Current and Future Trending Skills

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06/11/24

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OUTLINE

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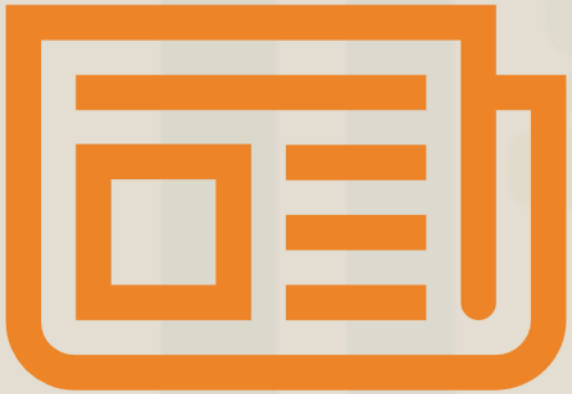
EXECUTIVE SUMMARY

- **Programming Trends:** Identify the most widely used programming languages among respondents.
- **Database Usage:** Analyze commonly employed databases.
- **Platform and Demographics:** Examine platform environments and gender/age distribution across regions.
- **Future Trends:** Understand desired future technologies among respondents.
- **Regional Analysis:** Highlight regions with the highest number of active respondents..

INTRODUCTION

- **Objective** : As a Data Analyst, objective is to identify and analyze these skills to help our organization and clients remain competitive
- **Problem Statement**: Analyze current trends in programming languages, database skills, and development environments.
- **Questions to Answer**
    1. **Top Programming Languages**: What are the top programming languages in demand?
    2. **Top Database Skills**: Which database skills are most sought after in the industry?
    3. **Popular Integrated Development Environments (IDEs)**: Which IDEs are favored by professionals?

METHODOLOGY



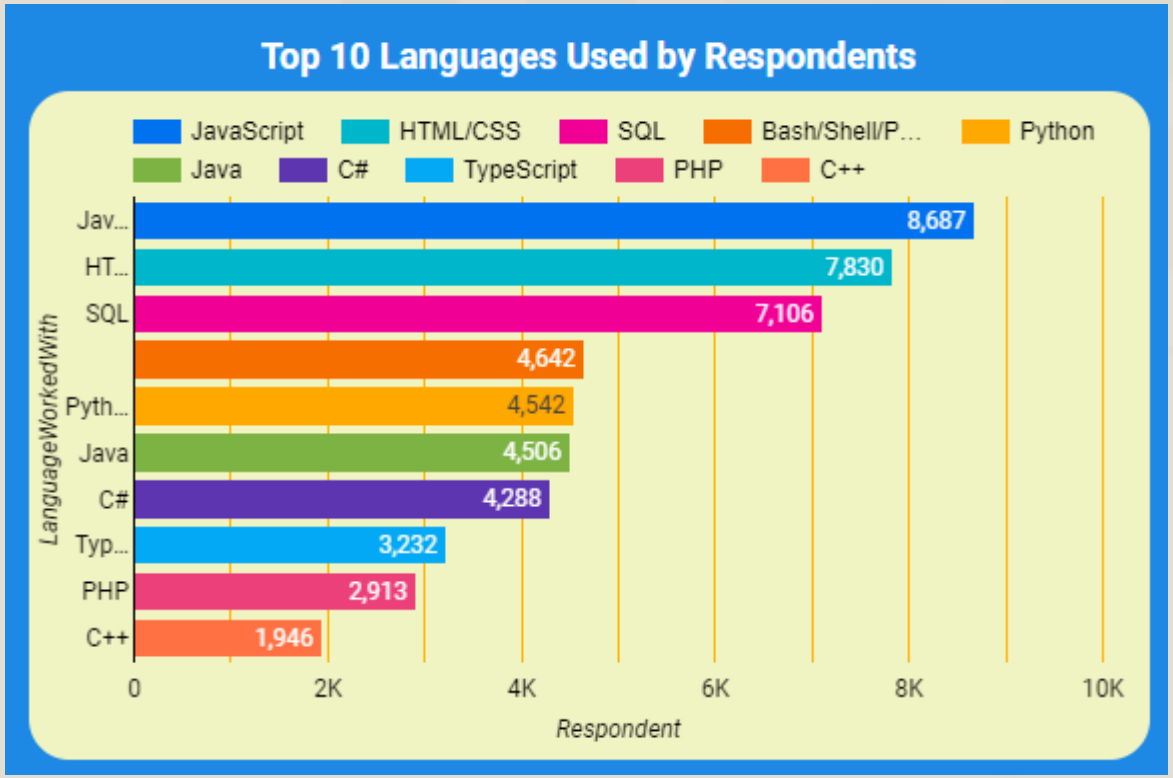
- **Data Collection**: Scrapped internet job postings, accessed training portals, and analyzed survey data to gather information.
- **Data Wrangling**: Cleansed and prepared the data for analysis.
- **Statistical Analysis**: Applied statistical techniques to uncover insights and trends.
- **Visualization and Reporting**: Created an interactive dashboard using Google Looker Studio to present our findings.

RESULTS

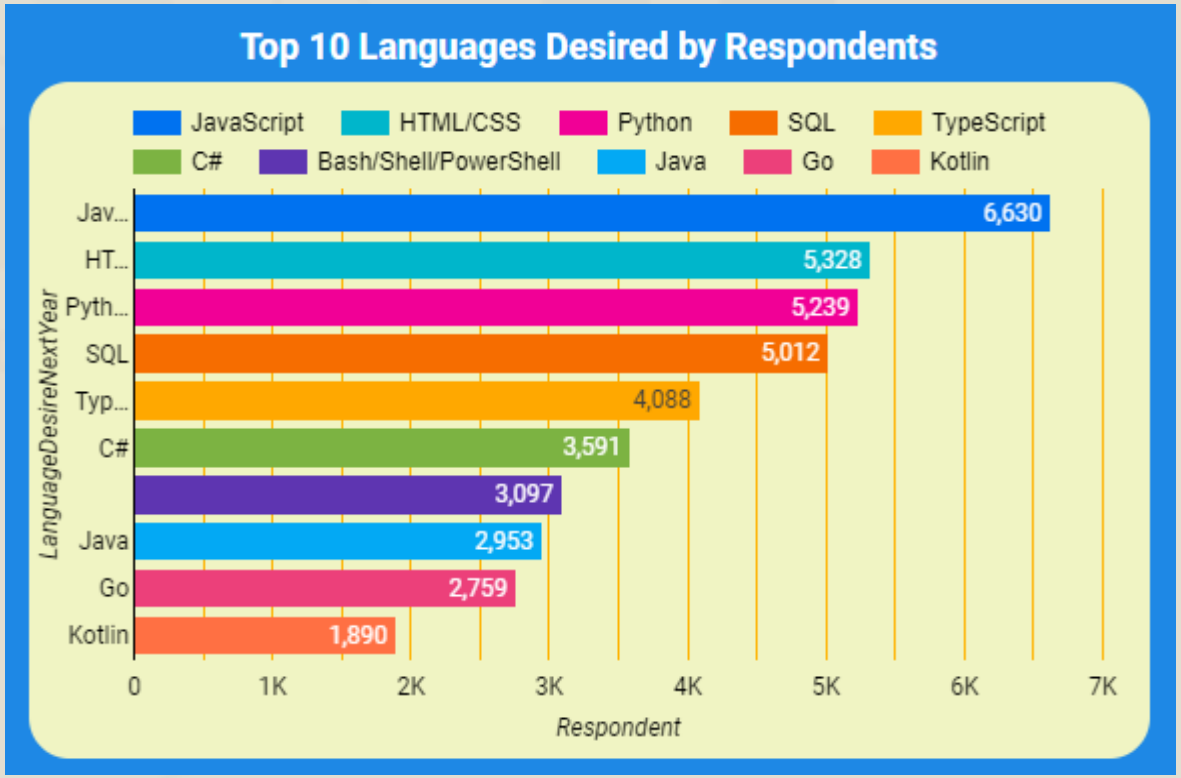
- We collected data from job postings, training portals, and surveys; organized it into CSVs and Excel sheet
- Cleaned and normalized for consistency; then applied descriptive, frequency, and correlation analysis
- To identify trends in programming languages, database skills, IDE preferences, and demographics.

PROGRAMMING LANGUAGE TRENDS

Current Year



Next Year



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PROGRAMMING LANGUAGE TRENDS - FINDINGS & IMPLICATIONS

Findings

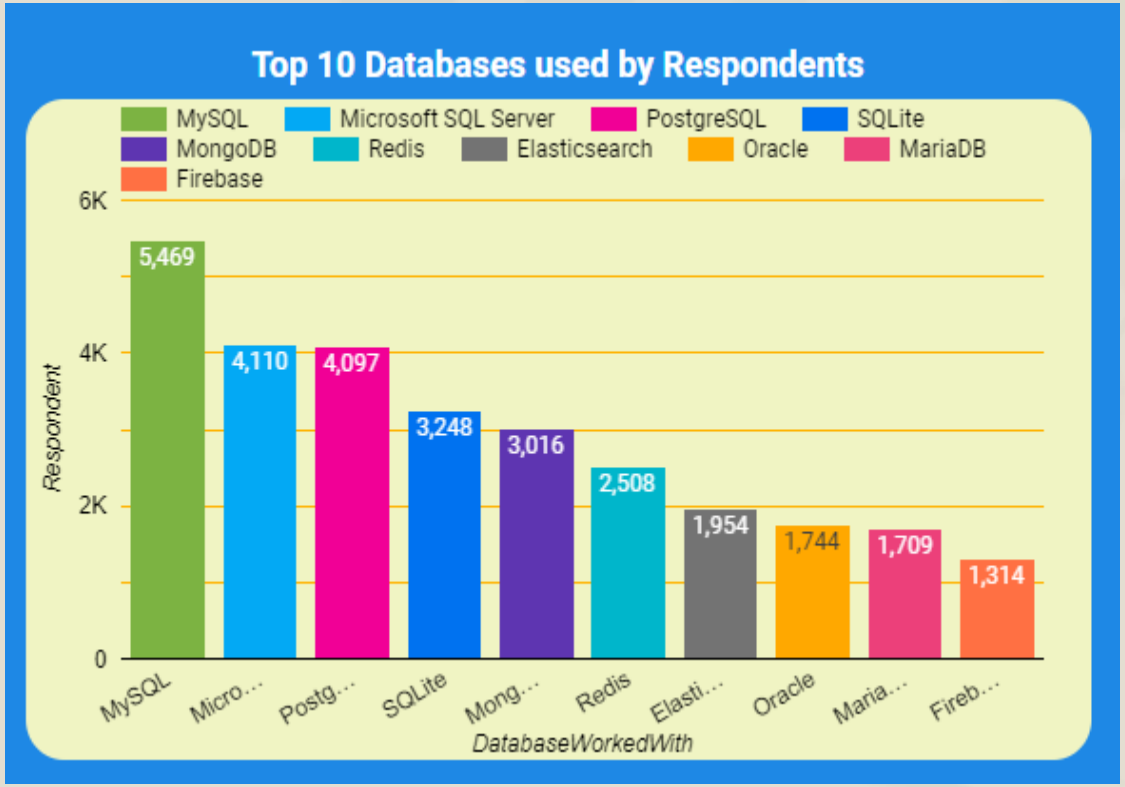
- Top 10 Languages used by respondents.
- Top 10 Languages Desired by respondents.

Implications

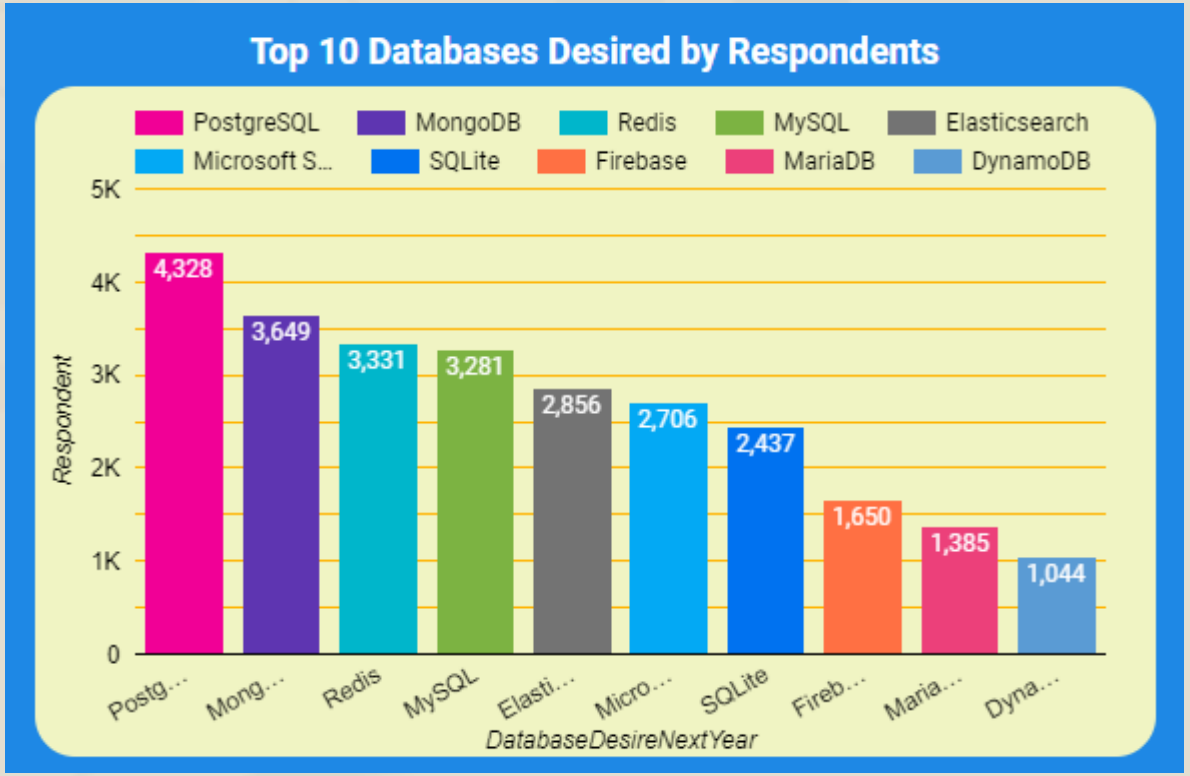
- JavaScript, HTML/CSS, SQL, Bash/Shell/PowerShell, Python, Java, C#, TypeScript, PHP, C++
- JavaScript, HTML/CSS, Python, SQL, TypeScript, C#, Bash/Shell/PowerShell, Java, Go, Kotlin

DATABASE TRENDS

Current Year



Next Year



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DATABASE TRENDS - FINDINGS & IMPLICATIONS

Findings

- Top 10 Databases Worked with.
- Top 10 Databases Desired by respondents

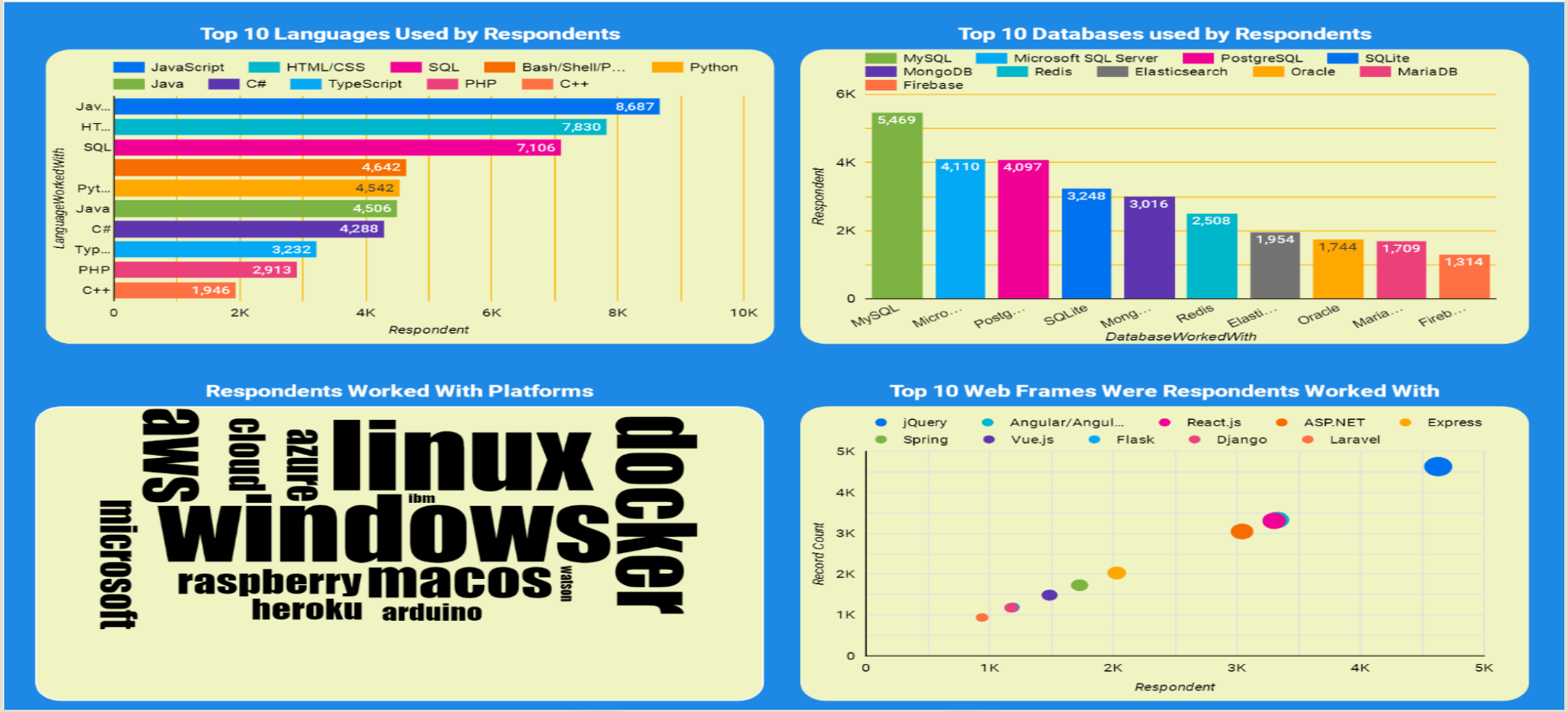
Implications

- MySQL, Microsoft SQL Server, PostgreSQL, SQLite, MongoDB, Redis, Elasticsearch, Oracle, MariaDB, Firebase.
- PostgreSQL, MongoDB, Redis, MySQL, Elasticsearch, Microsoft SQL Server, SQLite, Firebase, MariaDB, DynamoDB

DASHBOARD

https://github.com/Kambam-M-S/IBM-capstone-project/blob/main/Actual%20Submission.pdf

CURRENT TECHNOLOGY TRENDS



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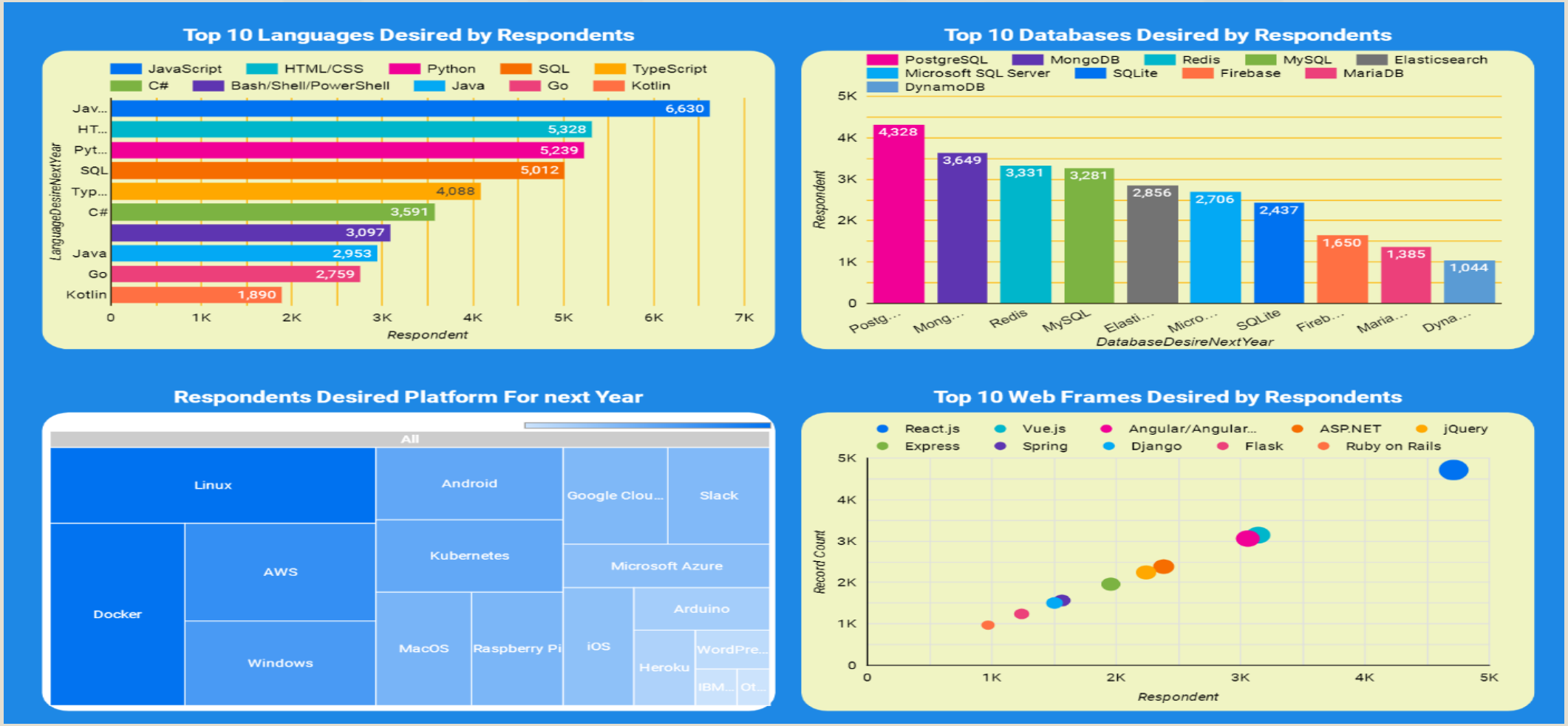
FUTURE TECHNOLOGY TRENDS



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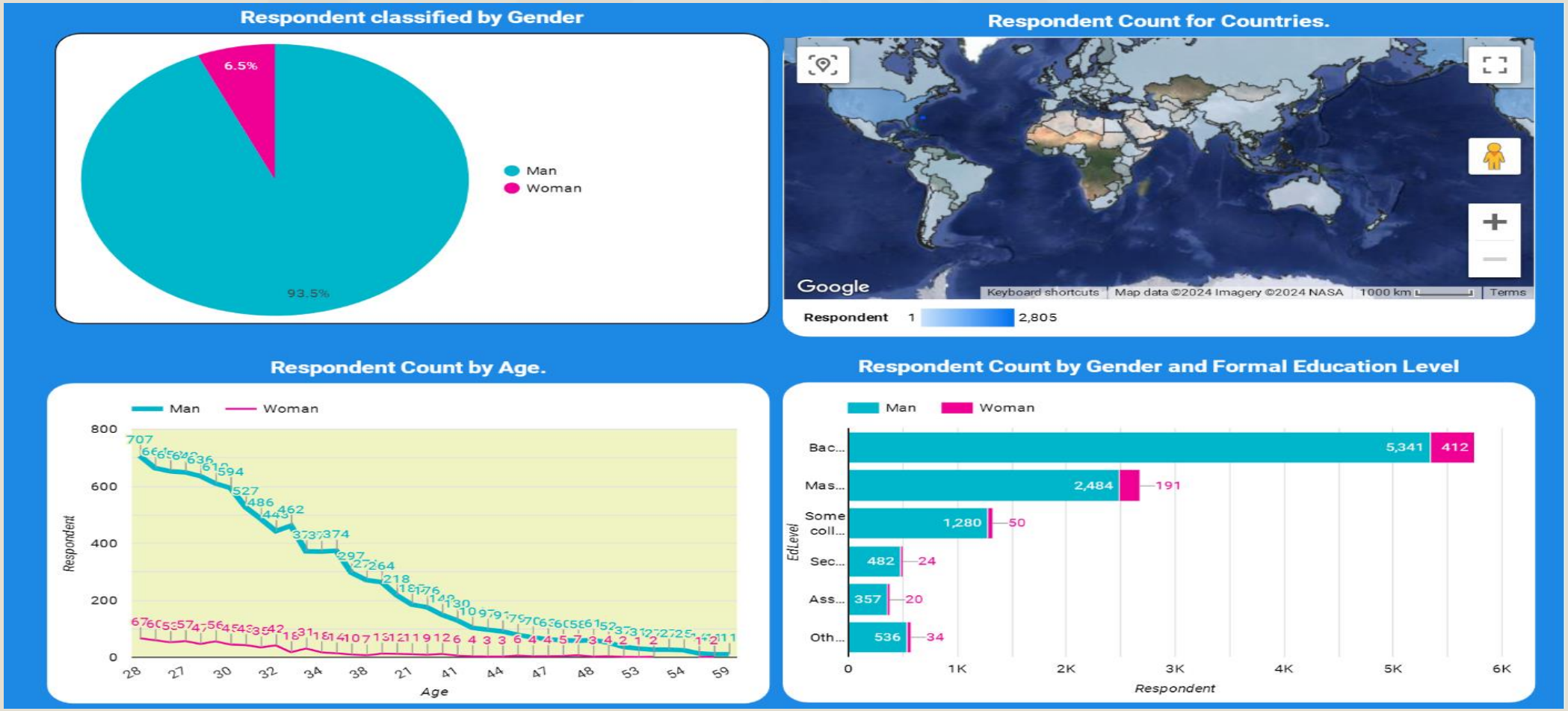
DEMOGRAPHIC DASHBOARD



DISCUSSION

- Most of the respondents are working with JavaScript, HTML/CSS and also desired to work with the same Languages in Future.
- Databases like MySQL, Microsoft SQL Server were used by the respondents
- Popular IDES are Linux Docker,
- In Future willing to work with Databases PostgreSQL, MongoDB more

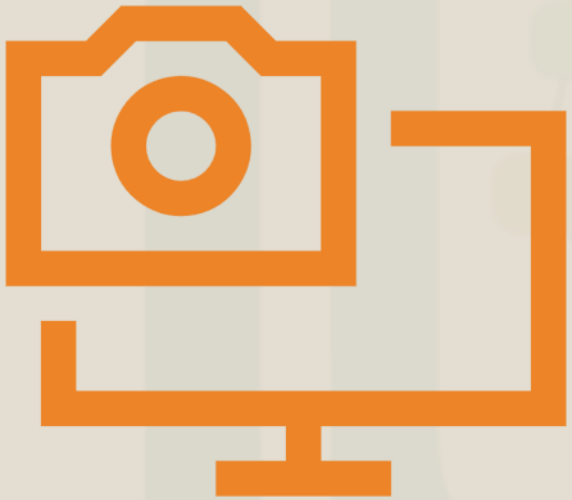
OVERALL FINDINGS & IMPLICATIONS

Findings	Implications
◦ Top Languages	◦ JavaScript, HTML/CSS, SQL, Python, TypeScript
◦ Top Databases	◦ MySQL, PostgreSQL, MS SQL Server, MongoDB, Redis, SQLite
◦ Respondents Gender	◦ From Demographic Dashboard we can find percentage of men is 93.5% were as woman percentage is 6.5 .
◦ Respondents Location	◦ Most of the respondents are from USA.
◦ Most Respondents Aged Between	◦ Most of the respondents are in the age limit of 24 to 29.
◦ Formal Education of Maximum Respondents	◦ Among all the respondents, both men and woman Formal Education level high for Bachelor Degree.

CONCLUSION

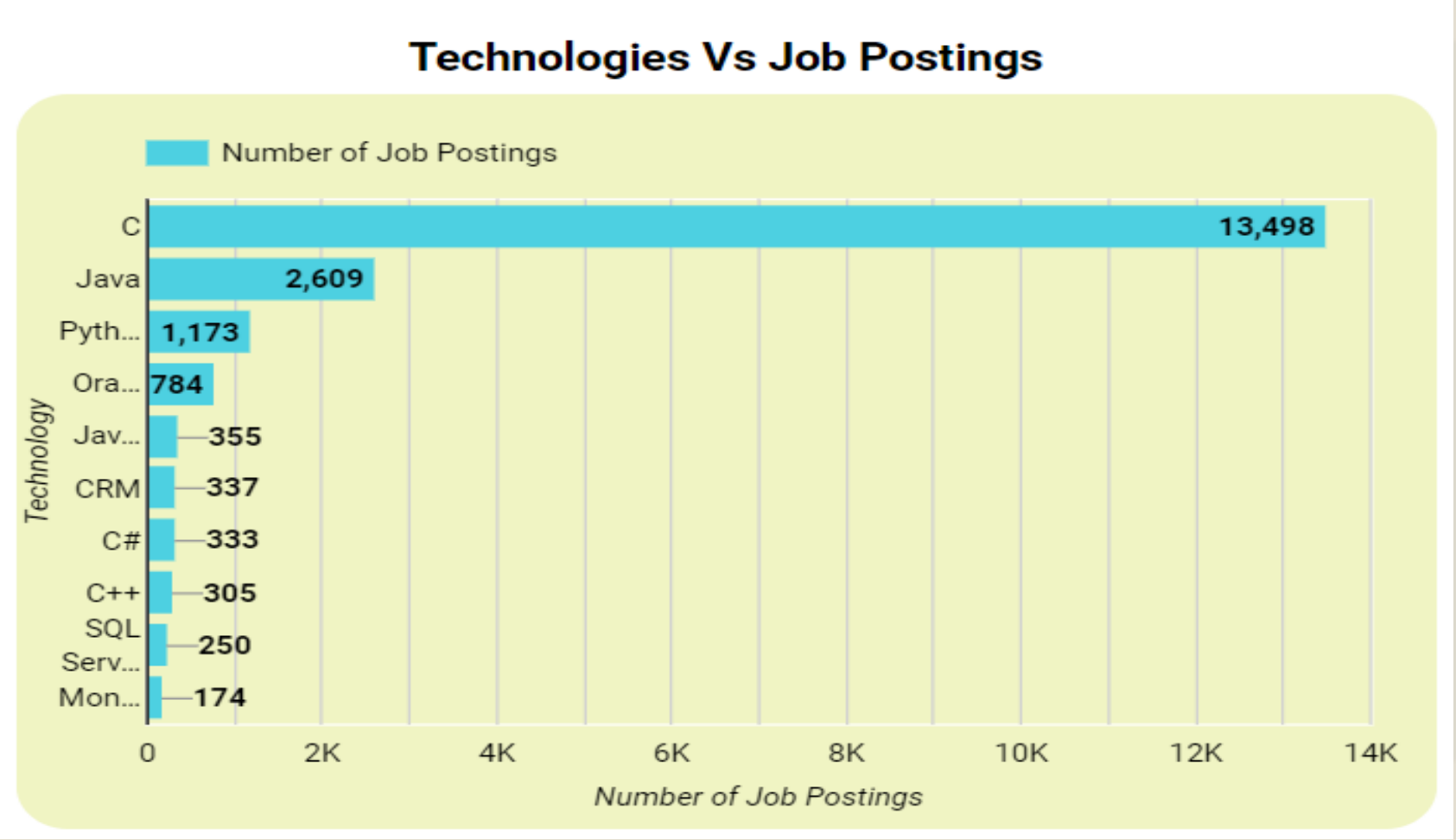
- **Current Trends**
  - **P/L's :**JavaScript, HTML/CSS, SQL, Bash/Shell/PowerShell, Python.
  - **DB's :** MySQL, MS SQL Server, PostgreSQL, SQLite, MongoDB, Redis
  - **IDE's :** Windows, Linux, Docker, AWS, macOS, Raspberry pi, Microsoft.
- **Future Trends**
  - **P/L's :** JavaScript, HTML/CSS, Python, SQL, TypeScript, C#
  - **DB's :** PostgreSQL, MongoDB, Redis, MySQL, Elasticsearch, Microsoft SQL Server
  - **IDE's :** Linux, Docker, Aws, Windows, Android, Kubernetes's, MacOS.
- **Demography**
  - Most of the respondents are from USA, Aged between 24 to 29 and most of them are Man(93.5%) and are Bachelors Degree holders.

APPENDIX

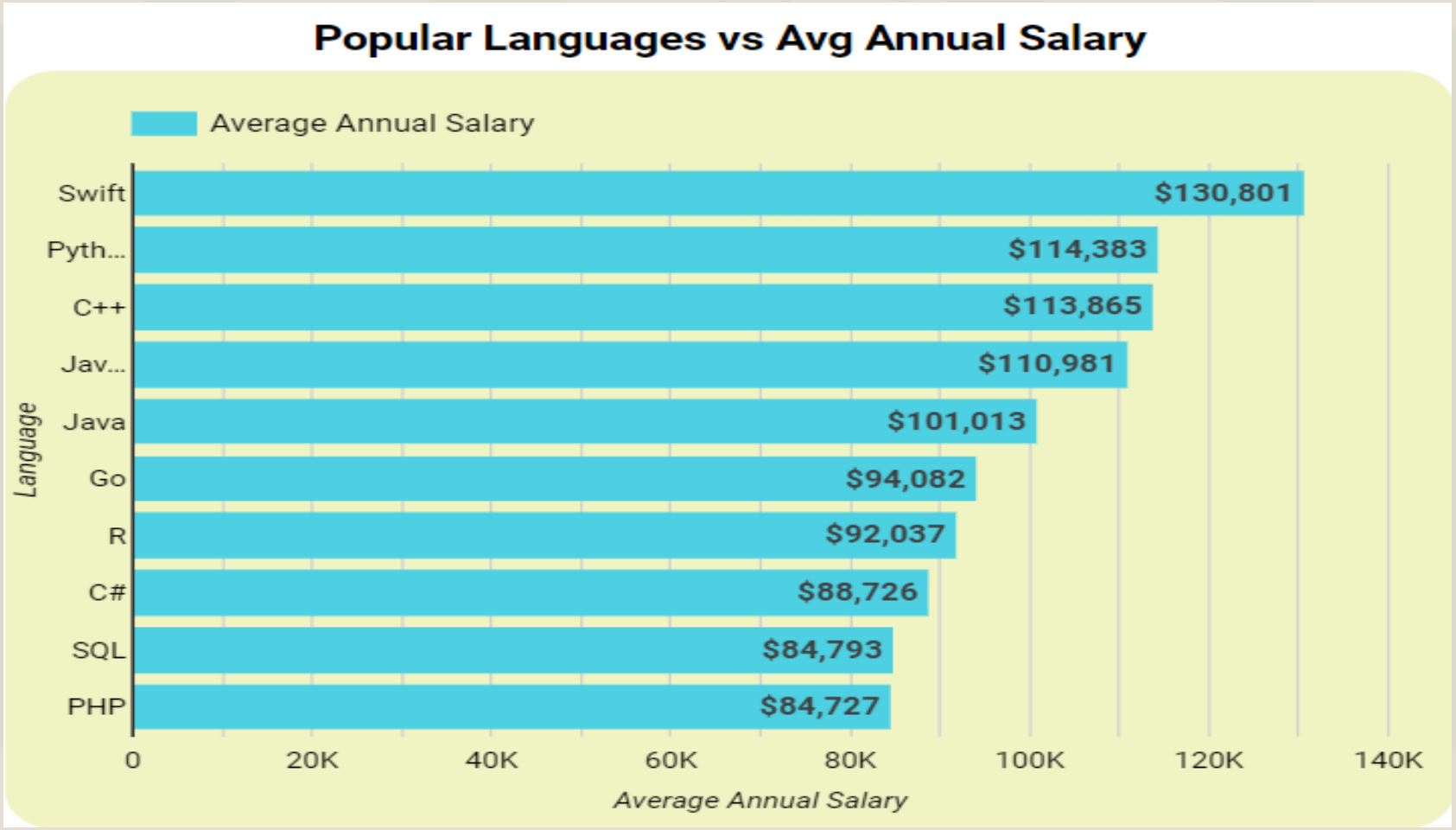


- Source of dataset for job postings : https://cf-courses-data.s3.us.cloud-object-storage.appdomain.cloud/IBM-DA0321EN-SkillsNetwork/labs/module%201/Accessing%20Data%20Using%20APIs/jobs.json
- Source of Popular languages dataset : https://cf-courses-data.s3.us.cloud-object-storage.appdomain.cloud/IBM-DA0321EN-SkillsNetwork/labs/datasets/Programming_Languages.html
- Source of Survey Dataset :https://cf-courses-data.s3.us.cloud-object-storage.appdomain.cloud/IBM-DA0321EN-SkillsNetwork/LargeData/m1_survey_data.csv

JOB POSTINGS



POPULAR LANGUAGES



IDEA： Aligning Job Postings with Respondent Preferences

- **Current Landscape**: Many job postings are for C, but most respondents work with and desire to work on popular languages such as Swift, Python, C++, JavaScript, Java, Go, HTML/CSS, SQL.
- **Proposal**: Organizations should align job postings with respondents' desired technologies.
- **Benefits**:
  1. **Cost-Effective Hiring**: Organizations can hire employees at standard packages, avoiding high salaries for scarce skills.
  2. **Increased Talent Pool**: Aligning with popular technologies such as Swift, Python, C++, JavaScript, Java, and Go broadens the pool of potential hires.
  3. **Employee Satisfaction**: Higher job satisfaction by matching employees with their preferred technologies.
  4. **Market Demand Alignment**: Focusing on widely used and popular languages ensures job postings meet market demand.
  5. **Future Trends**: Emphasizes the relevance of these languages not just now but in the future, helping organizations stay ahead of the curve.