



# Emerging Trending Skills Required In IT industry In the future

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# OUTLINE

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

# EXECUTIVE SUMMARY

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- IT industry is a competitive and ever changing industry which require constant refine new programing skill and DataBases. This project is used to analyze the trends
- This project is used to analyze the trend:
  - Current Technology Usage
  - Future Technology Trend
  - Demographics in IT industry
- The project is to identify the top programming languages
- Identifying top database skills in demand
- Popular IDEs

# INTRODUCTION

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- **What is the emerging trend and future skill requirements in the Industry?**
  - What are the top programming language in demand?
  - What are the top database skills in demand?
  - What are the popular IDEs?
- collecting data from various sources and identifying trends for this year's report on emerging skills:
  - Job Postings
  - Training Portals
  - Surveys
- A Data Analyst in a global IT and business consulting services firm that is known for their expertise in IT solutions and their team of highly experienced IT consultants. In order to keep pace with changing technologies and remain competitive, your organization regularly analyzes data to help identify future skill requirements.

# METHODOLOGY



1. **Data Source:** [Stack Overflow](#), Two data is used [Demographics](#) and [Survey data technologies](#)
2. Survey Data technologies was used to analyze the current technology trend and future technology trend:
  - Respondents
  - LanguageWorked With, DataBaseWorked With, PlatfarmWorked With, WebframeWorked With
  - LanguageDesireNextYear, DataBaseDesireNextYear, PlatformDesireNextYear, WebframeDesireNextYear,
3. Demographic data was used for demographic data:
  - Man and woman
  - Age
  - Formal education level and Countries
4. Data is **filtered** with:
  - NoValue or null is cleaned
  - Demographic: man and woman only
5. Illustration of the data is used as follows:
  - Python libraries: Numpy, Matplotlib, Pandas,Seaborn
  - IBM Cognos Analytics Dashboard
  - Jupyternotebook for Data Cleaning and Data Science Analysis

# RESULTS

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The Results shown as follows are the analysis comparing the graphs between the current technology usage and Future technology usage.

Results as follows:

## **1.Programming Language trends**

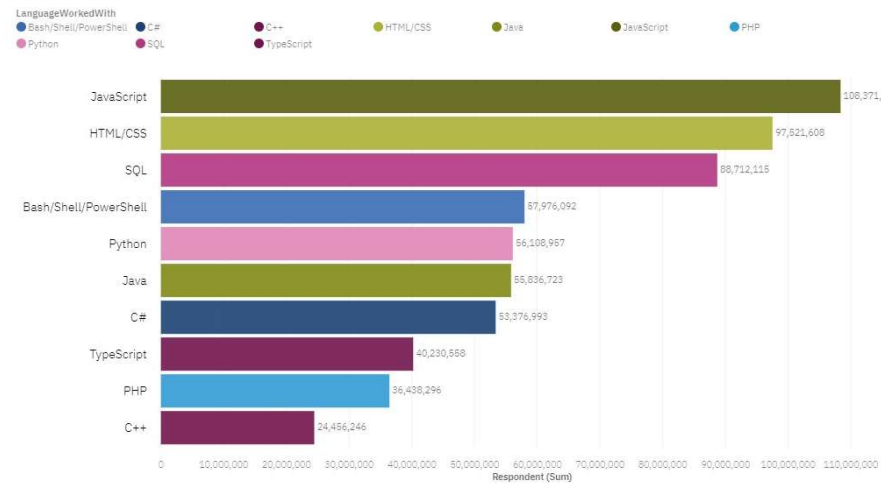
## **2.DataBase trends**

## **3.IDEs trends**

# PROGRAMMING LANGUAGE TRENDS

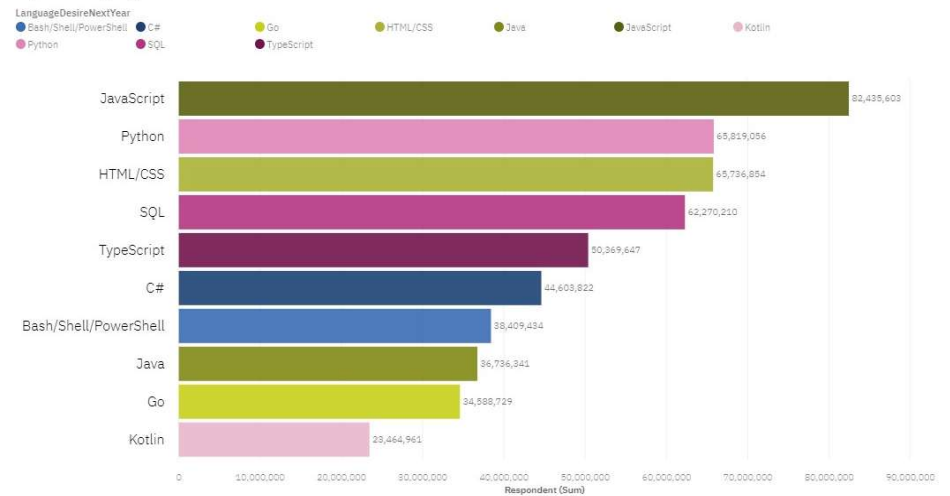
Current Year

Top 10 LanguageWorkedWith



Next Year

Top 10 LanguageDesireNextYear



# PROGRAMMING LANGUAGE TRENDS - FINDINGS & IMPLICATIONS

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## 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 are:
  - JavaScript, Python, HTML, SQL, TypeScript

## Implications:

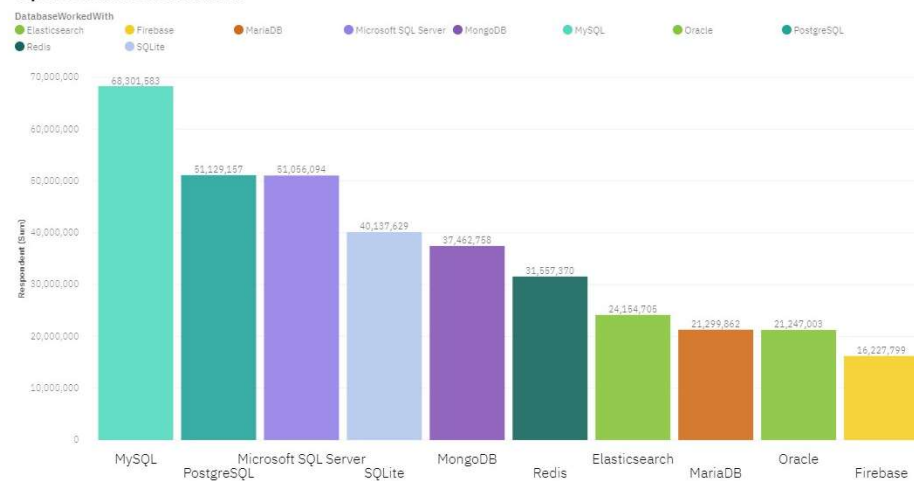
- JavaScript is still most popular and widely used in programming language in IT industry.
- Python has become a new desired and required skills in IT industry.
- JavaScript, Python, HTML/CSS, SQL, TypeScript are the top 5 most desired skills.
- The Desire Skill for programming language has certainly Shifted.



# DATABASE TRENDS

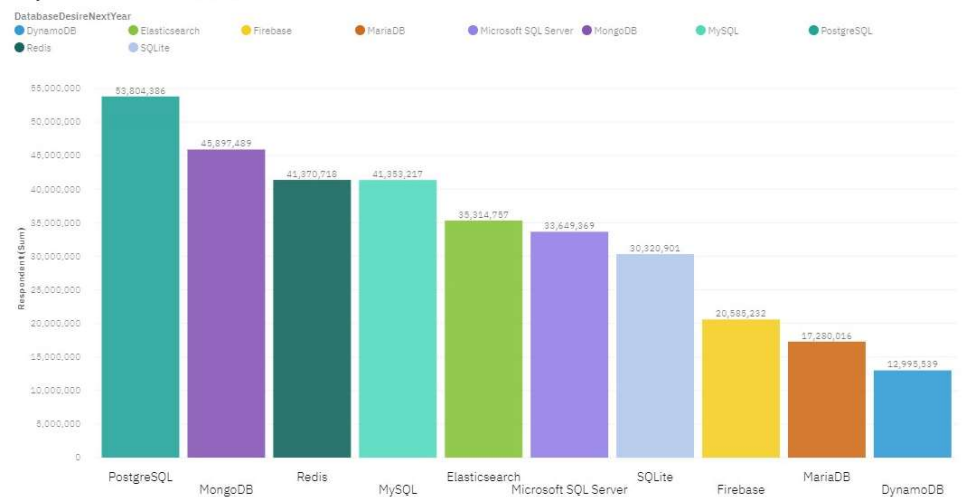
## Current Year

Top 10 DatabaseWorkedWith



## Next Year

Top 10 DatabaseDesireNextYear



# DATABASE TRENDS - FINDINGS & IMPLICATIONS

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## 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
- Drastic increase in the desire database skills especially for MongoDB and DynamoDB

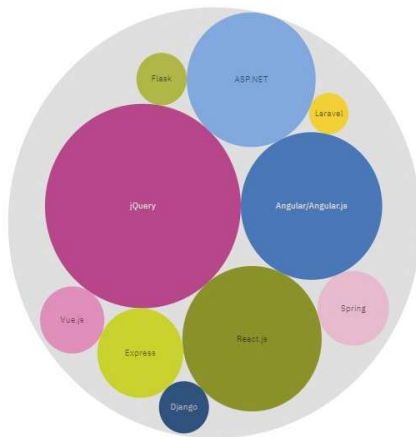
## Implications:

- PostgreSQL, MongoDB, Redis, MySQL, Elasticsearch are the desired and most used Database.
- MongoDB, Redis, Elasticsearch have new and better functionalities or services.
- Oracle Database is to avoid
- Usage of DynamoDB more research may needed.

# IDE TRENDS

## Current Year

Top 10 WebFrameWorkedWith



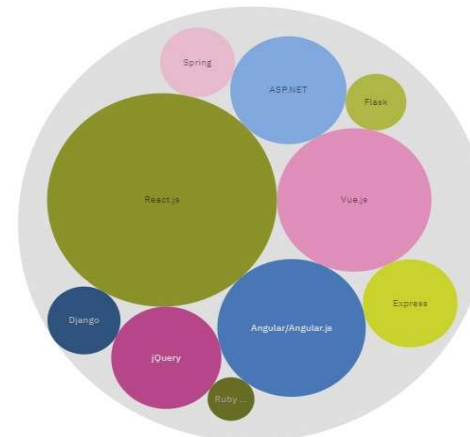
Respondent (Sum) 11,323,716 57,321,848

WebFrameWorkedWith

- ASP.NET
- Angular/Angular.js
- Django
- Express
- Flask
- Laravel
- React.js
- Vue.js
- jQuery
- Spring

## Next Year

Top 10 WebFrameDesireNextYear



Respondent (Sum) 11,006,401 58,321,909

WebFrameDesireNextYear

- ASP.NET
- Angular/Angular.js
- Django
- Express
- Flask
- React.js
- Ruby on Rails
- Spring
- Vue.js
- jQuery

# IDE TRENDS - FINDINGS & IMPLICATIONS

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## Findings:

- There shows a trend in IDEs:
- The user for **jQuery** has drastically decreased.
- **React.js** and **Vue.js** have dramatically increase for the desire IDE as compared to current WebFrame worked with as illustrated in the hierarchy bubble.

## Implications:

- People are shifting to use a better webframe such as React.js or Vue.js
- **jQuery** might be lacking of some functionality as compare to webframe competitors
- **jQuery** can be omitted from the new requirements of new technological skills

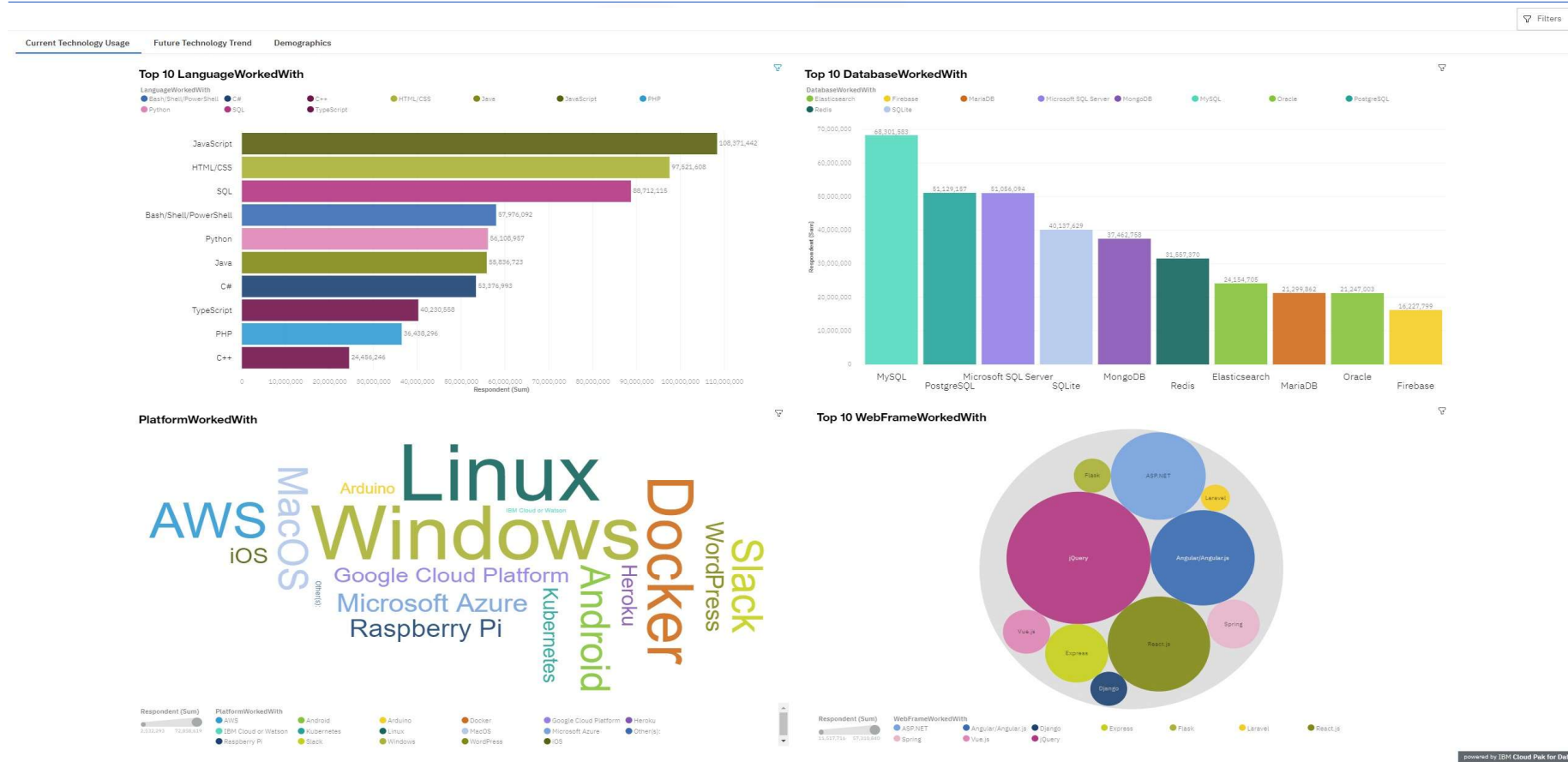
# DASHBOARD

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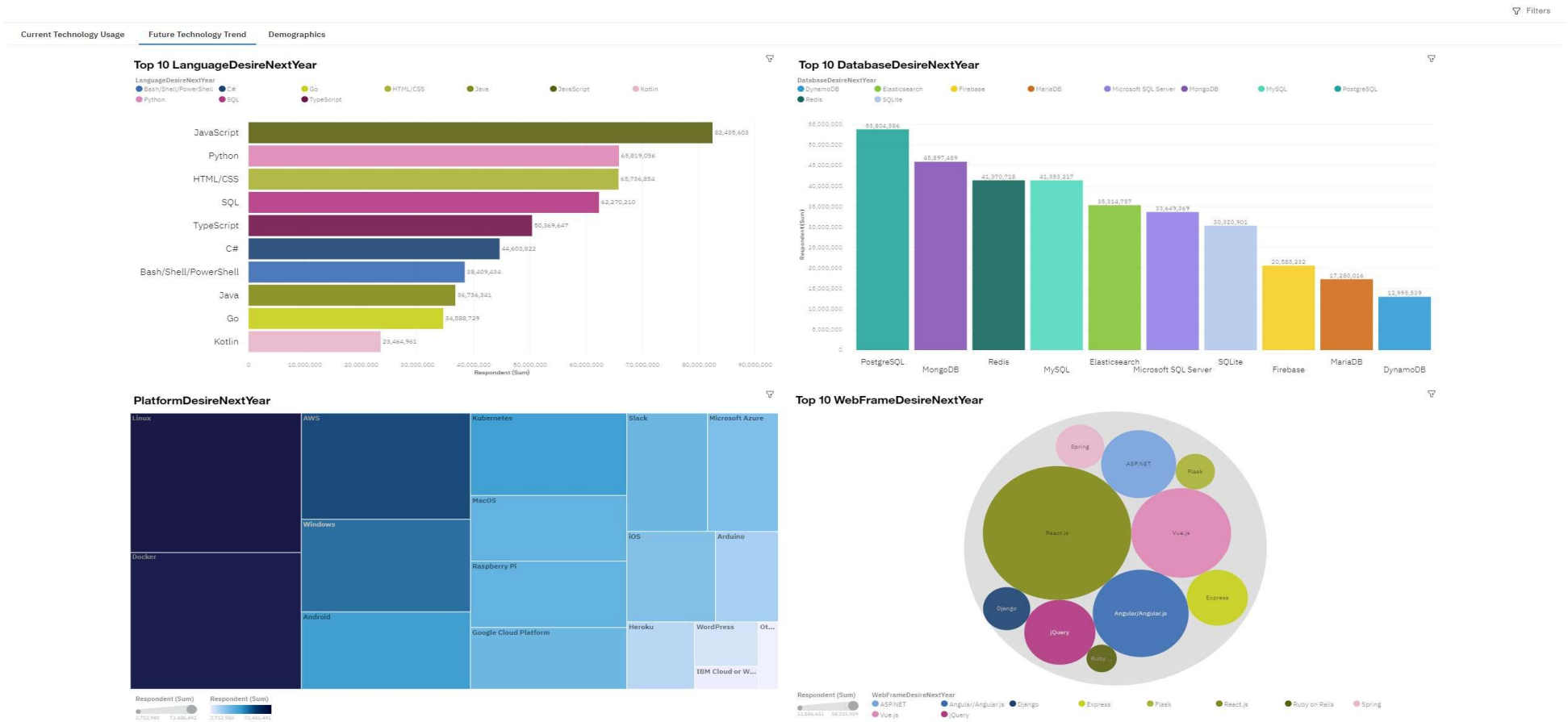


<https://dataplatform.cloud.ibm.com/dashboards/605c0ca9-4f1e-4293-9a8b-5d07d706cf44/view/7520e63c158c2aed48d1b1e407cf2e0574342208bbbbd25780d67b490b627897a93c4099c82843098b15506aa6e4155198>

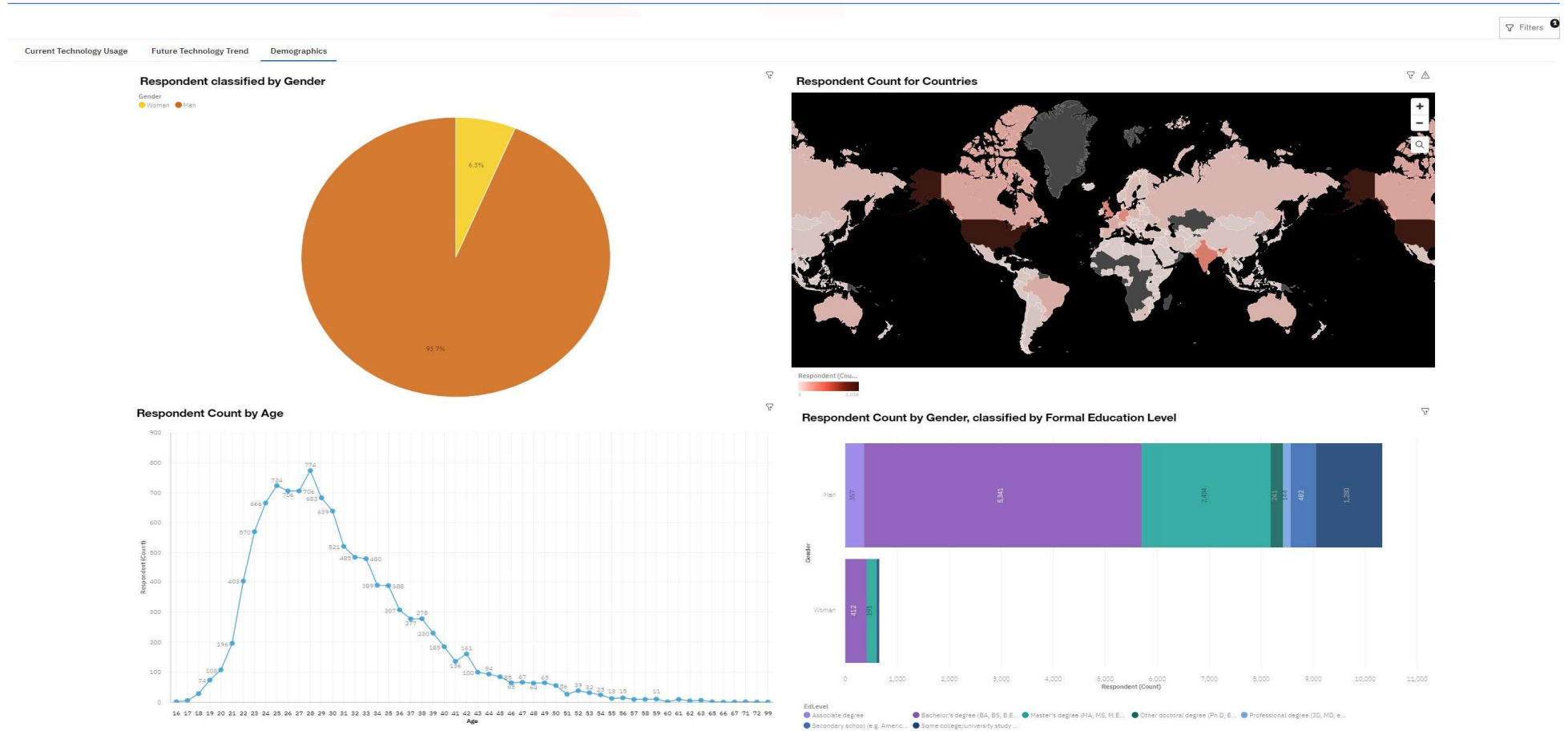
# DASHBOARD TAB 1



# DASHBOARD TAB 2



# DASHBOARD TAB 3





# DISCUSSION

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- For future skills requirements and recommendations:
  1. What are the Skill must have? Or DESIRE to be in the industry?
  2. Top programming languages FutureDesire are:
    - JavaScripts, Python, HTML/CSS,SQL,TypeScript have become the new desire programming language that are gaining popularity in the IT industry
  3. Top Database Skills:
    - PostgreSQL, MongoDB,Redis, MySQL, Elasticsearch are becoming more sought after as compared to current most popular databases that people worked with.
  4. Popular IDEs:
    - React.js,Angular/Angular.js,Vue.js , jquery and ASP.net are the popular IDEs.

# OVERALL FINDINGS & IMPLICATIONS

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## Findings

- JavaScripts, Python, HTML/CSS,SQL,TypeScript are the new desire programming language
- PostgreSQL, MongoDB,Redis, MySQL, Elasticsearch are the new desired Database
- React.js,Angular/Angular.js,Vue.js , jquery and ASP.net are the popular IDEs
- The trends shows a drastic changes in Desire for nextyear 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 and 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 techonoly.

# Additional FINDINGS & IMPLICATIONS

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## Findings

- The survey that is done where Men are more involve in the IT industry as depicts from the DashBoard 3 Pie chart where it shown about 93.7% of the industry are men.
- From the research it also shows that the respondent for the survey are roughly around age of 18-40
- From the survey also illustrated that most respondent has atleast an education level of a bachelors degree

## Implications:

- There might be a relationship related between the next year desire skills and the education level of the respondent.
- Gender might plays a role in the ever changing industry of IT

# CONCLUSION

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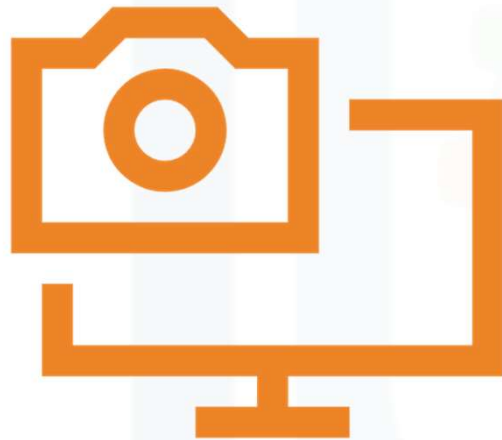


- The Open source data collected from StackFlow can be recreated and analyze to avoid any data biased.
- The technologies that worked with in current year has shown a shift in trend, in order to remain competitive changes in skills requirements are needed.
- The significant changes and desires are shown in programming languages and the databases.Hence the new requirements:
- Programming Language:
  - JavaScripts, Python, HTML/CSS,SQL,TypeScript
- Database:
  - PostgreSQL, MongoDB,Redis, MySQL, Elasticsearch
- IDEs:
  - React.js,Angular/Angular.js,Vue.js , jquery and ASP.net

# APPENDIX

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file named *popular-languages.csv*

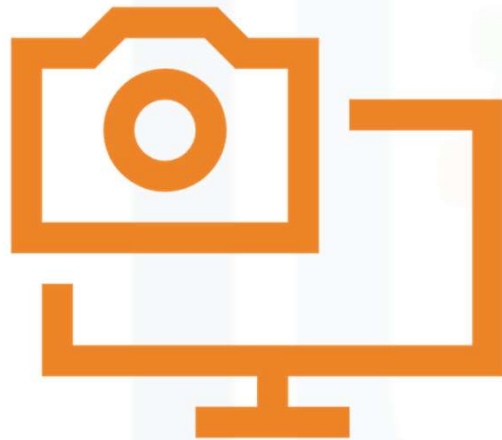


Language	Average Annual Salary
Python	\$114,383
Java	\$101,013
R	\$92,037
Javascript	\$110,981
Swift	\$130,801
C++	\$113,865
C#	\$88,726
PHP	\$84,727
SQL	\$84,793
Go	\$94,082

# APPENDIX

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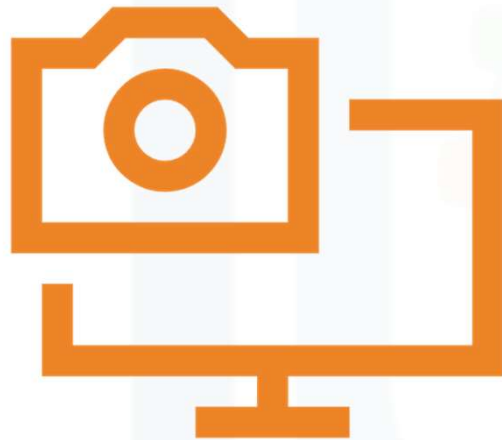


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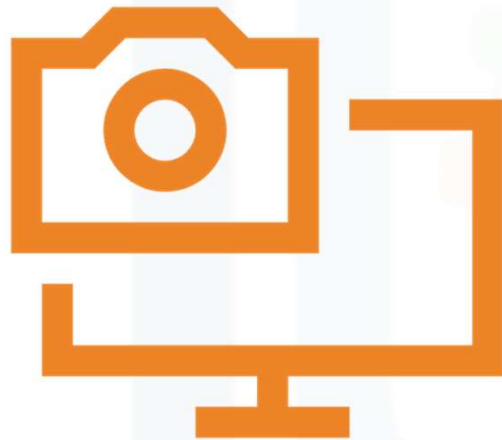


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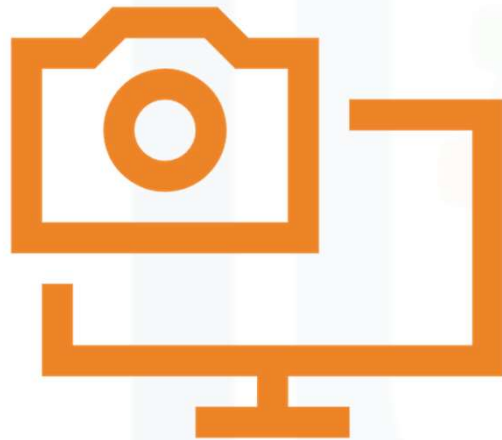
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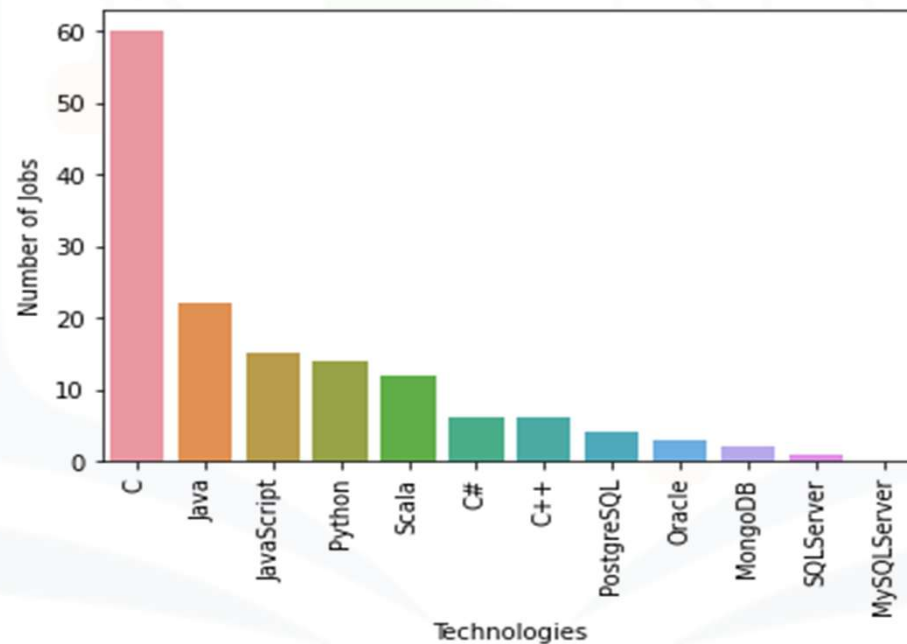
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# GITHUB JOB POSTINGS

In Module 1 you have collected the job postings data using GitHub API in a file named “github-job-postings.xlsx”. Present that data using a bar chart here. Order the bar chart in the descending order of number of job postings.



# POPULAR LANGUAGES

In Module 1 you have collected the job postings data using web scraping in a file named “popular-languages.csv”. Present that data using a bar chart here. Order the bar chart in the descending order of salary.

