



Emerging Technology and Programming Skills in Demand Trend Analysis

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OUTLINE



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- Methodology
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- Discussion
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EXECUTIVE SUMMARY



- Current and future programming language trends
- Demographics survey on findings and implications of programming language trends
- Findings on database trends
- Evaluation and findings through data visualization on technology and gender gap

INTRODUCTION



1. Identify current technology usage trends
2. Identify future technology usage trends
3. Identify Demographics overview and classification
4. identify popular languages on various factor
5. Popular databases and its implications

METHODOLOGY



- Data collection using APIs
- Web Scraping
- Data Wrangling or munging values in the dataset and Normalizing
 - Identifying and removing duplicate values
 - Identifying and imputing missing values
 - Normalize data in the dataset
- Exploratory Data Analysis
 - find distribution of data
 - presence of outliers
 - determine correlation between different columns in the dataset
- Data Visualization using SQL queries
 - Find distribution of data
 - Relationship between two features
 - Composition and comparison of data
- Building Dashboard with Cognos Dashboard Embedded (CDE)

RESULTS

1. Analyze and Visualize Current technology usage

- Top 10 Languages
- Top 10 Databases
- In demand Platforms
- Top 10 WebFrames

2. Analyze and Visualize Future technology usage

- Top 10 Languages desired for the next year
- Top 10 Databases desired for the next year
- Desired platforms for the next year
- Top 10 WebFrames desired for the next year

3. Analyze and Visualize Demographics

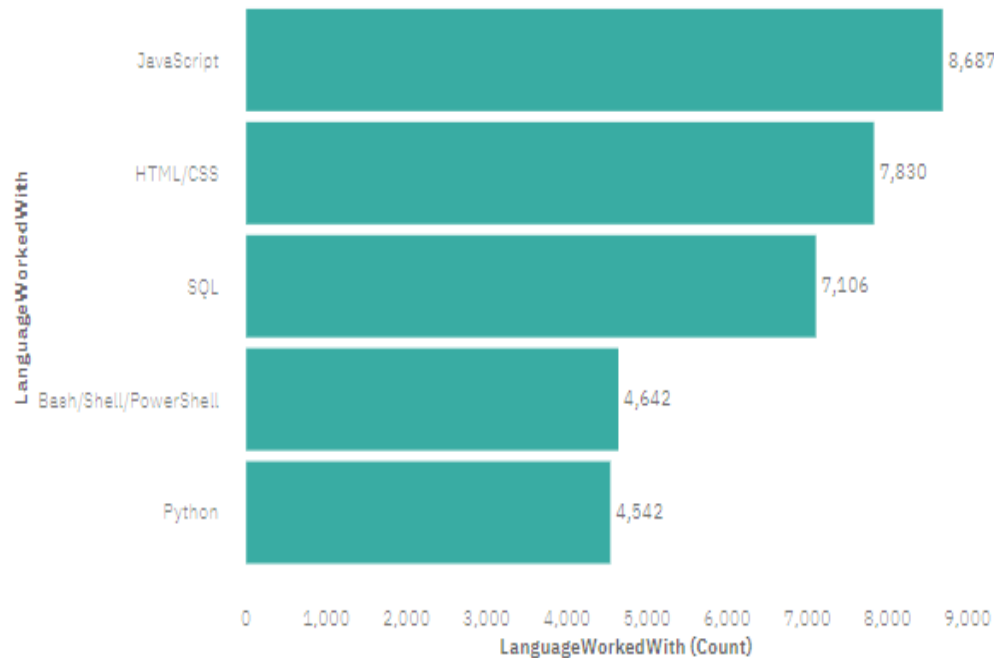
- Respondent classified by gender
- Respondent count for countries
- Respondent count by age
- Respondent count by gender and classified by education level

4. Analyze and Visualize Popular languages by Average Salary and Job Postings

PROGRAMMING LANGUAGE TRENDS

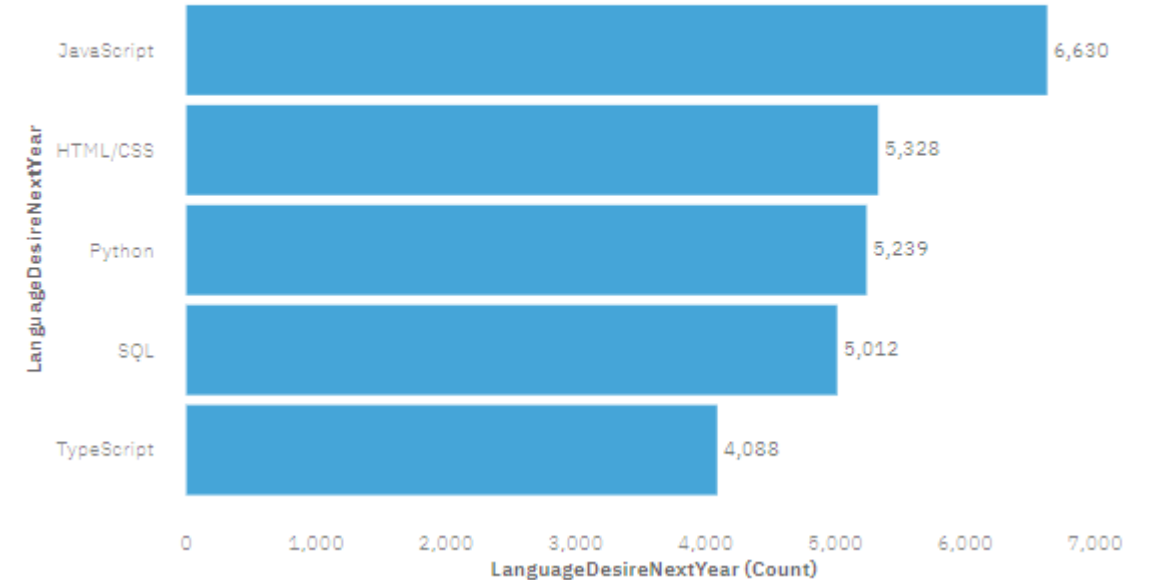
Current Year

Top 5 Programming Language (Current Year)



Next Year

Top 5 Desired Programming Language (Next Year)



PROGRAMMING LANGUAGE TRENDS - FINDINGS & IMPLICATIONS

Findings

- On Top 5 languages, Javascript language stands on the top followed by HTML/CSS and SQL where as python stood on 5th position on the current year
- However, python and typescript increased in demand next year
- PowerShell demand fading out next year

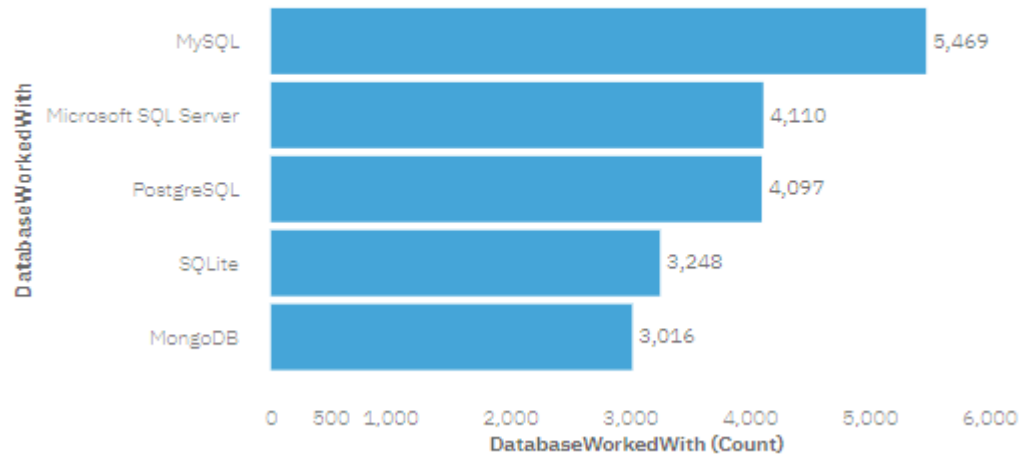
Implications

- Although JavaScript language is seen on top most, due to increase in data analytics demand, python is best choice
- However, web development language still in high demand which should not be neglected
- SQL knowledge is a must in any programming language

DATABASE TRENDS

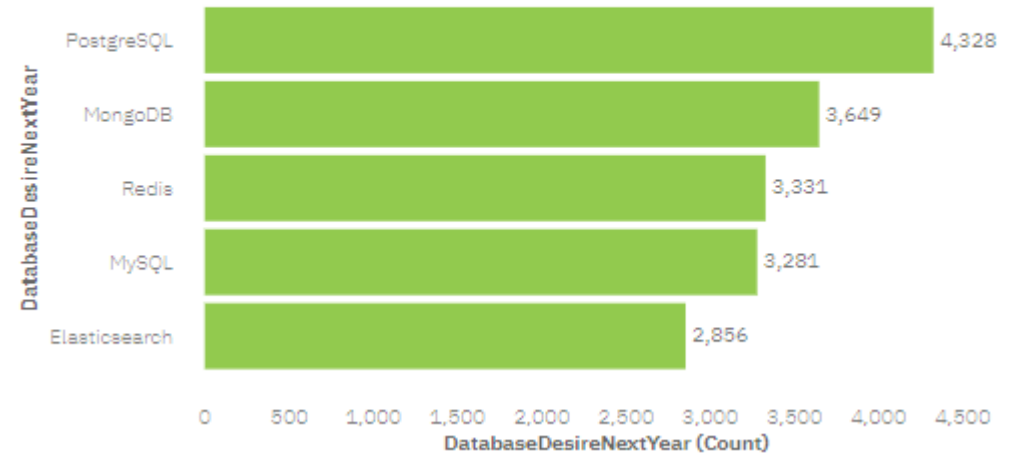
Current Year

Top 5 Databases (Current Year)



Next Year

Top 5 Desired Databases (Next Year)



DATABASE TRENDS - FINDINGS & IMPLICATIONS

Findings

- MySQL is the most popular database followed by MS SQL Server and PostgreSQL with the least popular being MongoDB in current year
- However, MongoDB, PostgreSQL and Redis are gaining popularity in next year
- Elasticsearch seen as new emerging database on market next year

Implications

- NoSQL database making greater impact on database platforms
- Open-source databases are quite desirable in businesses
- Rather than traditional database, companies should move to new emerging database where least coding is required.

DASHBOARD

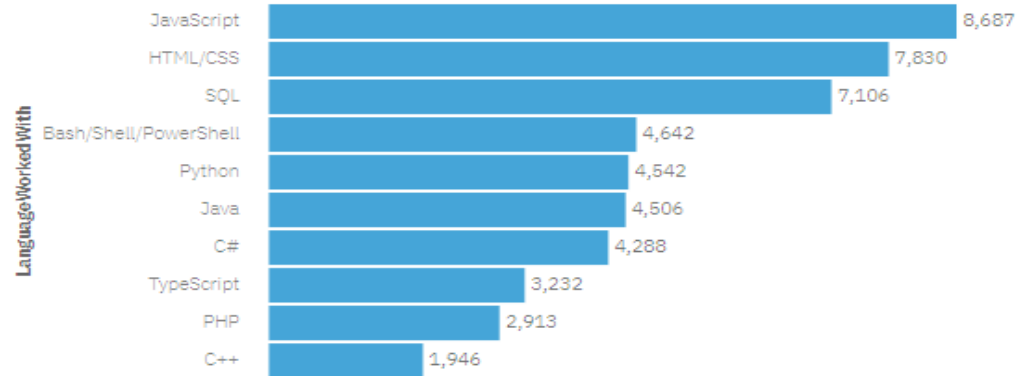
Permanent link to view Dashboard with Cognos Dashboard Embedded(CDE)



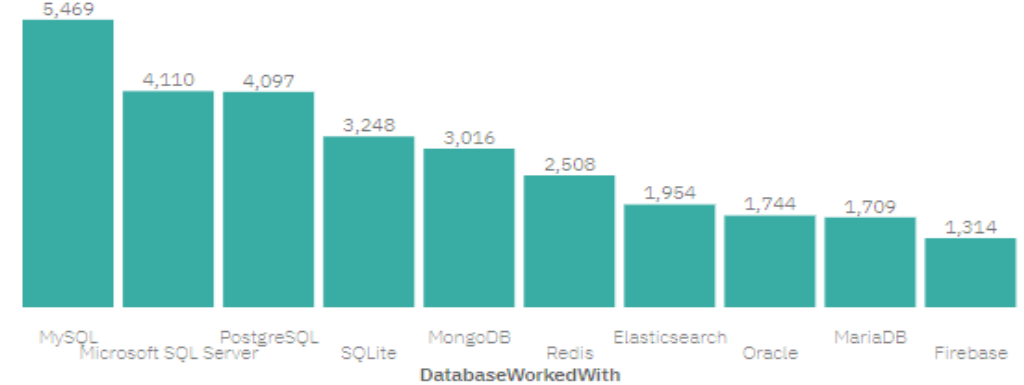
<https://jp-tok.dataplatform.cloud.ibm.com/dashboards/b5bc572f-a534-478c-8f76-1167b8bddabb/view/5824a43732ed339540eed4e407cf7f507b647109b3bb850a82d67b495d667797a86c40c3c827480bdf475336fbb8410ccc>

DASHBOARD – CURRENT TECHNOLOGY USAGE

Top 10 Language Worked With



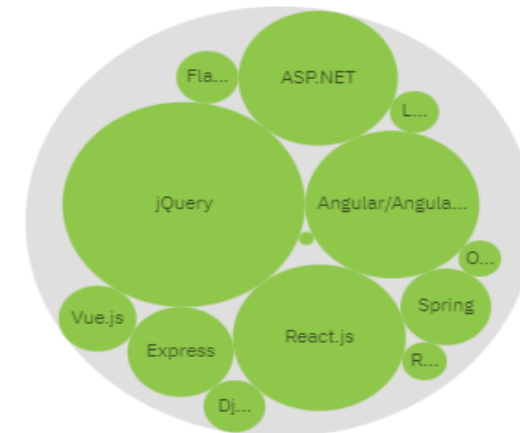
Top 10 Database Worked With



Platform Word With

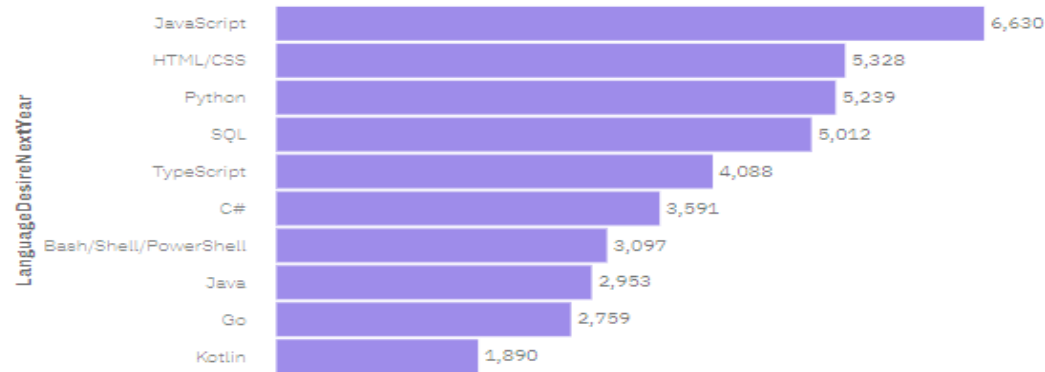


Top 10 WebFrame Worked With

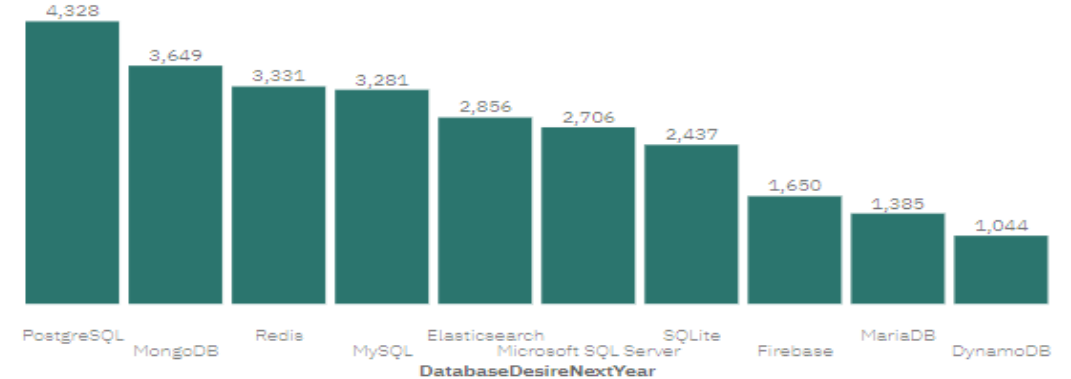


DASHBOARD – FUTURE TECHNOLOGY USAGE

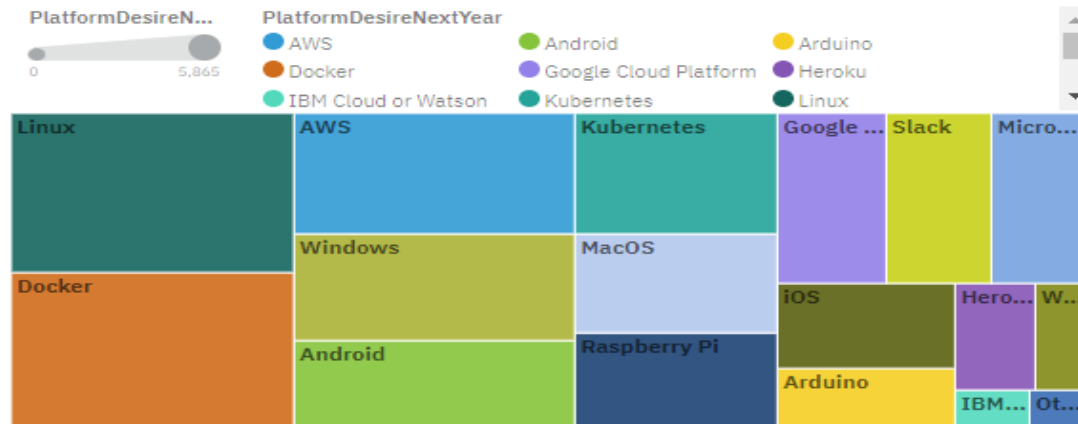
Top 10 Language Desire Next Year



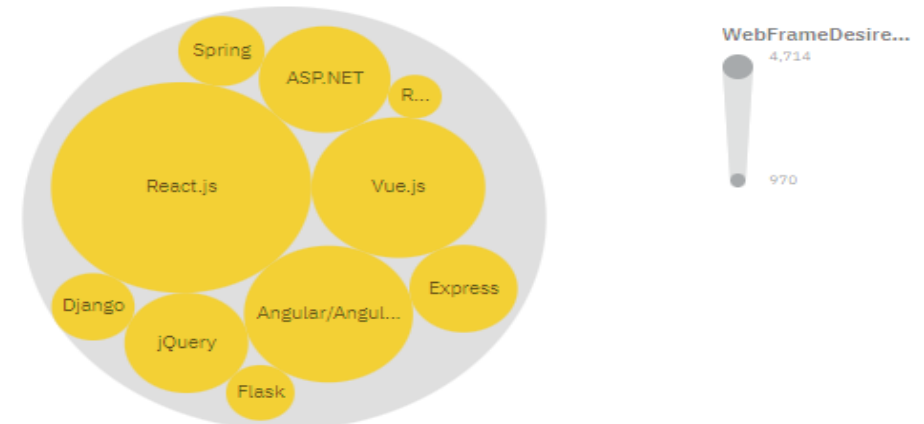
Top 10 Database Desire Next Year



Platform Desire Next Year



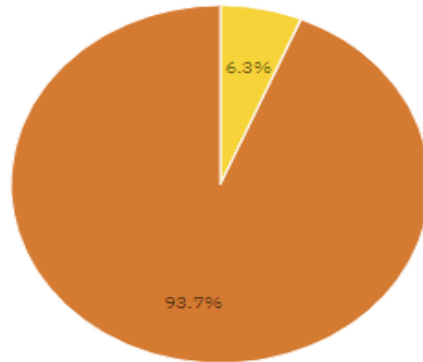
Top 10 Web Frame Desire Next Year



DASHBOARD - DEMOGRAPHICS

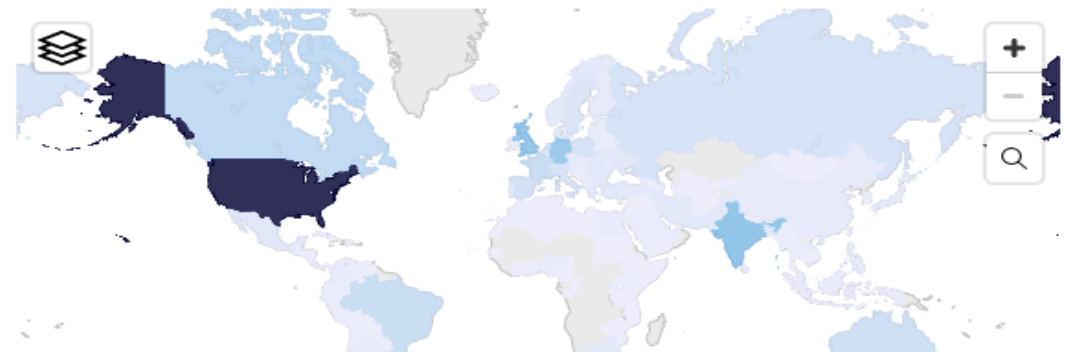
Respondent Classified by Gender

Gender
● Woman ● Man

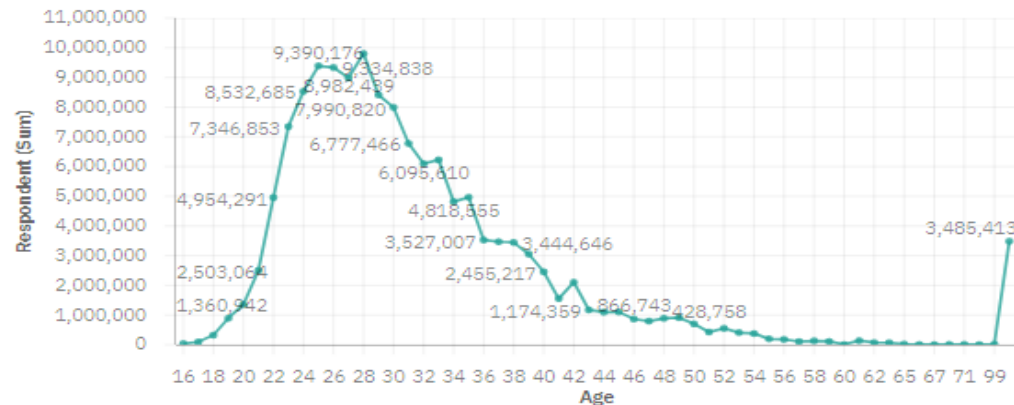


Respondent Count by Countries

Respondent (Sum)
865 39,154,240

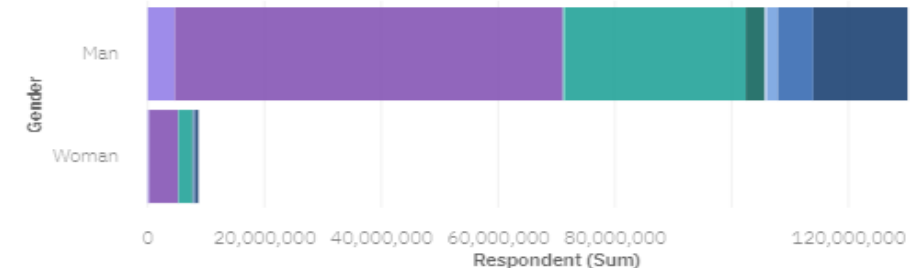


Respondent Count by Age



Respondent Count by Gender, Classified by Formal Education Level

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



DISCUSSION



- Current and future Technology and programming language in demand
- Gender gap in technology usage
- Technology gaps in developing countries
- Impact of formal education level on age and gender

OVERALL FINDINGS & IMPLICATIONS

Findings

- New emerging technology
- Gender gaps in technology related jobs
- Importance of formal education in relation to gender and age

Implications

- Companies need to embrace new emerging technology as per time
- Formal education seen as an important factor to introduce new technology and their usage and benefits in developing countries
- Encourage and empower more woman in technology related jobs and skills

CONCLUSION

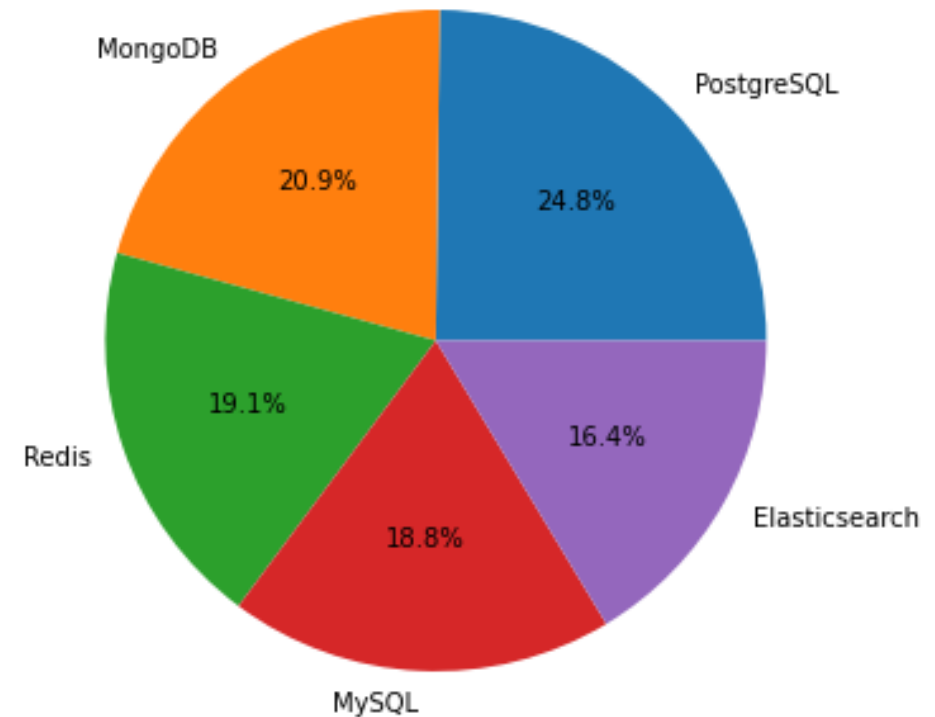


- Findings on Current and future technology usage trends
- Findings on demographics analysis by different classification
- Findings on technology and gender gap
- Findings on popular programming language by salary and job postings
- Findings of popular databases and its implications

APPENDIX

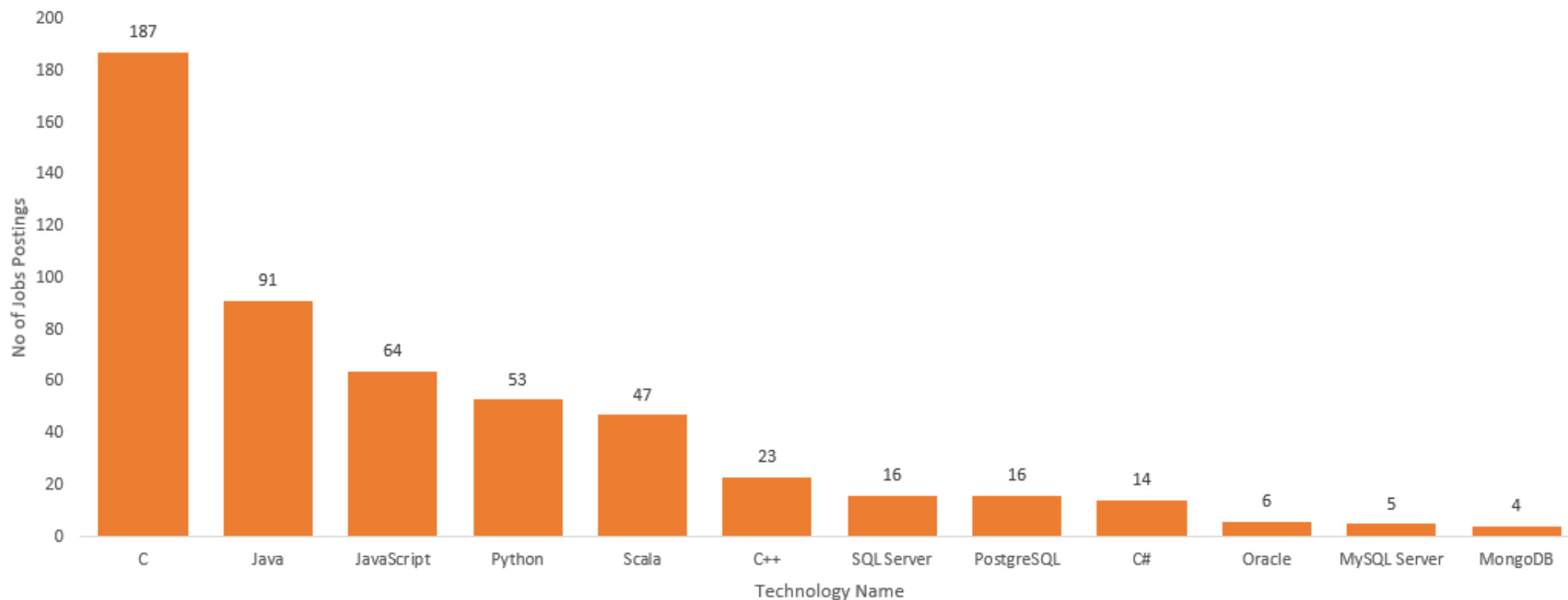


- Pie chart of Top 5 databases that respondents wish to learn next year in percentage



GITHUB JOB POSTINGS

No. of Github Jobs Postings by Technology Name



POPULAR LANGUAGES BY SALARY

