
- Platforms: Linux, Docker.
- Web-Frames: jQuery, Angular.

# PROGRAMMING LANGUAGE TRENDS

## Current Year



## Next Year



# PROGRAMMING LANGUAGE TRENDS - FINDINGS & IMPLICATIONS

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## Findings

- Skill Development
- Continuous Learning and Growth
- Career Specialization

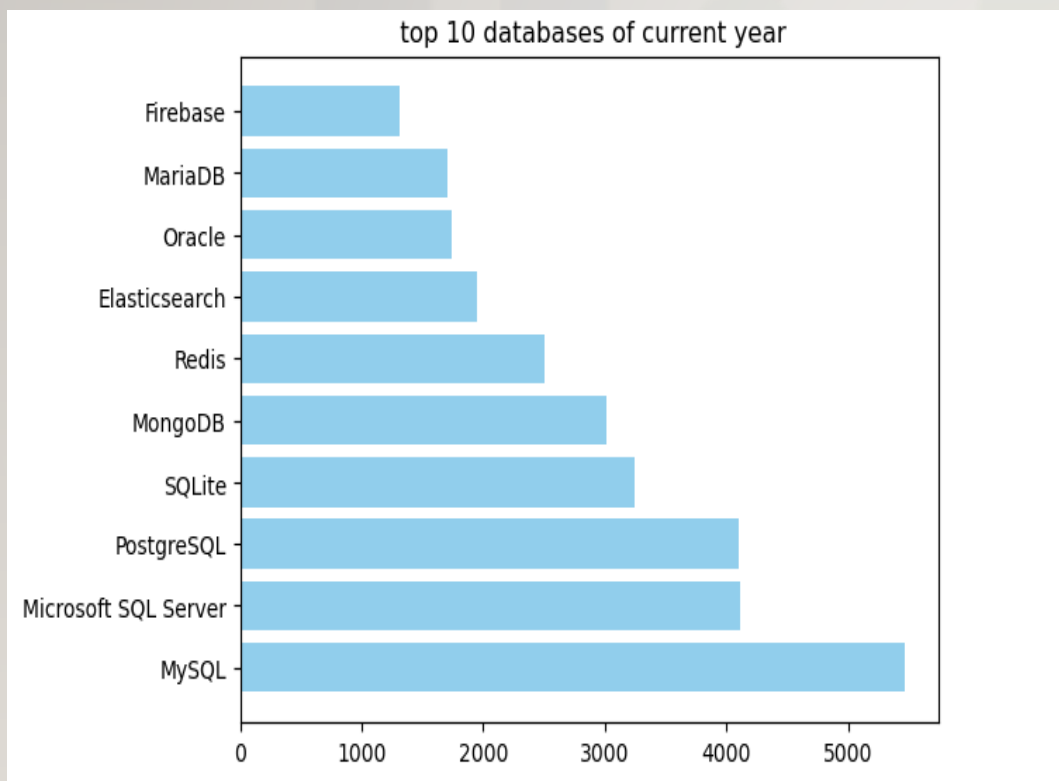
## Implications

- Developing skills in programming languages enhances your employability by making you a valuable asset to organizations.
- Programming languages continually evolve, and skill development ensures you remain updated with new features, frameworks, and best practices.
- Proficiency in specific programming languages can lead to career specialization in domains where those languages are widely used.

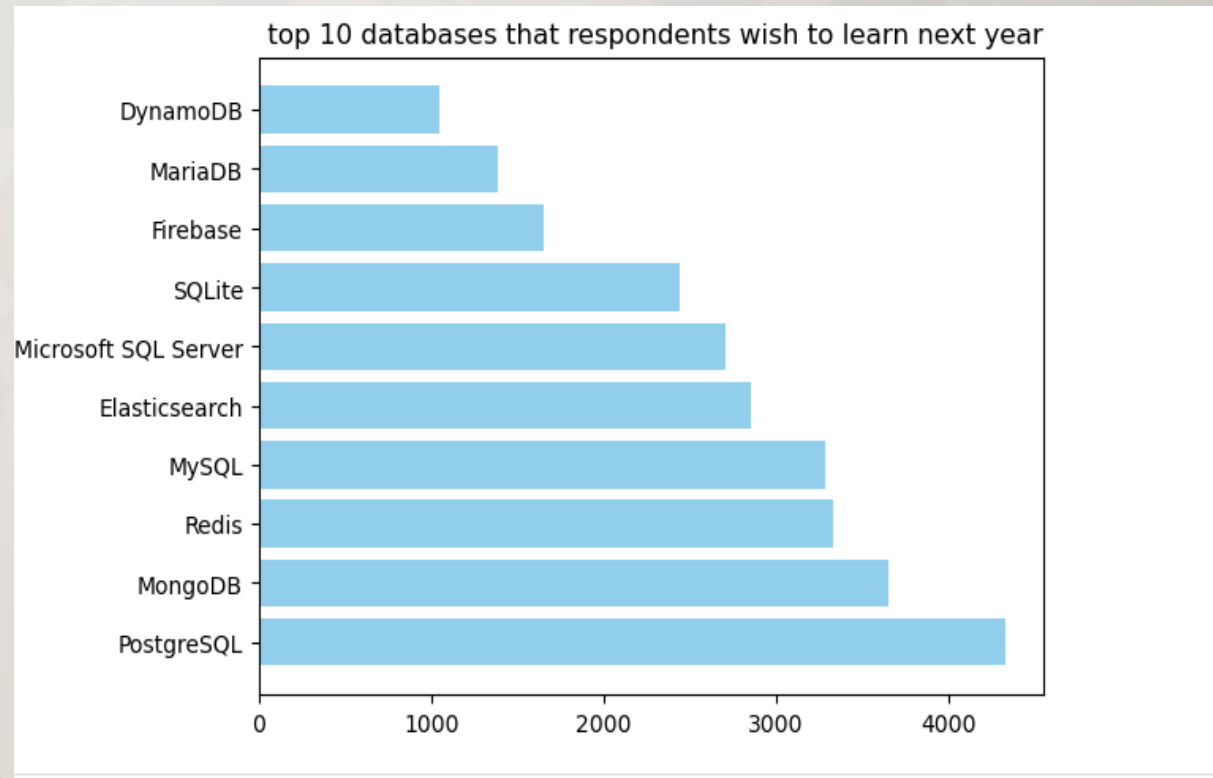


# DATABASE TRENDS

## Current Year



## Next Year



# DATABASE TRENDS - FINDINGS & IMPLICATIONS

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## Findings

- Future Trends and Emerging Technologies
- Training Resource Availability
- Future-Proofing Skills

## Implications

- Being aware of emerging trends allows individuals and organizations to stay ahead of the curve and gain a competitive edge.
- Training resources enable professionals to expand their expertise in databases, opening up opportunities for career advancement.
- Future-proofing database skills ensures that professionals remain relevant and in-demand in the evolving job market.

# DASHBOARD

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## Current Technology Usage link:

<https://datapatform.cloud.ibm.com/dashboards/c1e48be7-ad0e-4822-9eb1-168fa072616c/view/7a3dfd1d32ae22ca51bcd0e407cb2c0f7d642d55bbbb8b06d1827b490d312297f33f41c3c87e4f5add160535f3ed1308ce>

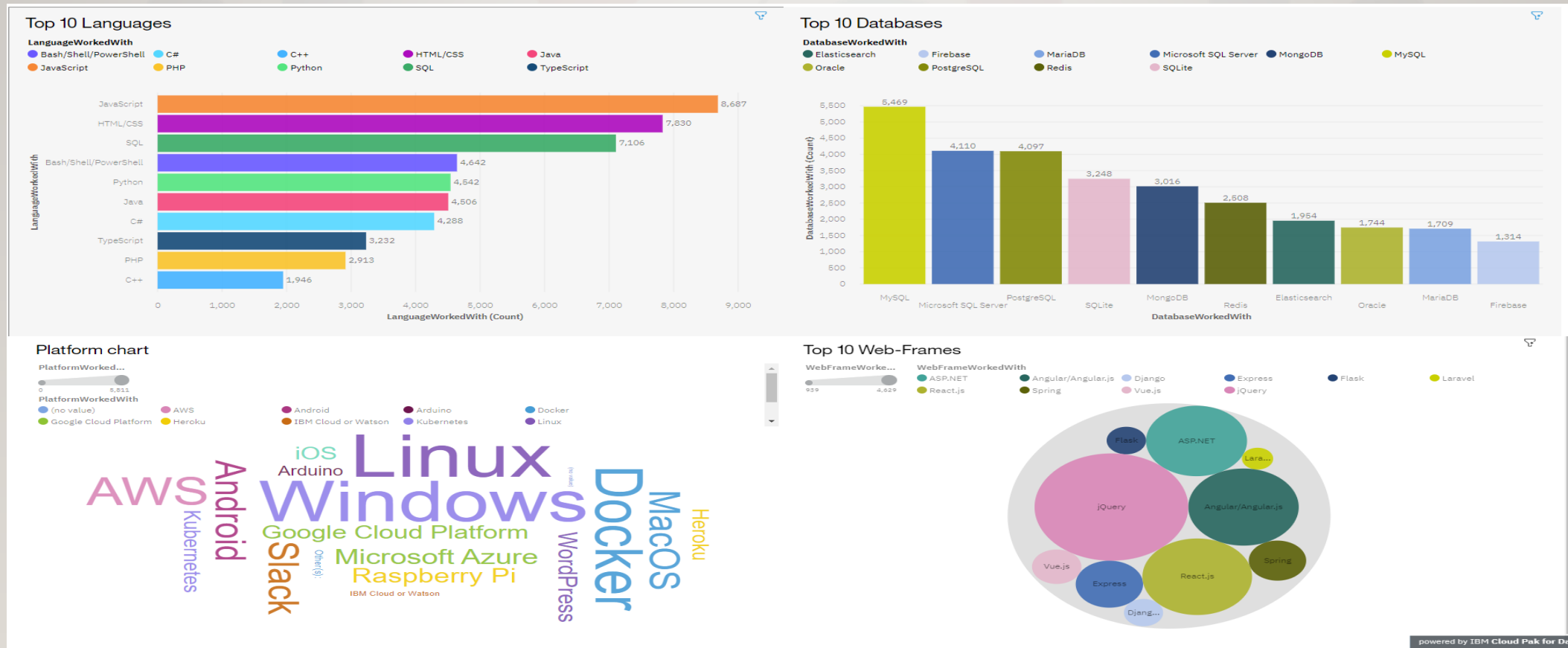
## Future Technology Trend link:

<https://datapatform.cloud.ibm.com/dashboards/e1f56ac8-818b-420c-be14-d88f94a0004d/view/451cc53d3dab3c8972e0b1e407cb2c0f7d642d55bbbb8b06d1827b490d312297f33f41c3c87e4f5add160535f3ed1308ce>

## Demographics:

<https://datapatform.cloud.ibm.com/dashboards/44252f13-9850-46b3-b04c-8cd4ce8bcd58/view/6305c516109e1ecf6acfc4e407cb2c0f7d642d55bbbb8b06d1827b490d312297f33f41c3c87e4f5add160535f3ed1308ce>

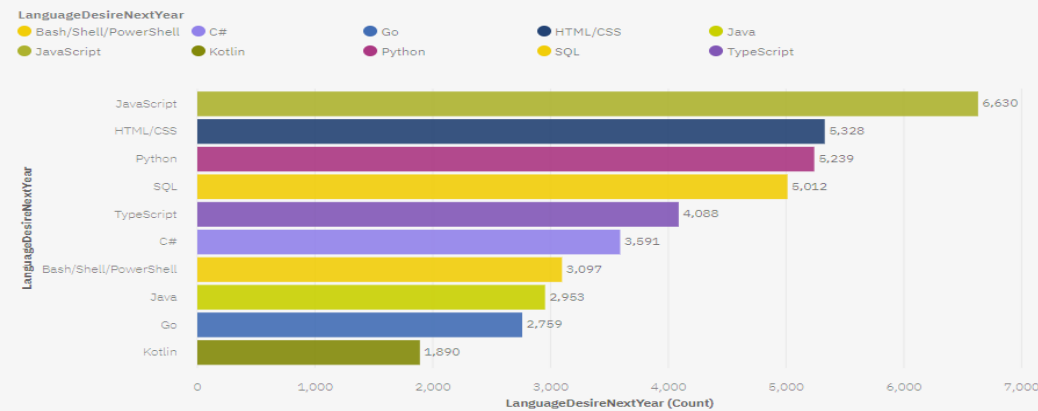
# CURRENT TECHNOLOGY USAGE



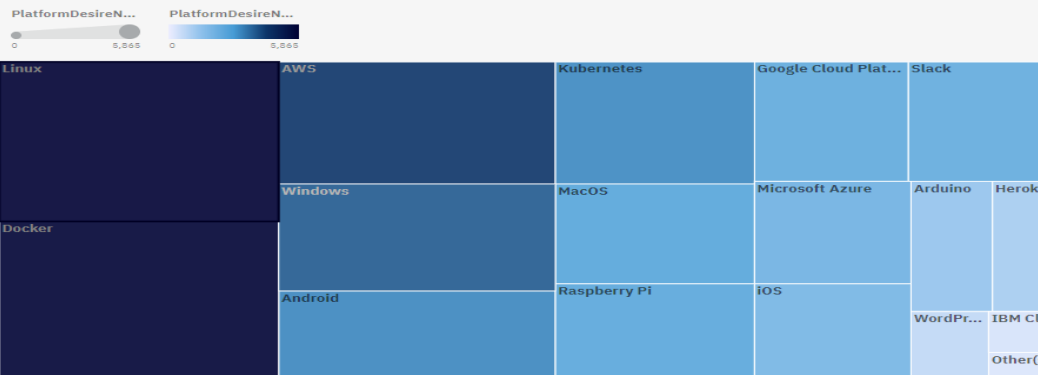


# FUTURE TECHNOLOGY TREND

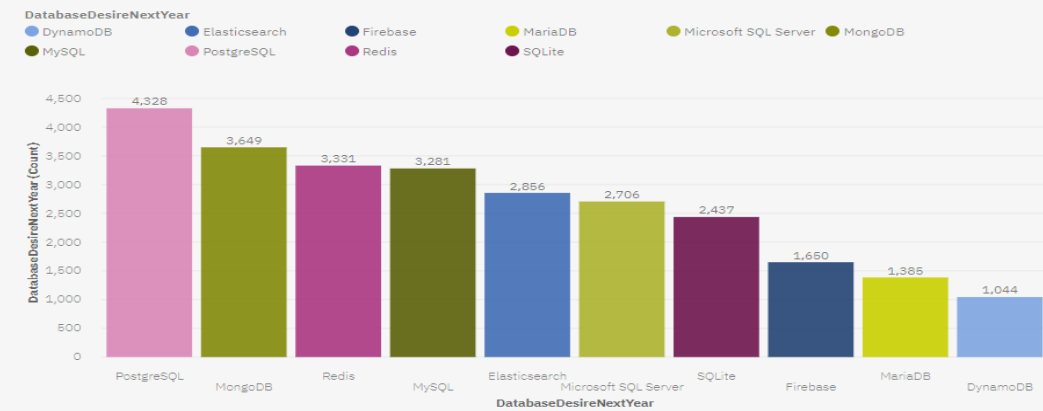
Top 10 Language Desire Next Year



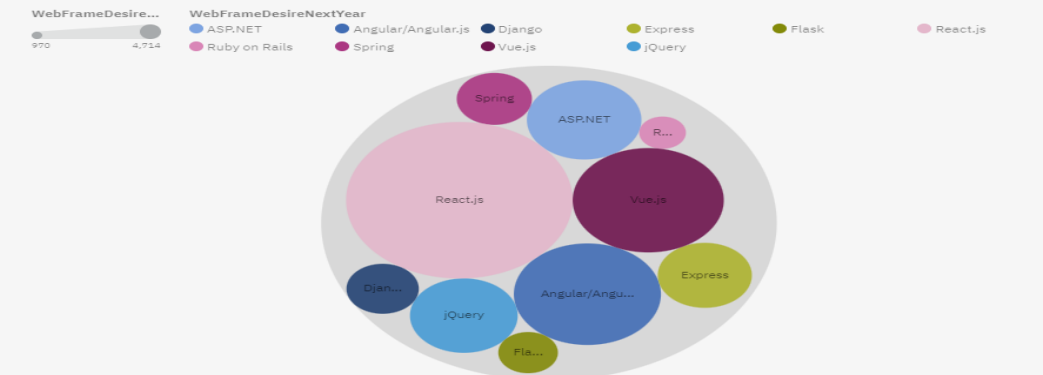
Platform Desire Next Year



Top 10 Database Desire Next Year



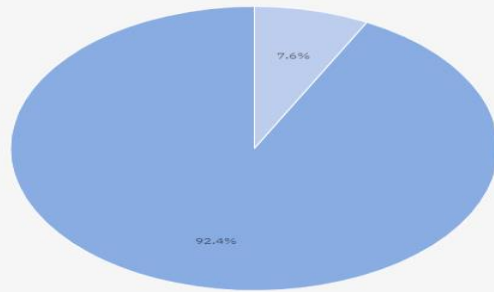
Top 10 Web Frame Desire Next Year



# DEMOGRAPHICS

Respondent classified by Gender

Gender  
● Woman ● Man

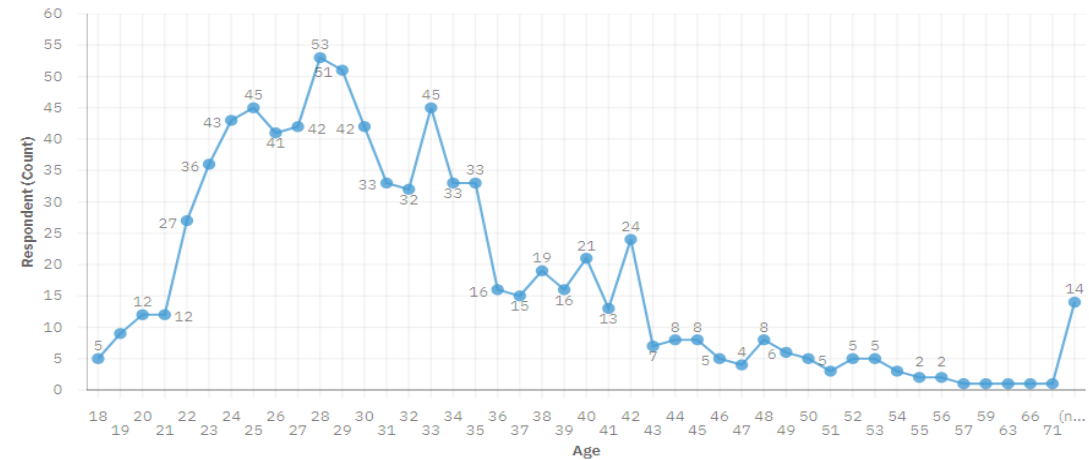


Respondent Count for Countries

Respondent (Cou...  
1 5,000



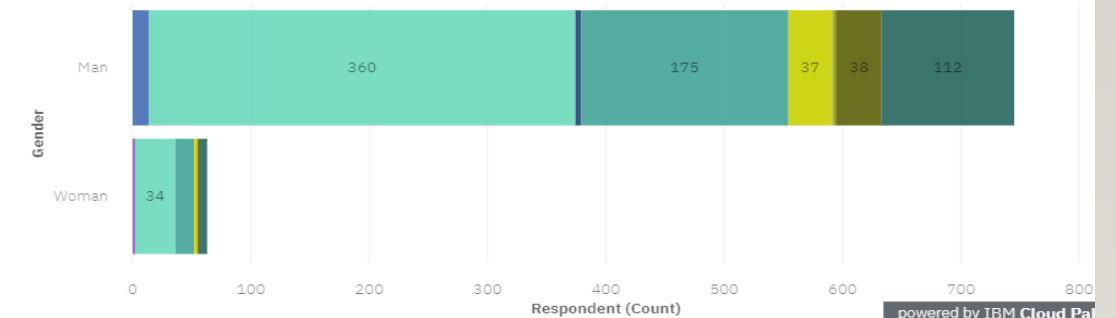
Respondent Count by Age



Respondent Count by Gender, classified by Formal Education Level

Education Level

- (no value)
- I never completed any formal ...
- Primary/elementary school
- Some college/university study ...
- Associate degree
- Master's degree (MA, MS, M.E...
- Professional degree (JD, MD, e...
- Bachelor's degree (BA, BS, B.E...
- Other doctoral degree (Ph.D, E...
- Secondary school (e.g. Americ...



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# DISCUSSION

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- The dominance of Python, JavaScript, and Java as the top programming languages in demand reflects the widespread adoption and versatility of these language.
- In terms of database skills, the demand for SQL proficiency highlights the continued reliance on relational databases and the importance of data querying and manipulation.

# OVERALL FINDINGS & IMPLICATIONS

## Findings

- Top Programming Languages in Demand
- Top Database Skills in Demand
- Popular Integrated Development Environments (IDEs)

## Implications

- Invest in continuous learning to enhance proficiency in in-demand languages like Python, JavaScript.
- Skill development to enhance proficiency in database technologies like SQL, MongoDB, and PostgreSQL can position yourself as a valuable resource in the industry and increase your employability.
- Familiarity with these tools can enhance your productivity and collaboration with development teams



# CONCLUSION

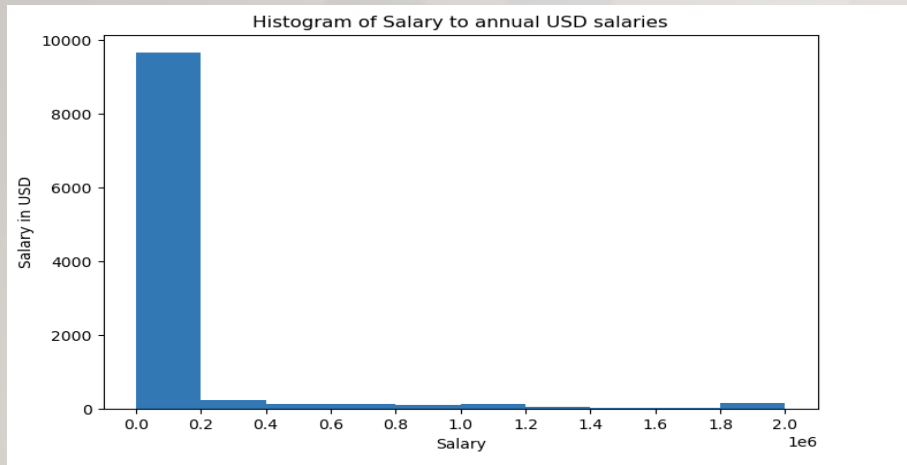
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- In conclusion, we have collected data using various sources.
- Using data analysis, we have identified the top programming languages, database skills, and IDEs in demand.
- By analyzing the collected data and understanding the trends in programming languages, database skills, and IDEs, you can position yourself as an expertise in emerging technologies.
- Analyzing and staying updated with emerging trends in technology, particularly in programming languages and databases, is crucial for individuals and organizations aiming to remain competitive and relevant in today's rapidly evolving landscape.

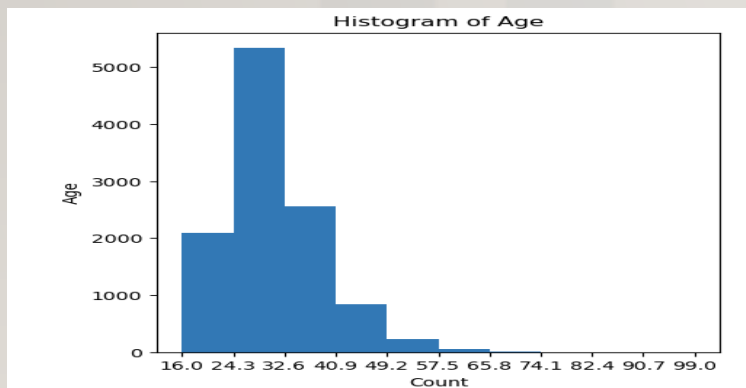
# APPENDIX

Below depicts the histogram of salaries to annual USD salaries using the exchange rate on 2019-02-01 and histogram of Ages



- assuming 12 working months and 50 working weeks.

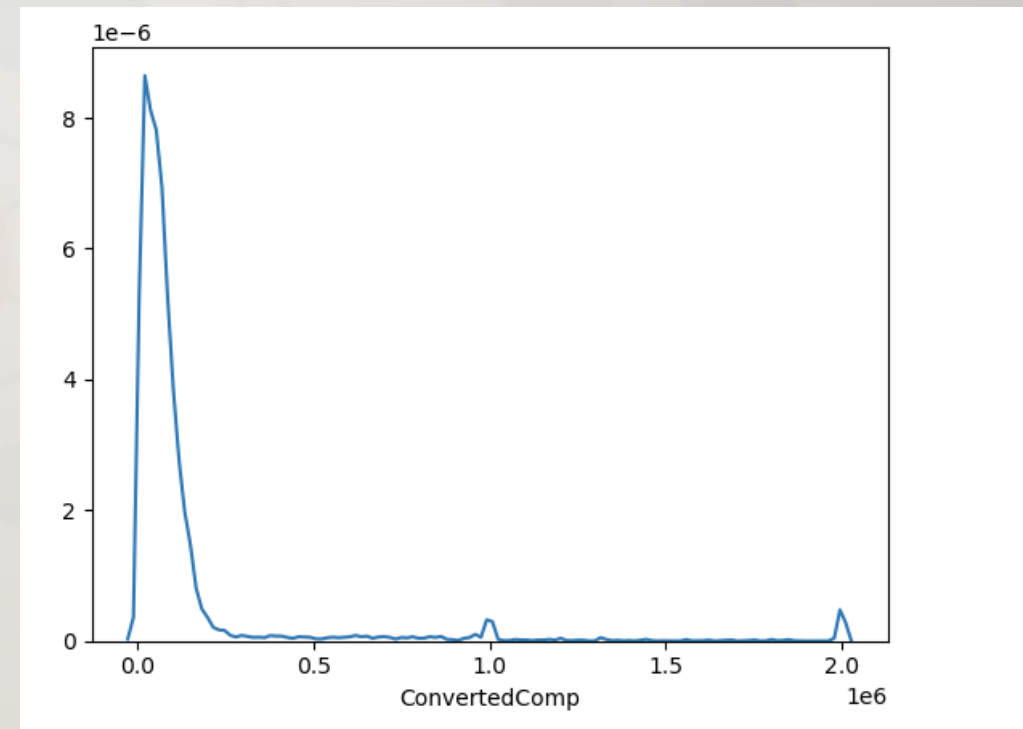
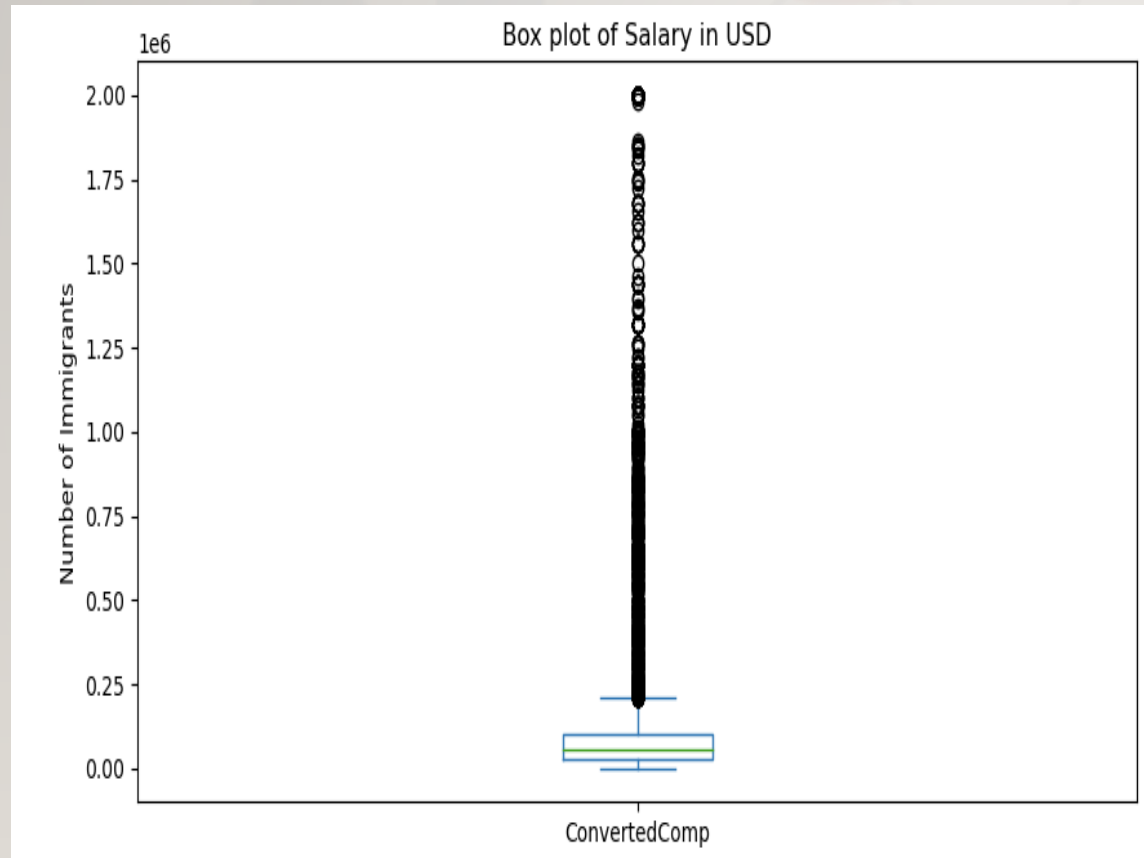
Below table depicts the correlation of age to Converted Comp:



]:

	Respondent	CompTotal	ConvertedComp	WorkWeekHrs	CodeRevHrs	Age
Respondent	1.000000	-0.019364	0.010878	-0.015275	0.002980	0.003950
CompTotal	-0.019364	1.000000	-0.063561	0.004975	0.017536	0.006371
ConvertedComp	0.010878	-0.063561	1.000000	0.034351	-0.088934	0.401821
WorkWeekHrs	-0.015275	0.004975	0.034351	1.000000	0.031963	0.037452
CodeRevHrs	0.002980	0.017536	-0.088934	0.031963	1.000000	-0.017961
Age	0.003950	0.006371	0.401821	0.037452	-0.017961	1.000000

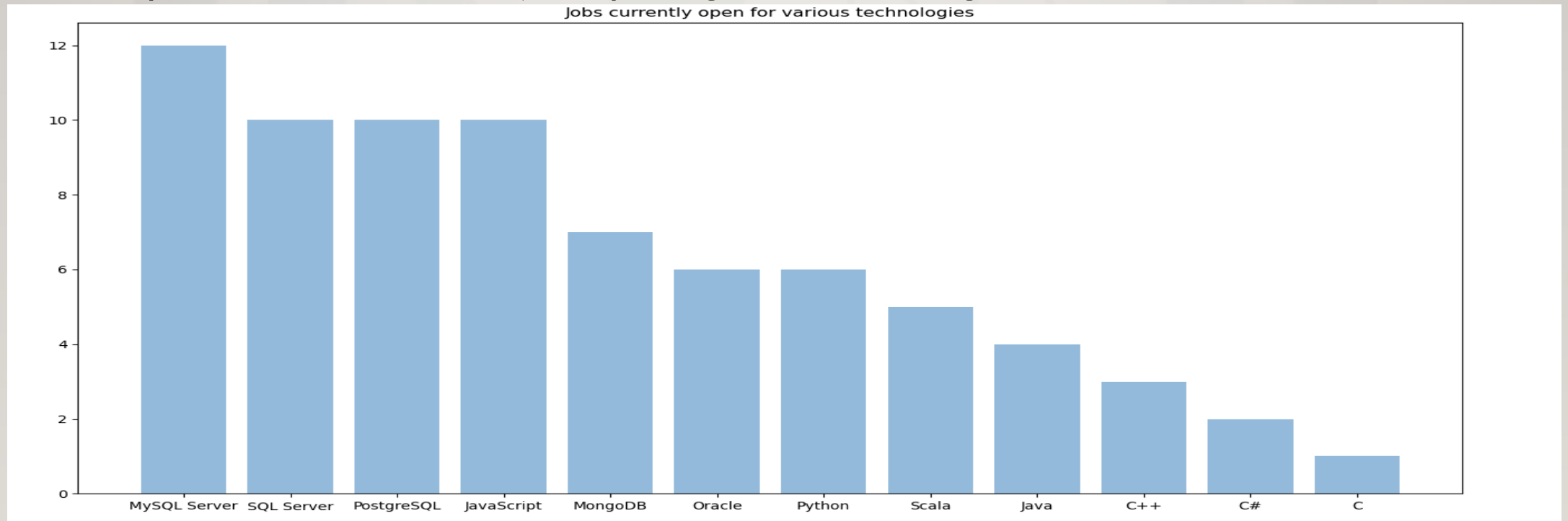
# SALARY IN USD



# JOB POSTINGS

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Below depicts the bar chart of job openings in descending order:





# POPULAR LANGUAGES

Below depicts the bar chart of popular programming languages in descending order:

