CURRENT TECHNOLOGY USAGE AND TRENDS

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IBM Developer

SKILLS NETWORK

OUTLINE

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

EXECUTIVE SUMMARY

- **Competitive Nature of IT Industry**: The IT industry is dynamic and competitive, necessitating continuous updates to programming skills and database knowledge.
- **Project Objective**: This project aims to analyze and identify key trends within the IT industry.
- **Key Areas of Analysis**:
  - Current Technology Usage: Assessing the current state of programming languages, databases, and platforms used.
  - Future Technology Trends: Predicting upcoming trends in programming languages, databases, and platforms.
  - Demographics in IT Industry: Understanding the distribution of gender, age, and education levels in IT.
- The goals of the this presentation is (1) Identifying top Programming Languages in the industry. (2) Top Database Skills in high demand. (3) Popular IDEs among professionals.

INTRODUCTION

Emerging Trends and Future Skills:

- Top Programming Languages in Demand
- Top Database Skills in Demand
- Popular IDEs

Data Collecting Sources:

- Job Postings
- Training Portals
- Surveys

Role of Data Analyst:

- Context: Working in a global IT and business consulting firm known for expertise in IT solutions.
- Objective: Regularly analyze data to identify future skill requirements and keep pace with changing technologies

METHODOLOGY

Data Sources:

- Stack Overflow
- Survey Data Technologies:
  - Current Trends: Based on Language, Database, Platform & Web Frame used or worked.
  - Future Trends: Interest in learning new Language, Database, Platform & Web Frame.
- **Demographics Data**:
  - Gender (Man and Woman), Age, Formal Education Level & Countries
- **Data Filtering**:
  - Cleaned empty or Null entries
  - Filtered to include only Man and Woman
- **Illustration and Analysis Tools**:
  - Python Libraries: Numpy, Matplotlib, Pandas & Seaborn
  - IBM Cognos Analytics Dashboard
  - Jupyter Notebook: Data Cleaning, Data Science Analysis

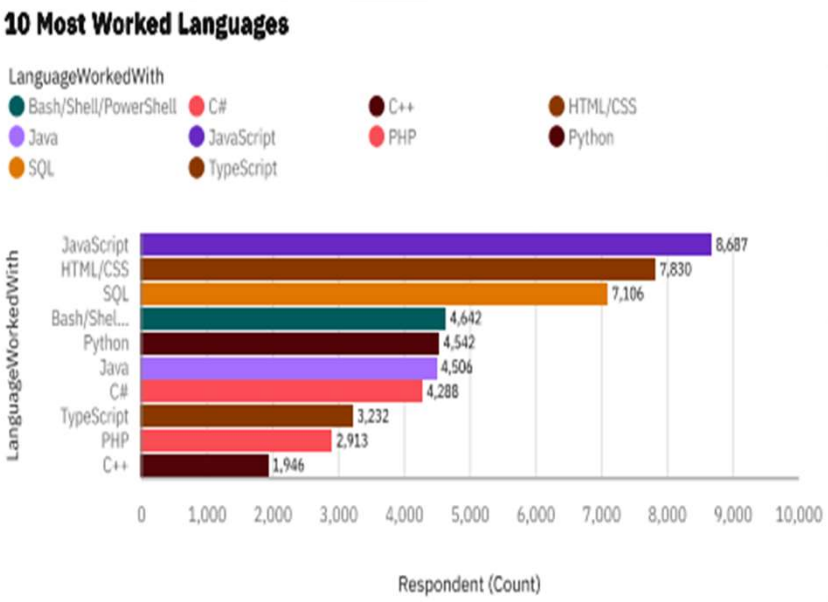
RESULTS

Comparison Results:

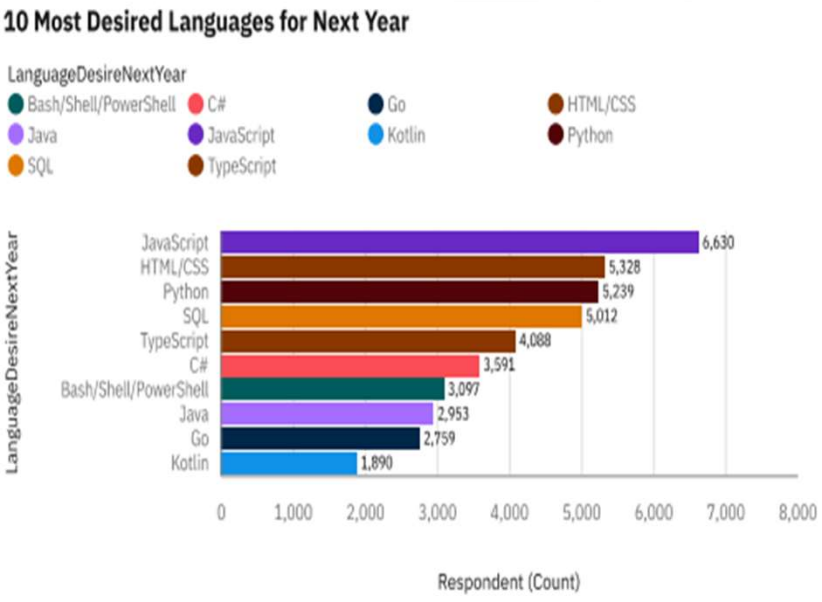
- Programming Language Trends
  - Compare current and future trends in programming languages.
- Database Trends
  - Analyze current versus future database usage trends.
- IDE Trends
  - Evaluate the changes in popularity of IDEs over

PROGRAMMING LANGUAGE TRENDS

Current Year



Next Year



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PROGRAMMING LANGUAGE TRENDS - FINDINGS & IMPLICATIONS

Findings

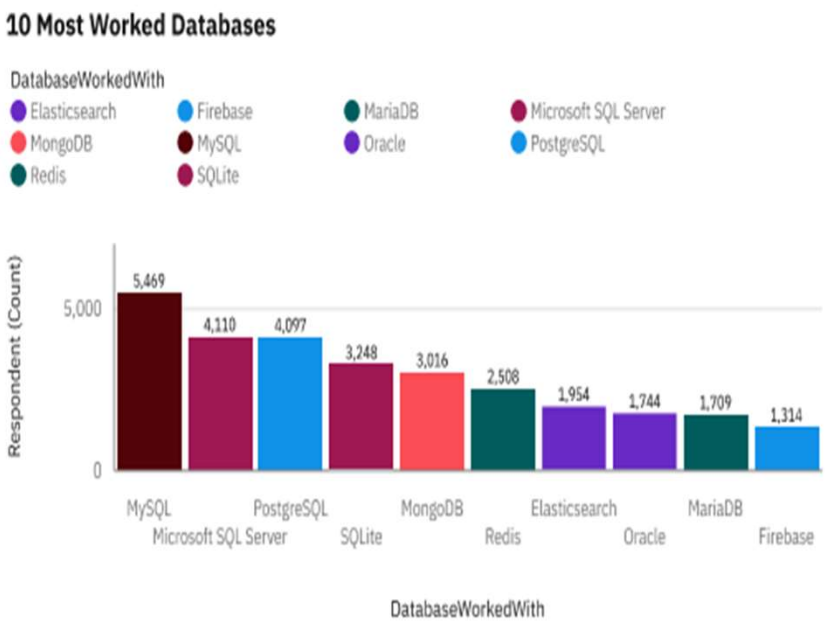
- JavaScript is the top most demanded for current and future programming language.
- Significantly Increasing desire for Python
- The trends of programming language has shifted
- Top 5 language:
  - JavaScript, Python, HTML, SQL, TypeScript

Implications

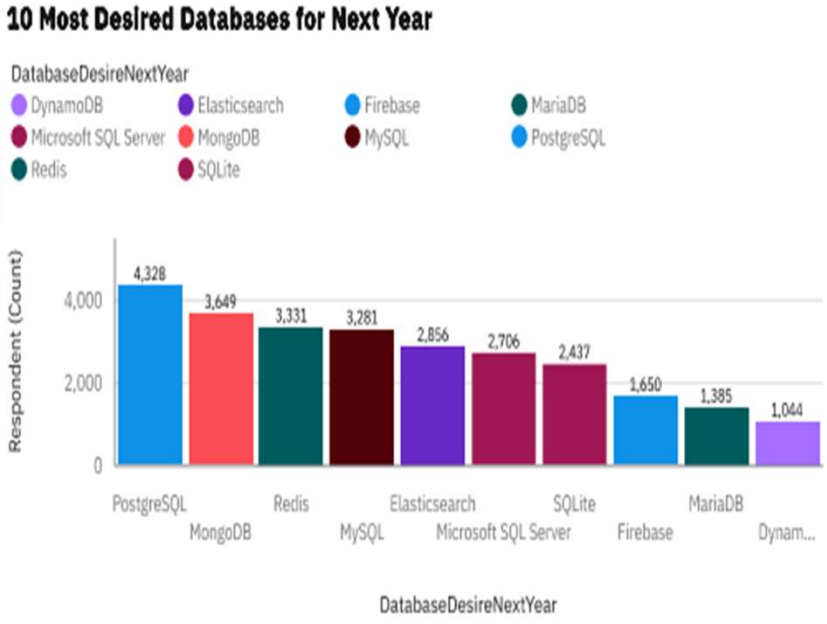
- JavaScript is still most popular and widely used in programming language in IT industry.
- The Desire Skill for programming language has certainly Shifted
- Python has become a new desired and required skills in IT industry.

DATABASE TRENDS

Current Year



Next Year



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DATABASE TRENDS - FINDINGS & IMPLICATIONS

Findings

- PostgreSQL, MongoDB, Redis have become the most desired Database.
- MongoDB, Redis, Elasticsearch are becoming increasingly popular for desired Database roughly 10,000 increased in respondents.
- Oracle Database has become less popular and less desired

Implications

- PostgreSQL, MongoDB, Redis, MySQL, Elasticsearch are the desired and most used Database.
- Mongo Db, Redis, Elasticsearch have new and better functionalities or services.
- Oracle Database is to avoid

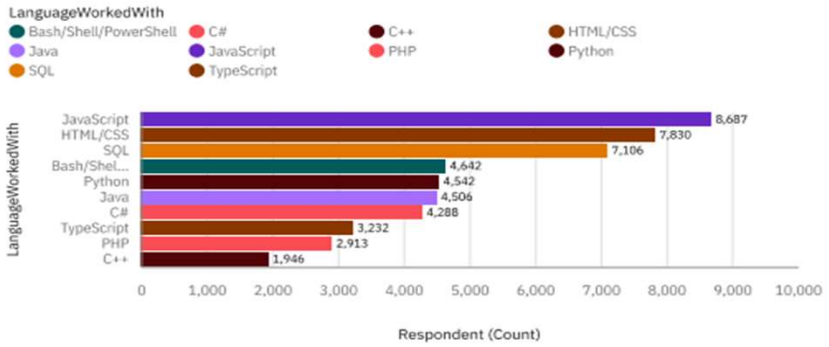
DASHBOARD

https://github.com/SR000777/Data-Analytics-and-Visualization-Capstone-Project-IBM.git

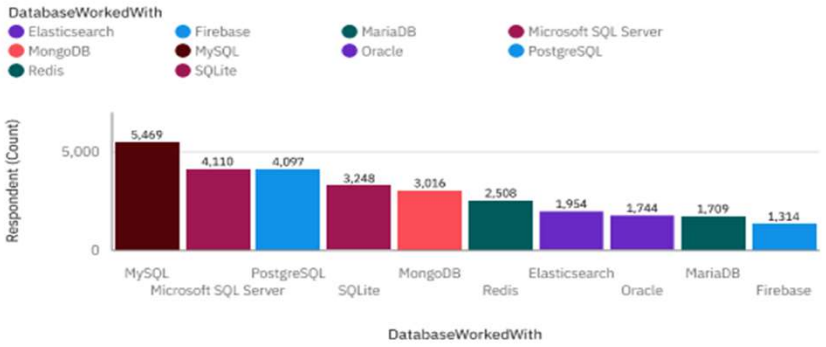
DASHBOARD TAB 1

Current Technology Usage

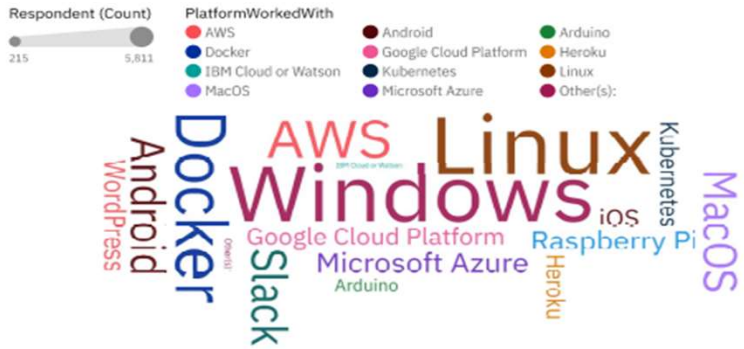
10 Most Worked Languages



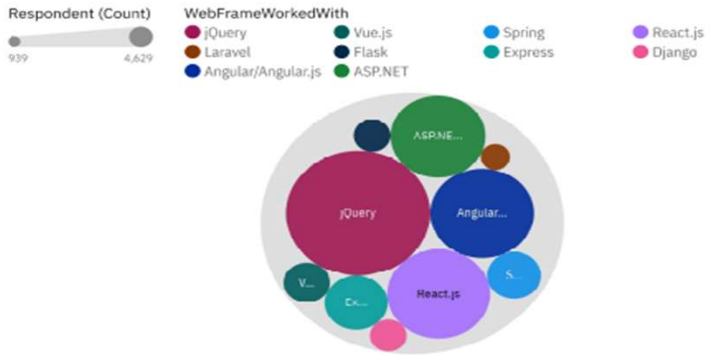
10 Most Worked Databases



Platforms Worked With



10 Most Worked WebFrames



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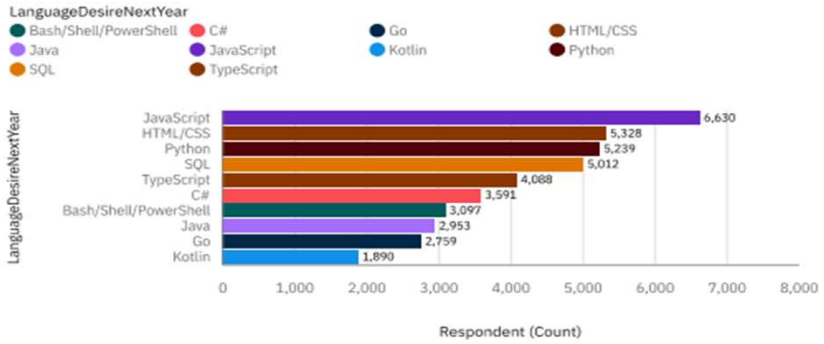
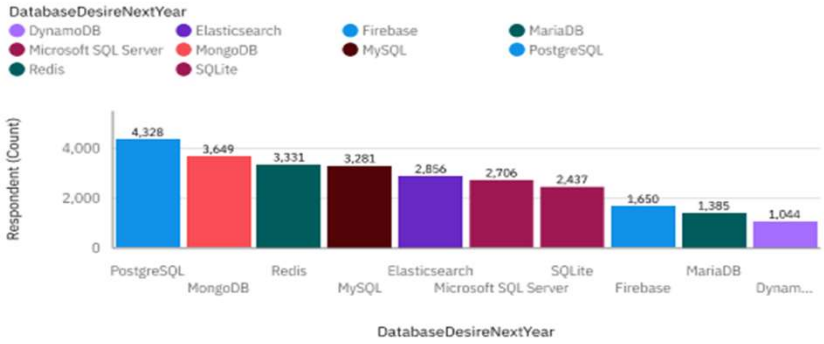
DASHBOARD TAB 2

Future Technology Trend

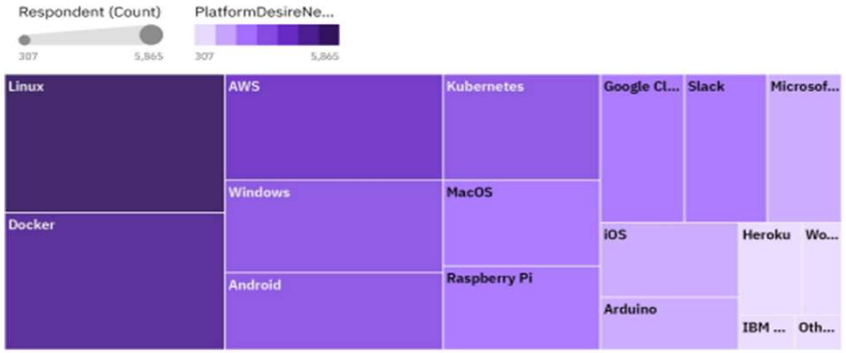
10 Most Desired Languages for Next Year



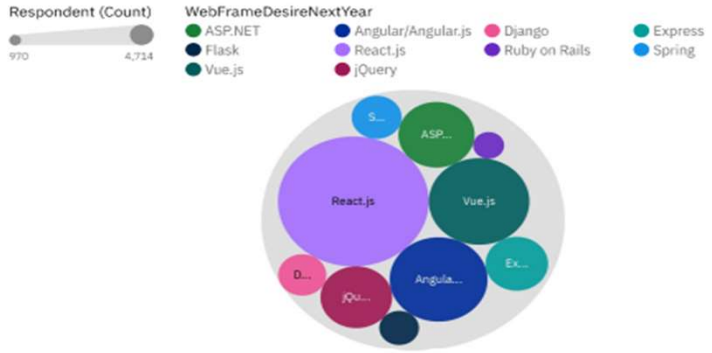
10 Most Desired Databases for Next Year



Desired Platform for Next Year



10 Most Desired WebFrames for Next Year



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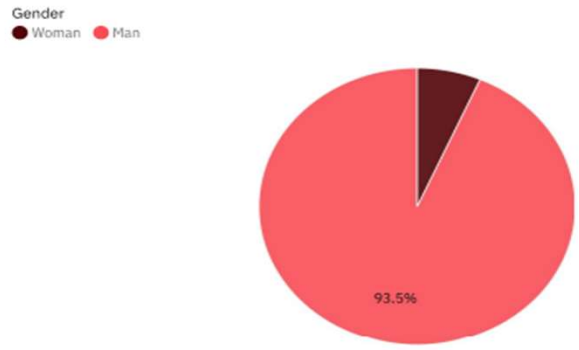
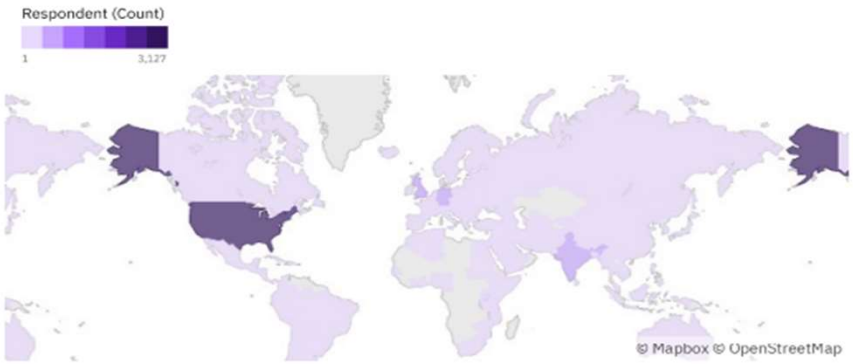
DASHBOARD TAB 3

Demographics

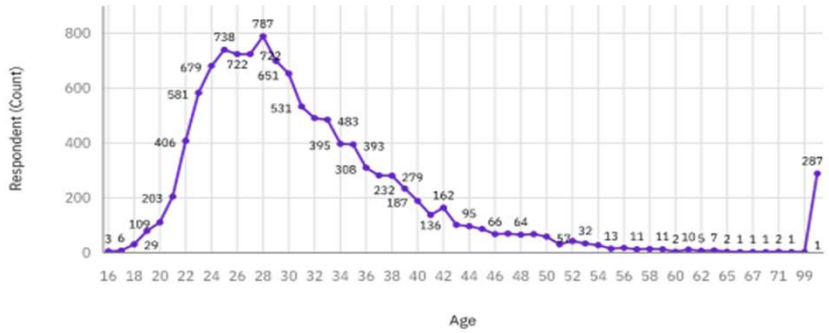
Respondents by Gender



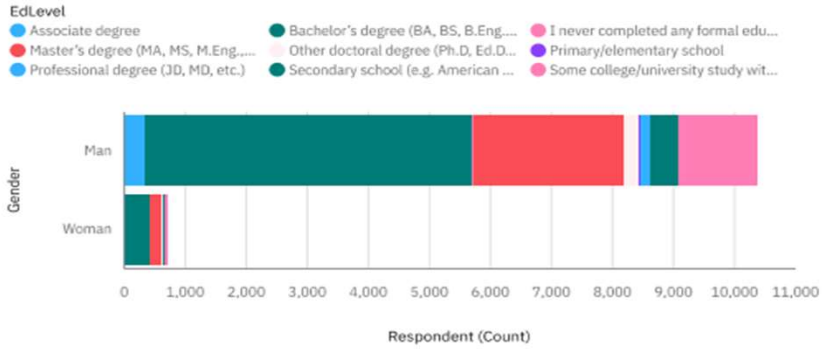
Respondents for Country



Respondents by Age



Respondent by Gender and Education



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DISCUSSION

MUST-HAVE SKILLS AND DESIRABLE FUTURE TRENDS:

1. Languages are gaining significant popularity

- JavaScript
- Python
- HTML/CSS
- SQL
- TypeScrip

2. Databases which are becoming more popular options

- PostgreSQL
- MongoDB
- Redis
- MySQL
- Elasticsearch

3. **Popular IDEs:**

- React.js
- Angular/Angular.js
- Vue.js
- jQuery
- ASP.NET

OVERALL FINDINGS & IMPLICATIONS

Findings

Top Desired Programming Languages:

• JavaScript, Python, HTML/CSS, SQL, TypeScript

Top Desired Databases:

• PostgreSQL, MongoDB, Redis, MySQL, Elasticsearch

Popular IDEs:

• React.js, Angular/Angular.js, Vue.js, jQuery, ASP.NET

• The trends shows a drastic changes in Desire for next year programming languages, Database and IDEs

Implications

Future Skills Requirements implements:

• Programming Language:

• JavaScripts, Python, HTML/CSS,SQL, TypeScript

Database:

• PostgreSQL, MongoDB,Redis, MySQL, Elasticsearch

IDEs:

• React.js, Angular/Angular.js,Vue.js , jquery & ASP.net

• There are a few Databases that are also increasingly desire such like DynamoBd

• The numbers of Skills requirements to be able to be competitive in the IT industry has been changing in the vast development and redefine of current technology

CONCLUSION

- Unbiased Data Analysis:
  - Open source data from Stack Overflow helps avoid data bias.
- Shift in Technology Trends:
  - Changes in current technology usage highlight the need for updated skills.
- Updated Skill Requirements:
  - Programming Languages:
    - JavaScript, Python, HTML/CSS, SQL, TypeScript
  - Databases:
    - PostgreSQL, MongoDB, Redis, MySQL, Elasticsearch
  - IDEs:
    - React.js, Angular/Angular.js, Vue.js, jQuery, ASP.NET
- Key Takeaway:
  - To remain competitive, IT professionals must adapt to evolving trends in programming languages, databases, and IDEs.