Next Era Codecraft : Forecasting Future Programming Skill Trends

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OUTLINE

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- Introduction
- Methodology
- Results
  - Visualization – Charts
  - Dashboard
- Discussion
  - Findings & Implications
- Conclusion
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EXECUTIVE SUMMARY

- Data Collection using API and Web Scrapping
- Basic Data Exploration
- Data Wrangling
  - Dealing with Duplicate
  - Missing Values
  - Normalization
- Exploratory Data Analysis (EDA)
  - Distribution
  - Outliers
  - Correlation
- Data Visualization
- Dashboard

INTRODUCTION

- The purpose of this Project is to analyze Technology and programming data to help identify Future skills requirement for this field.
- Data must be collected from various sources then analyzed.
- Result will be useful for IT department and investors.
- The resulting insight should help responding to questions such as
  - Top programming Languages in Demand.
  - Top databases skills in Demand.
  - Top Platform-Popular IDE

METHODOLOGY

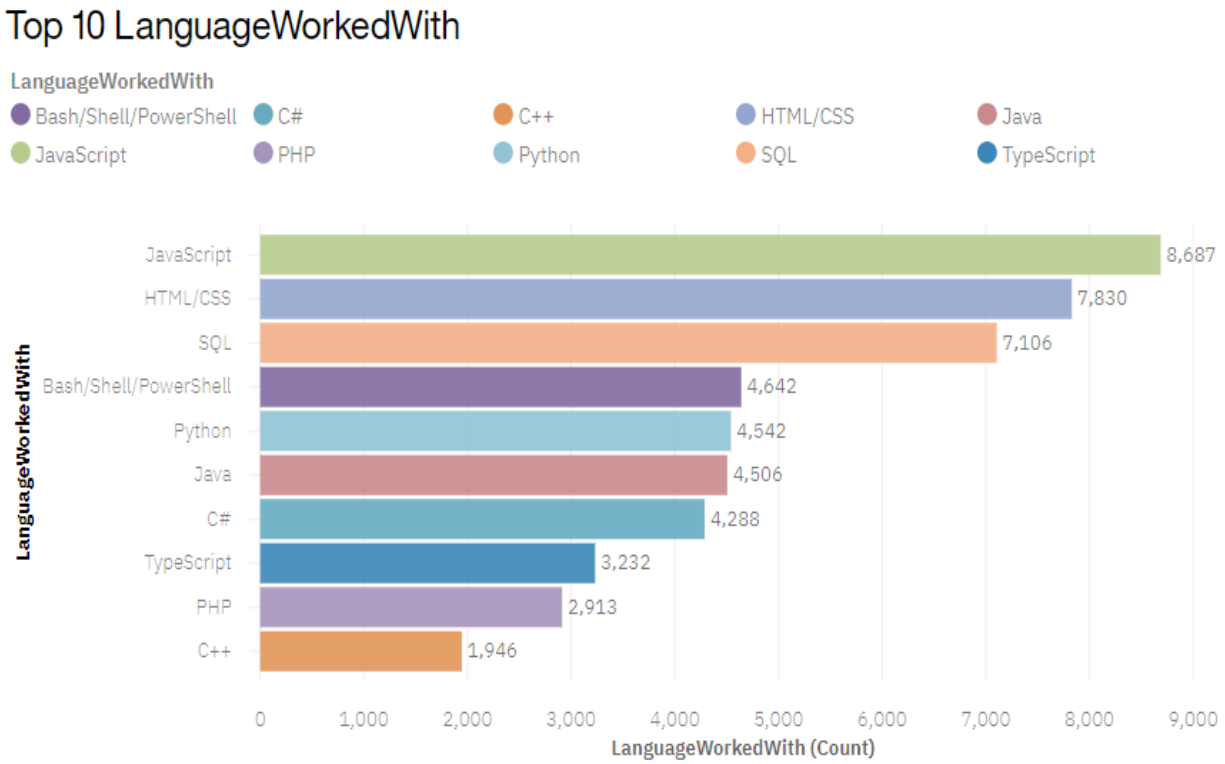
- Data Collection Sources (API , WEB SCRAPPING)
- Data Wrangling
- Data Exploration (EDA)
- Data Visualization
- Dashboard
- Presentation

RESULTS

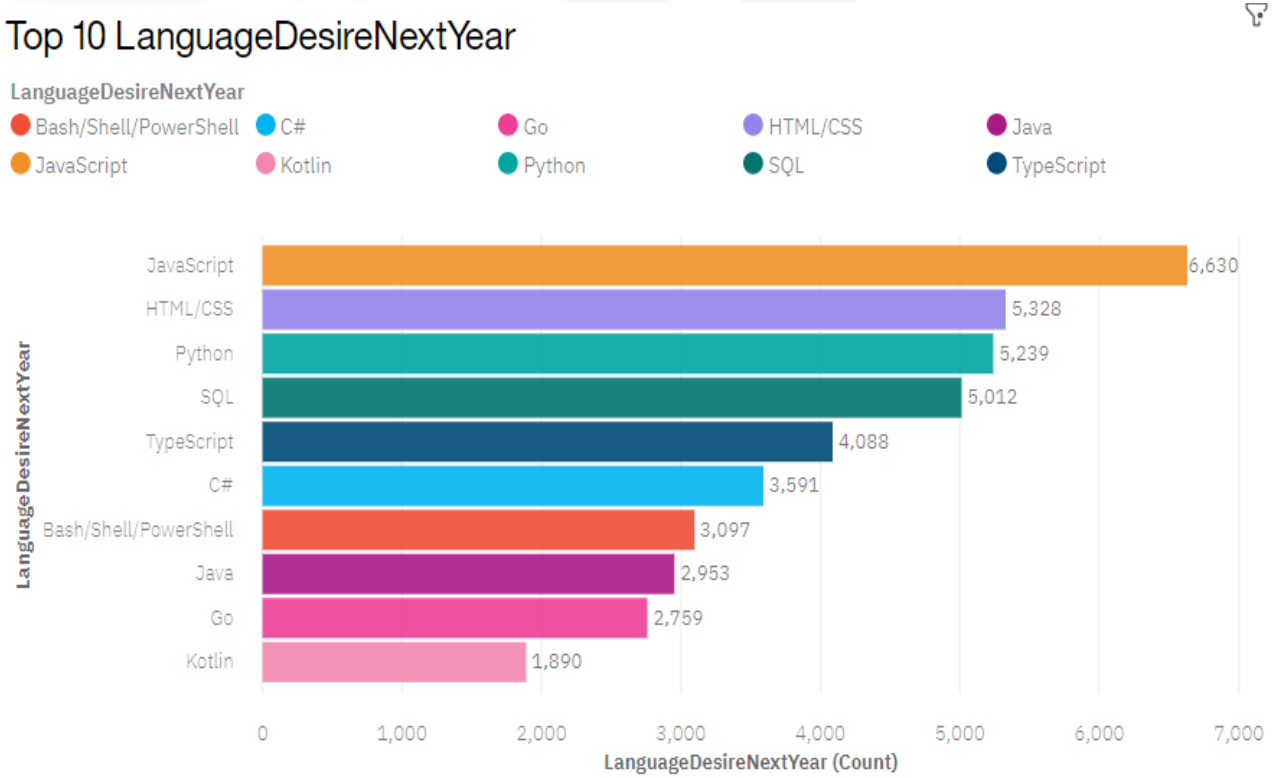
The Collected data is Transferred to cleaning data and then it is applied statistical techniques to analyze before concluded all information to make dashboards showing current and next year trends.

PROGRAMMING LANGUAGE TRENDS

Current Year



Next Year



PROGRAMMING LANGUAGE TRENDS - FINDINGS & IMPLICATIONS

Findings

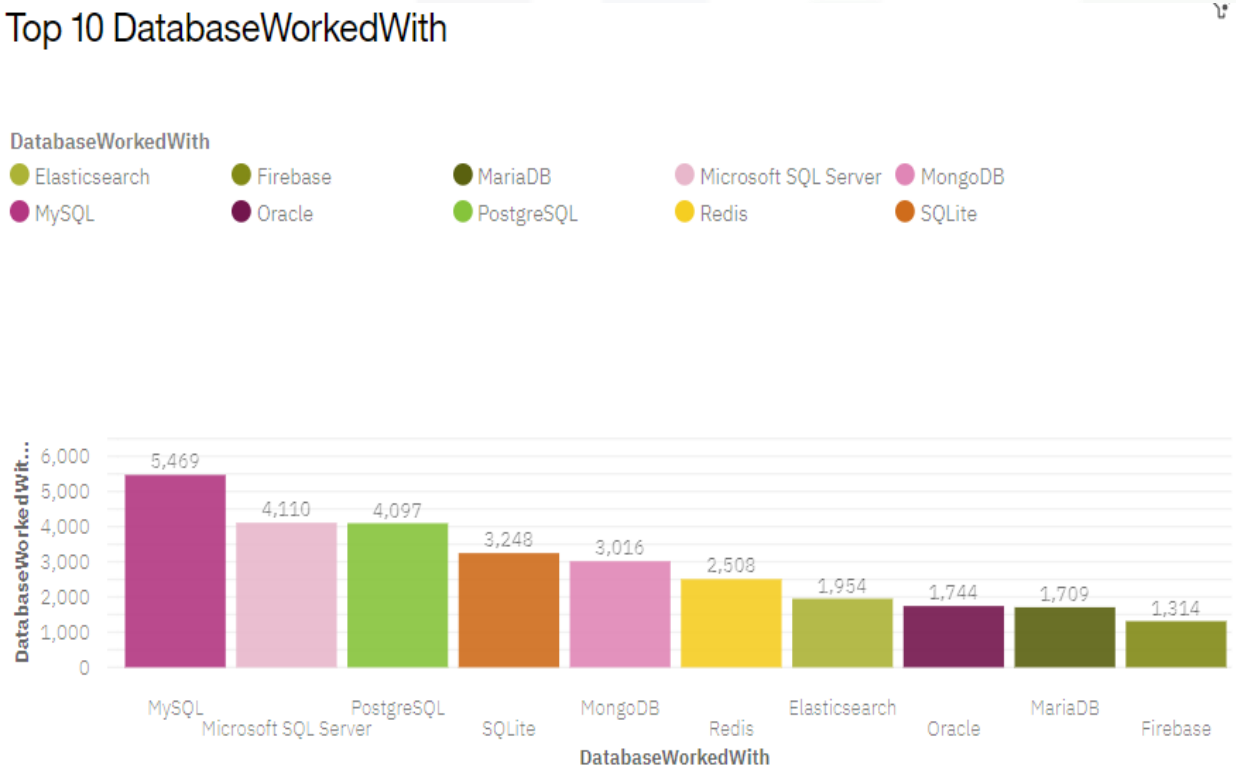
- Finding 1: JavaScript continues to dominate as the top choice for programming language, followed by Python, TypeScript, and other front-end related technologies.
- Finding 2: The growing popularity of Python and TypeScript suggests that these technologies may become even more dominant choices for large-scale JavaScript projects.
- Finding 3: While HTML/CSS and SQL are essential for web development, their demand remains steady.

Implications

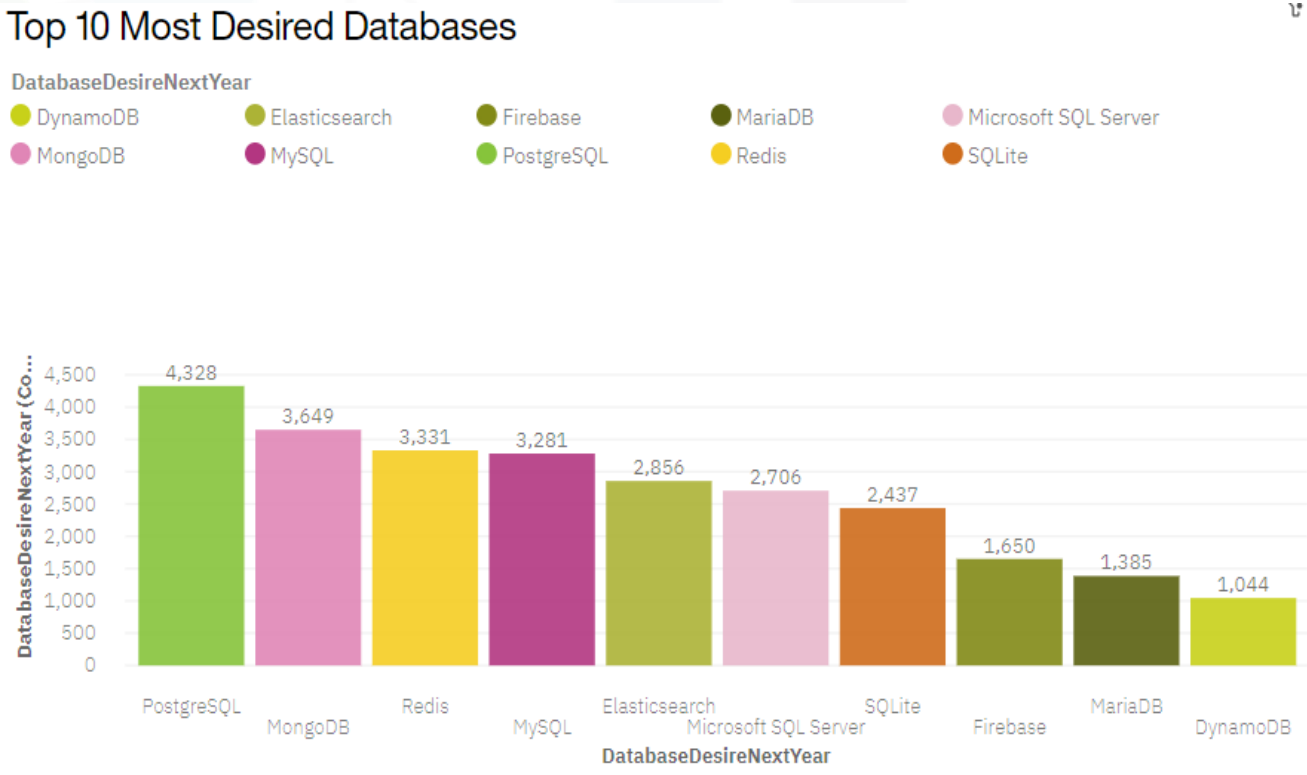
- Implication 1: Web developers should continue to invest in their skills in JavaScript, Python, TypeScript, and other front-end related technologies to stay relevant in the job market.
- Implication 2: As Python and TypeScript grow in popularity, web developers may want to consider upskilling in these technologies to improve their career prospects.
- Implication 3: Web developers should also maintain their proficiency in HTML/CSS and SQL to ensure a strong foundation in web development.

DATABASE TRENDS

Current Year



Next Year



IBM Developer

SKILLS NETWORK

DATABASE TRENDS - FINDINGS & IMPLICATIONS

Findings

- Finding 1
  - According to the study, MySQL has the highest market share in the top 10 most popular databases, with a share of 54.69%.
  - The study also highlights the increasing demand for Elasticsearch and DynamoDB in the future.
- Finding 2
  - Elasticsearch has experienced significant growth, with a market share increase of 4.50%.
  - MongoDB and Redis have also seen an increase in their market share, reflecting the ongoing trend of using NoSQL databases for specific use cases.
- Finding 3
  - While PostgreSQL's market share has declined slightly, it still ranks third among the top 10 databases.
  - Oracle, while still in the top 10, has experienced a decrease in its market share.

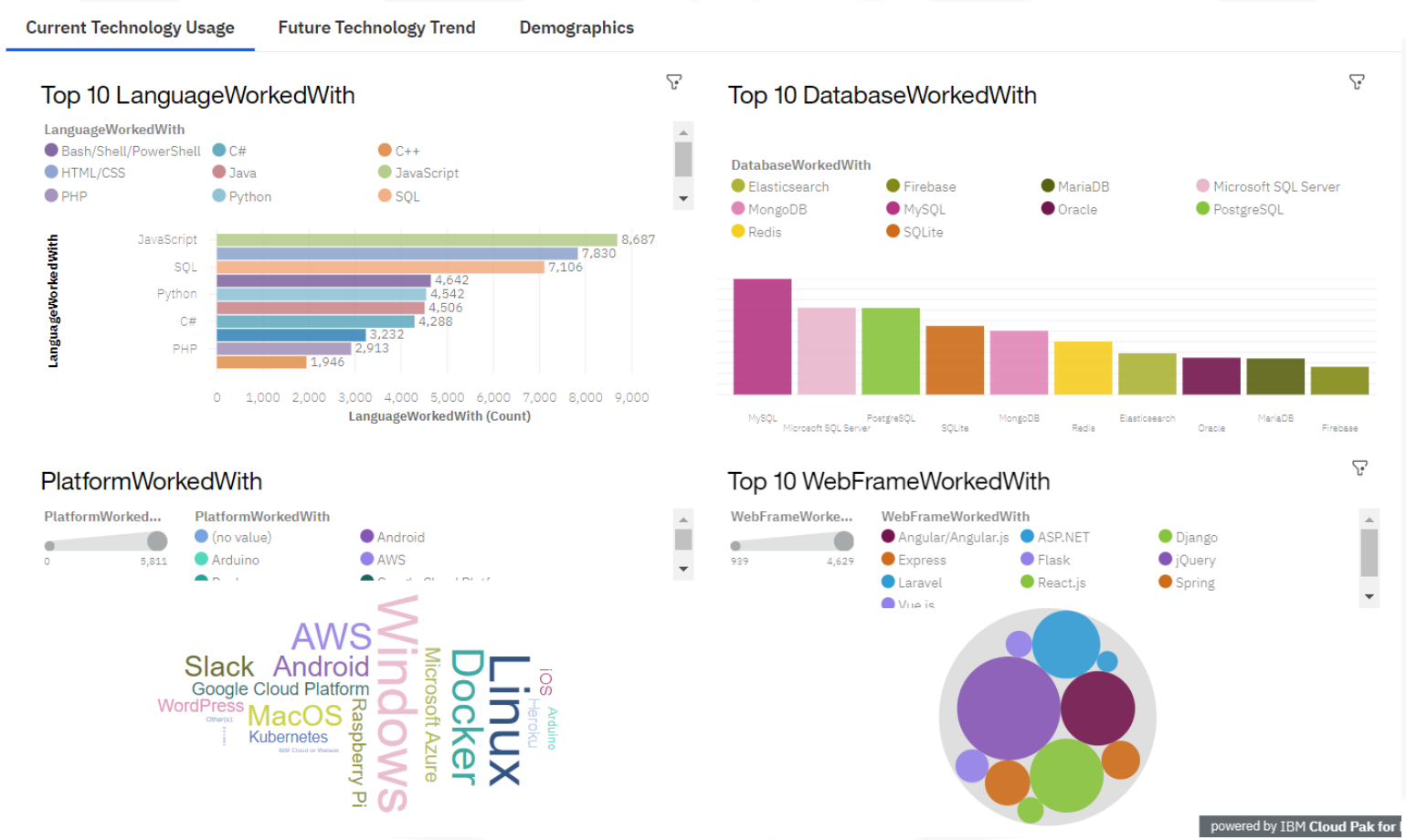
Implications

- Implication 1
  - Finding 1 highlights the need for developers to familiarize themselves with MySQL and other top databases.
- Implication 2
  - The increase in demand for Elasticsearch and DynamoDB suggests that businesses should consider incorporating these technologies into their database infrastructure.
- Implication 3
  - The decline in market share for Oracle and the relative stability of PostgreSQL may indicate a shift in preferences among developers.

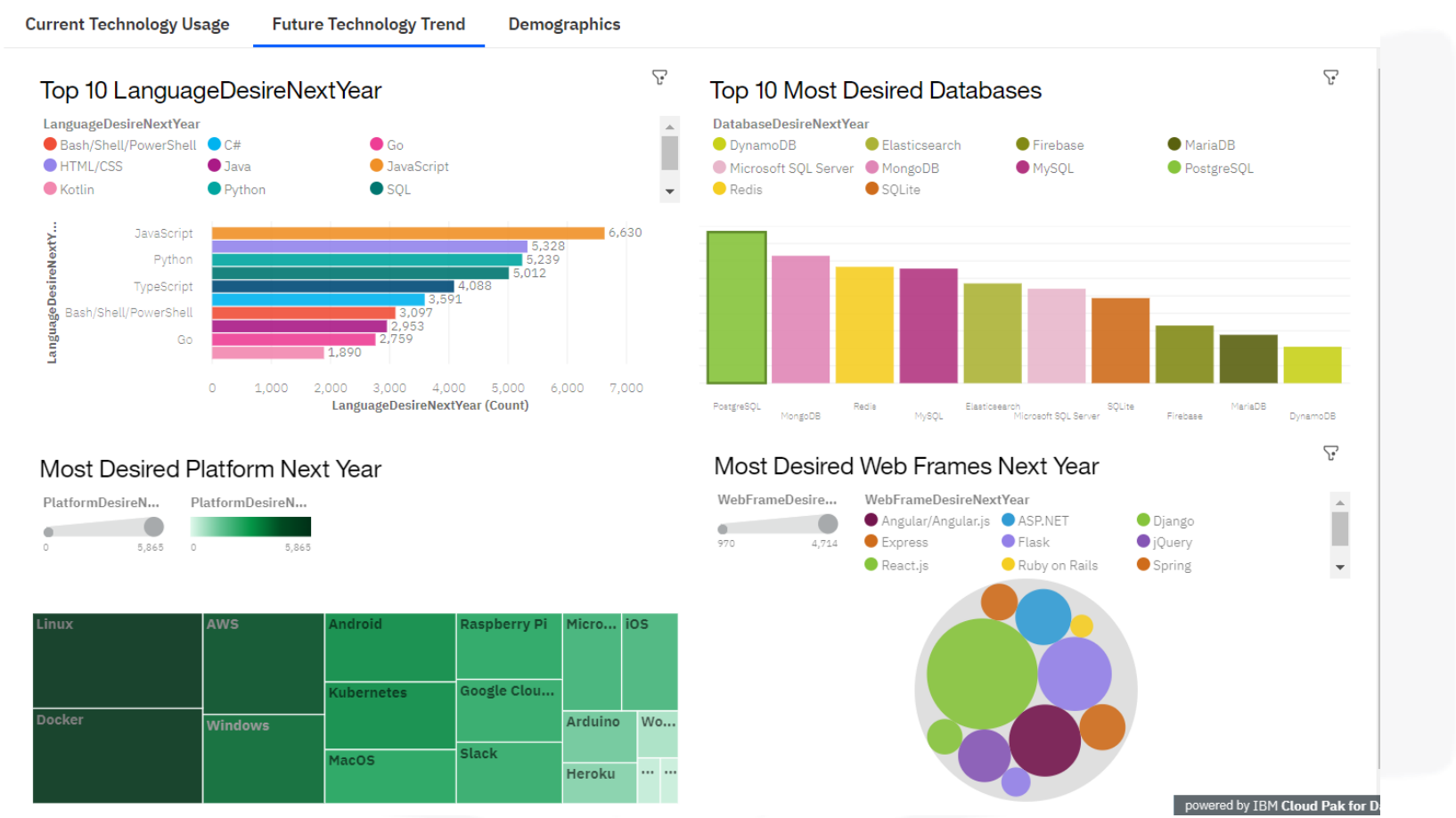
DASHBOARD

https://dataplatform.cloud.ibm.com/dashboards/9005fbcd-581e-4948-b91c-a1c08092ec2b/view/6f36de3c26e36d8976deeae4079025067836775cbabbd750d1d47b490d657597f06d4595c87a480b8b110260a2ee170f9b

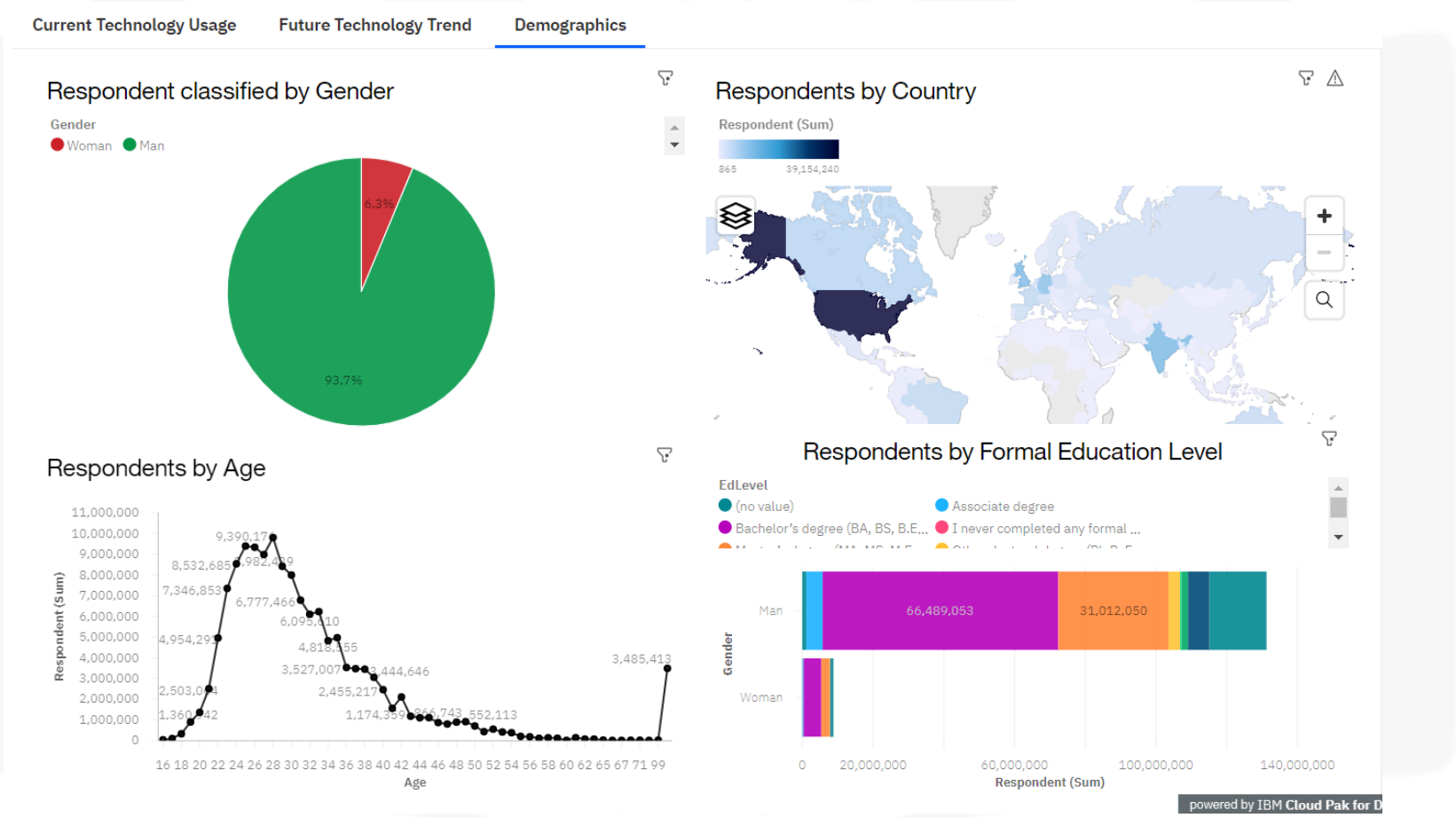
DASHBOARD TAB 1



DASHBOARD TAB 2



DASHBOARD TAB 3



DISCUSSION

- Technology Trends now and future
- Training and Reskilling workers
- Females participation in Technology field
- Bridge divide of technology gaps in developing countries
- Eliminate age and education discrimination in employment

OVERALL FINDINGS & IMPLICATIONS

Findings:

1. **Enduring Demand for Leading Technologies:**
   Highly utilized programming languages and databases are expected to maintain their high demand in the future.
2. **Consistency in Platform Usage:**
   Currently utilized platforms closely align with the predicted platforms for the future, indicating a stable tech landscape.
3. **jQuery's Future Dominance:**
   jQuery is poised to take the lead as the preferred web framework in the future.

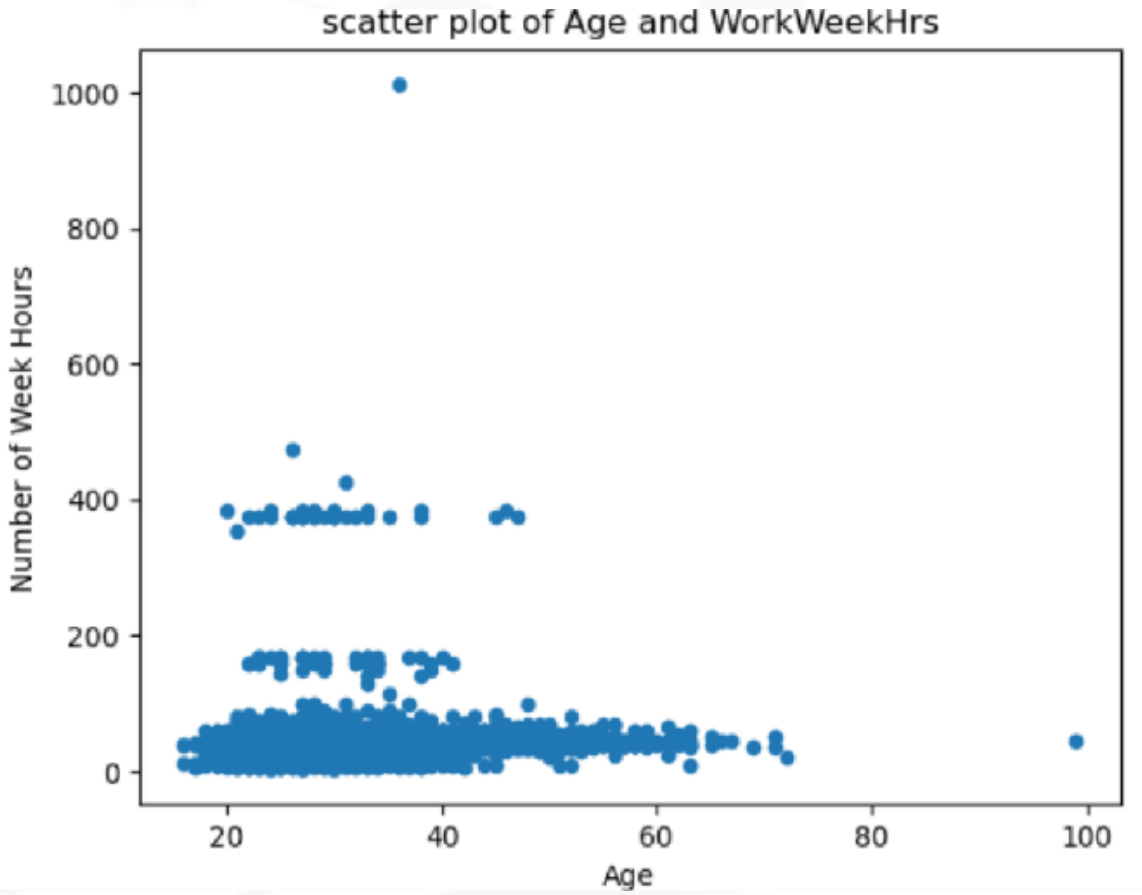
Implications:

1. **Gender Dynamics in Technology:**
   Men continue to dominate the gender landscape in the technology sector.
2. **Continental Disparities:**
   America and Europe lead in technology adoption, with other continents lagging behind.
3. **Prime Age Group in IT:**
   The age group of 24-34 emerges as the highest in demand for IT professionals.

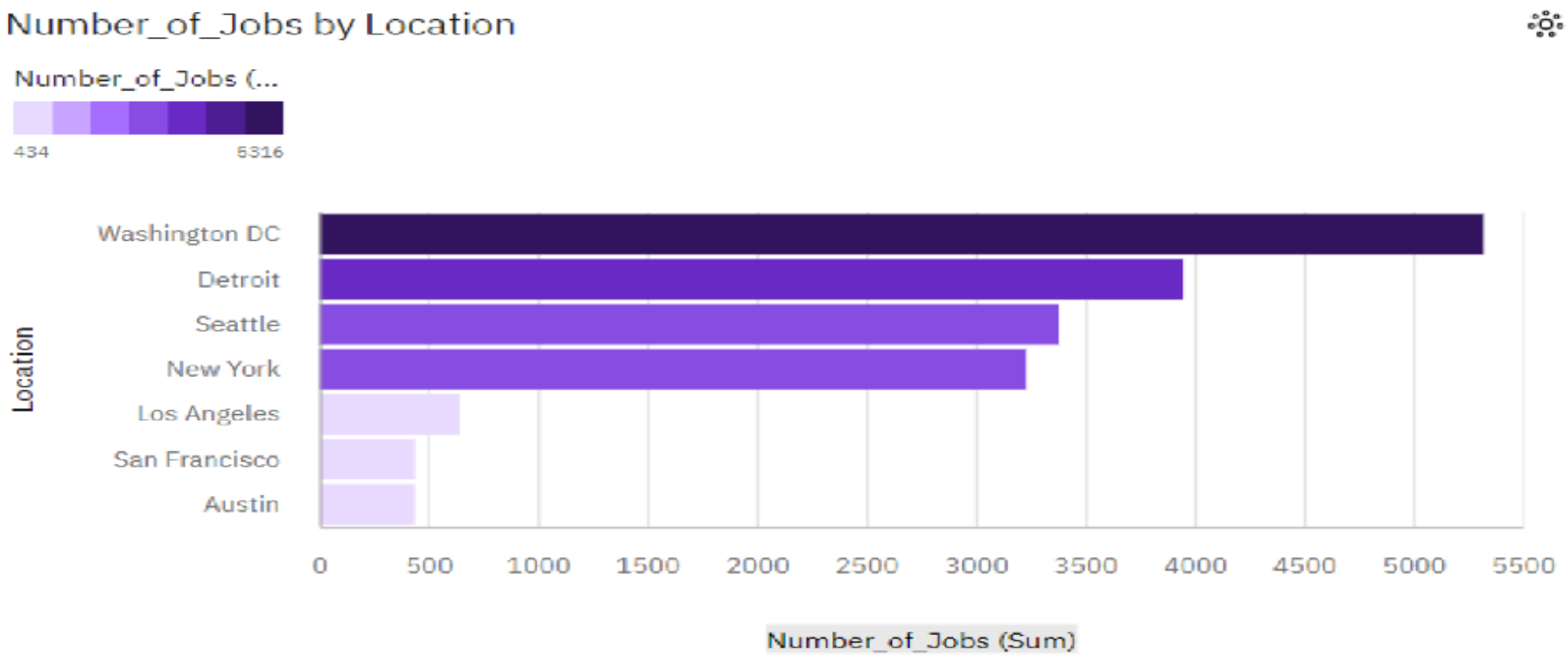
CONCLUSION

- Technology Trends for current and next year
- Programming Languages, Database and Platform overview
- Demographics overview
- Actions to be taken
- In future, incorporate Machine Learning to predict trends and salaries

APPENDIX


scatter plot of Age and WorkWeekHrs
Number of Week Hours
Age
0
200
400
600
800
1000
20
40
60
80
100

GitHub-JOB POSTINGS



POPULAR LANGUAGES