



IBM Data Analyst Capstone Project Presentation


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OUTLINE



- Executive Summary
- Introduction
- Methodology
- Results
- Visualization – Charts
 - Dashboard
- Discussion

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- Findings & Implications
 - Conclusion
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EXECUTIVE SUMMARY



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- This report presents the trends in programming languages and databases.



- This shows a detailed review about
- Current Technology Usage
- Future Technology Trends and
- Demographics of the Analyzed Data.
- Top Programming languages for the next year includes Go, Python, Shell, HTML/CSS.

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- Top Databases preferred for the next year includes PostgreSQL, MongoDB, MySQL.

INTRODUCTION

- Based on Stack Overflow Developer 2019 Survey, Analysis of programming languages, databases, platforms and web frameworks are carried out.



- This particular report focuses on programming languages and databases.
- What are the top 5 programming languages used by the respondents?
- What are the top 5 programming languages they want to learn next year?

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- What are the top 5 databases used by the respondents?
 - What are the top 5 databases they want to learn next year?

METHODOLOGY



- Data Collection
 - Using API's.
 - Web Scraping.
- Data Wrangling
 - Finding Duplicates and Missing Values.
 - Removing those and Cleaning the data.
 - Normalizing Data.

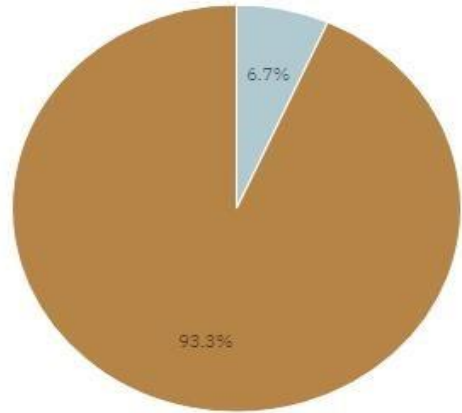
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- Exploratory Data Analysis
 - Distribution, Outliers and Correlation.
 - Data Visualization
 - Visualizing distribution of data.
 - Dashboard Creation

RESULTS

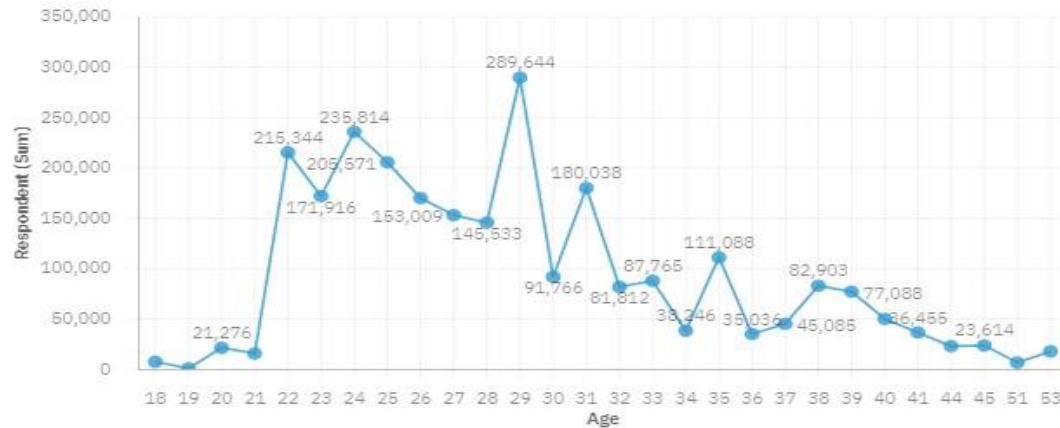


Respondent classified by Gender

Gender
 ● Woman ● Man



Respondent Count by Age



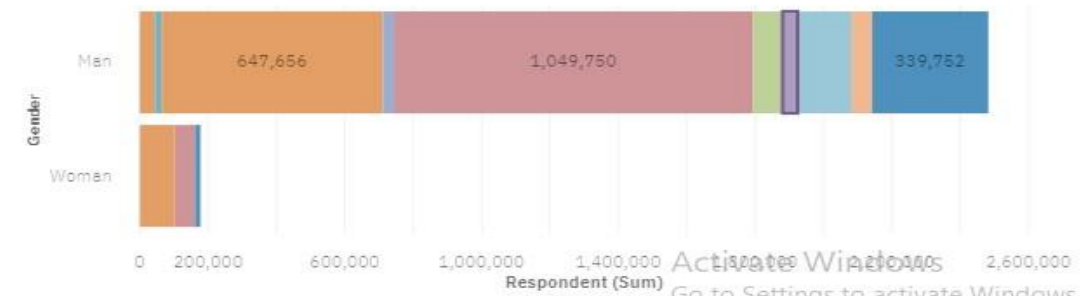
Respondent Count for Countries

Respondent (Sum)
 865 38,170,293



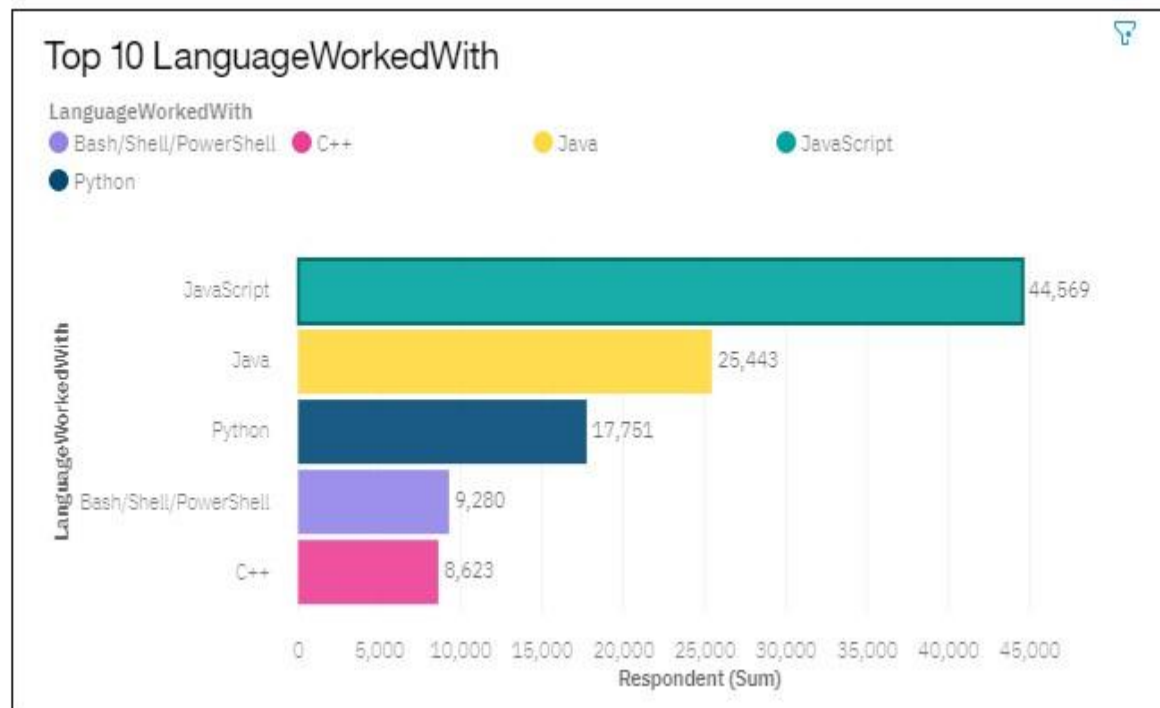
Respondent Count by Gender, classified by Formal Education Level

EdLevel
 ● (no value) ● 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 ● Professional degree (JD, MD, e... ● Secondary school (e.g. Americ...
 ● Some college/university study ...

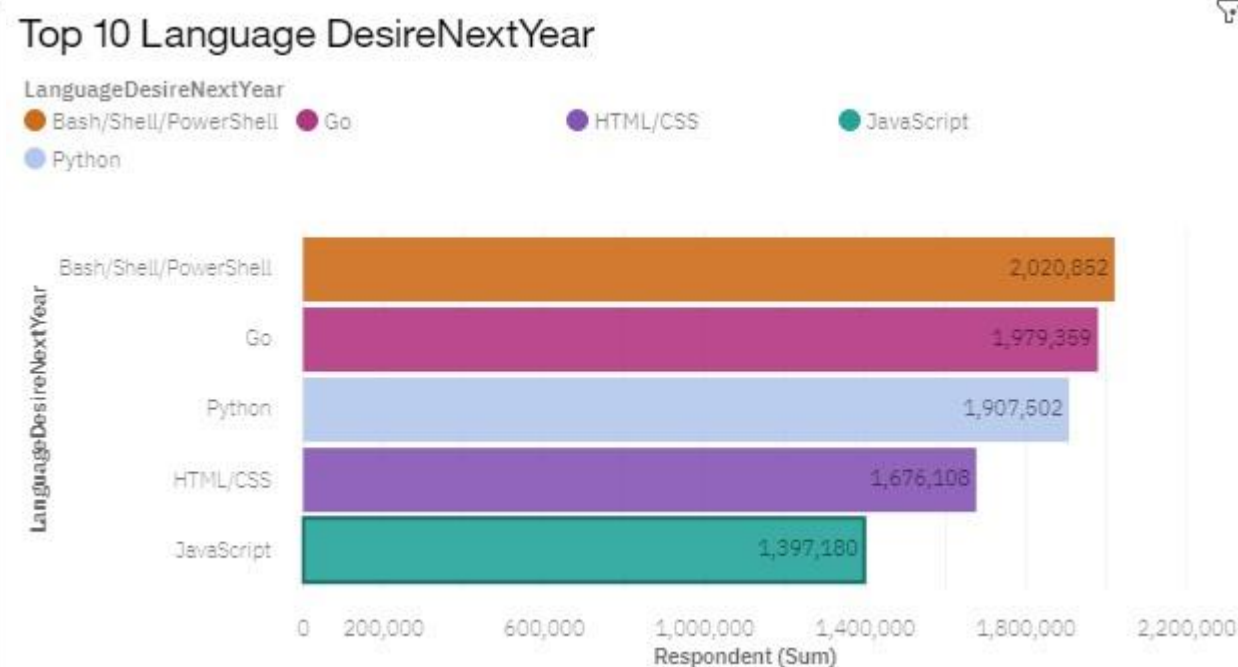


PROGRAMMING LANGUAGE TRENDS

Current Year



Next Year



PROGRAMMING LANGUAGE TRENDS – FINDINGS & IMPLICATIONS

Findings

- Current Top 3 – JavaScript, Java, Python
- HTML/CSS, Typescript, C# seems to rise during upcoming years.

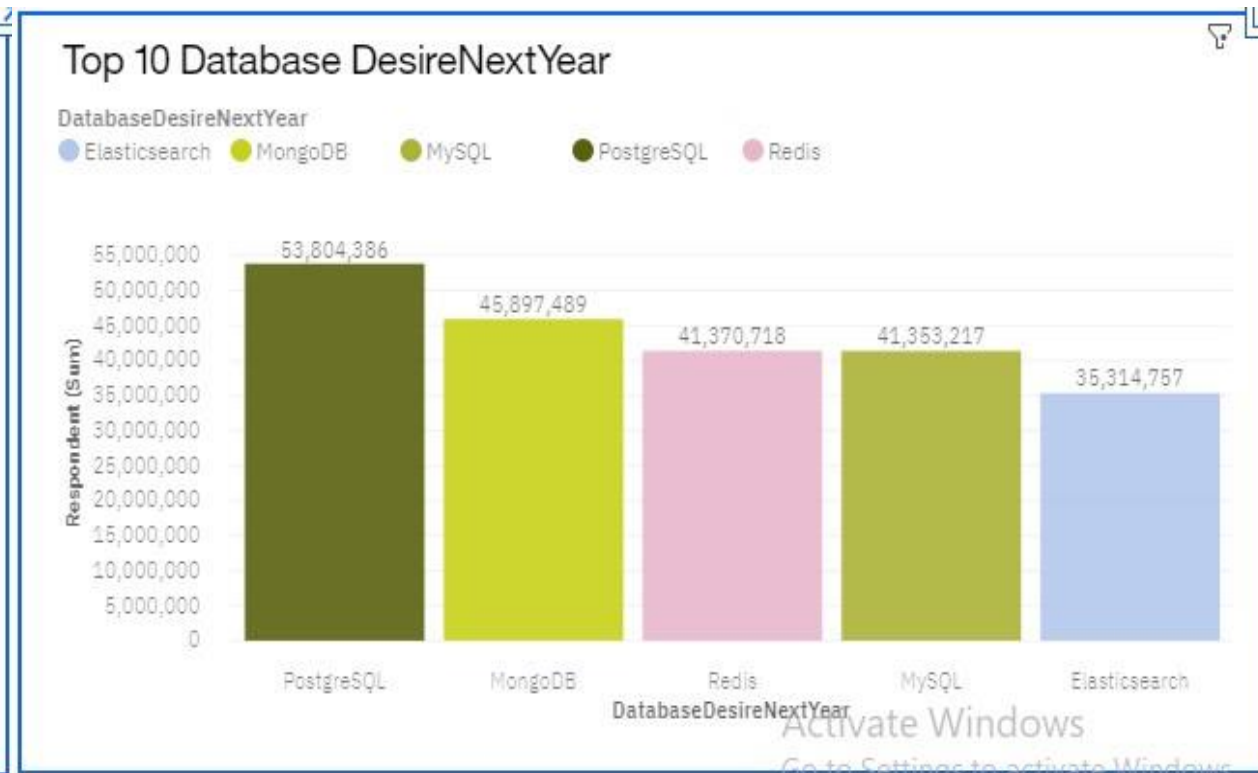
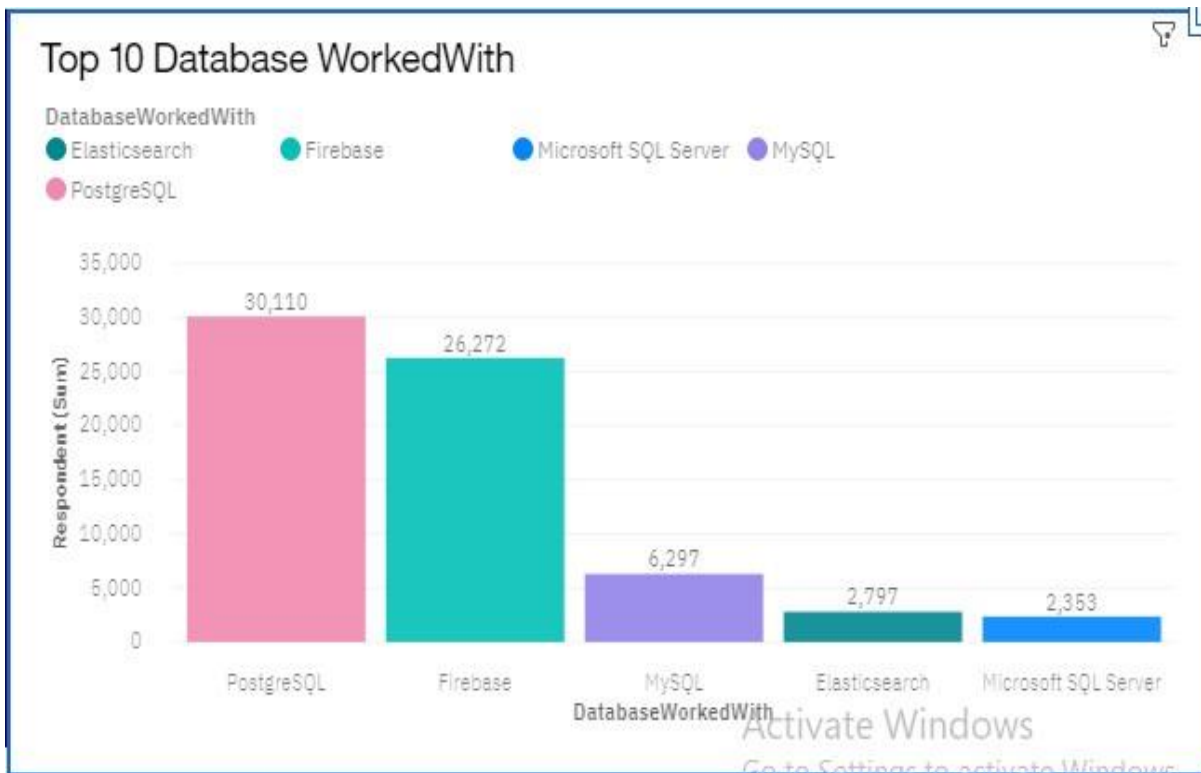
Implications

- Python a must known programming language for the future.
- Web Developers needs to acquire new skills such

- Web framework such as as Typescript and some React.js and Angular are of the latest web being used high. framework to use it as an asset.

DATABASE TRENDS Current

Year Next Year



DATABASE TRENDS – FINDINGS & IMPLICATIONS

Findings

- The most common and well-know databases are in the top three rank.
- Databases such are PostgreSQL, and MongoDB has occurred top 2 for the next year.
- MongoDB a documentoriented NoSQL database has occurred top 2 for the upcoming year.

Implications

- Companies may be shifting to PostgreSQL from MySQL for the next year.
- NoSQL databases will have higher impact in coming years.
- Demand for database skills are stable over the upcoming years.

DASHBOARD



<https://dataplatform.cloud.ibm.com/dashboards/bfc92cb2-40a7-43e6-8266-15e0dc7cc933/view/6c15f91b018203f468e2f6e407cc2c067f61275be6bb8405d1837b4959647997a96f1190c87b4b598b455163a0bd1450ca>

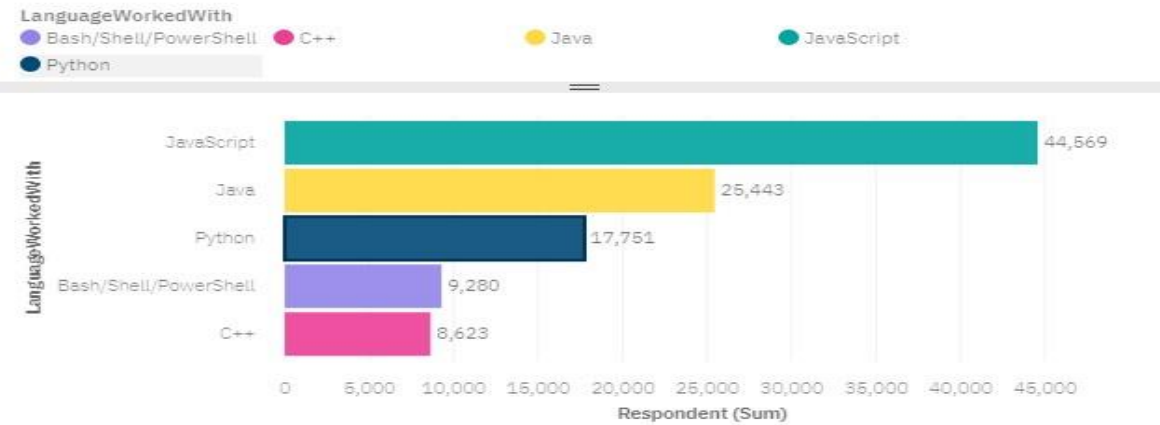
DASHBOARD TAB 1

Current Technology Usage

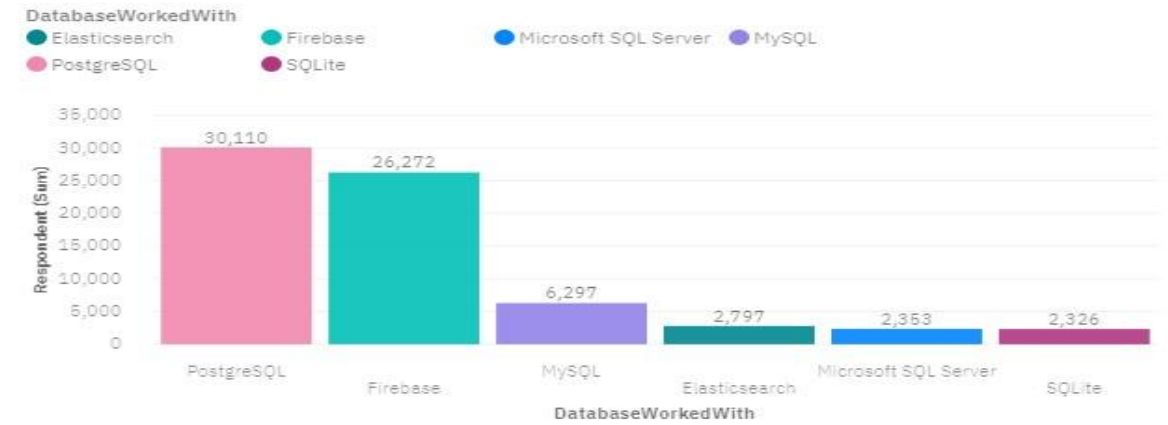
Future Technology Trend

Demographics

Top 10 LanguageWorkedWith



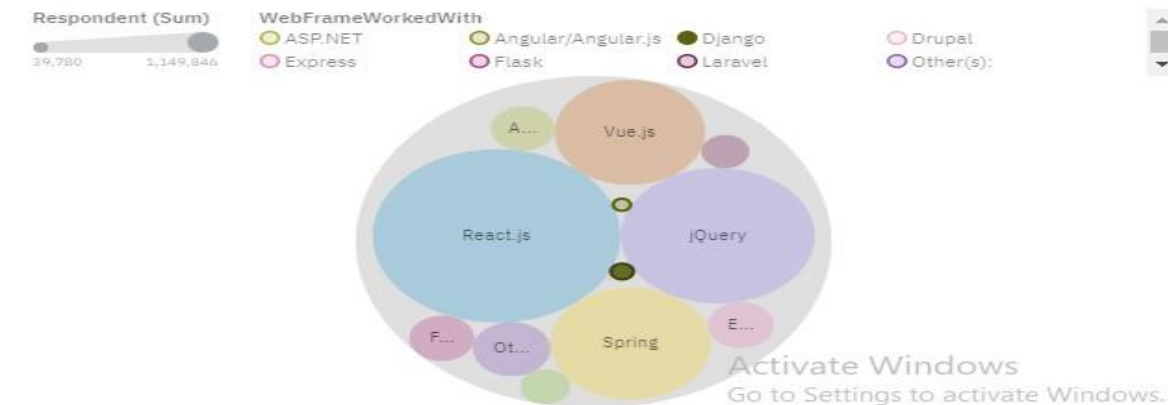
Top 10 Database WorkedWith



Platforms WorkedWith



Top 10 WebFrame WorkedWith



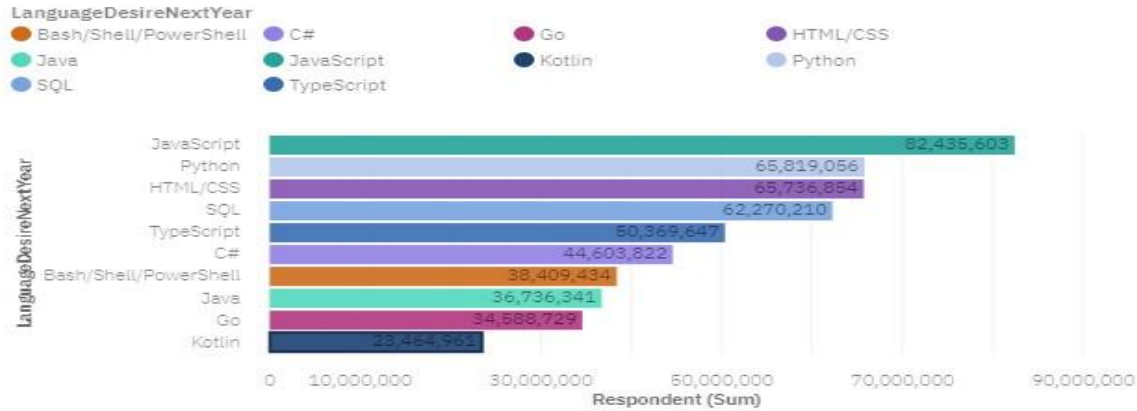
DASHBOARD TAB 2

Current Technology Usage

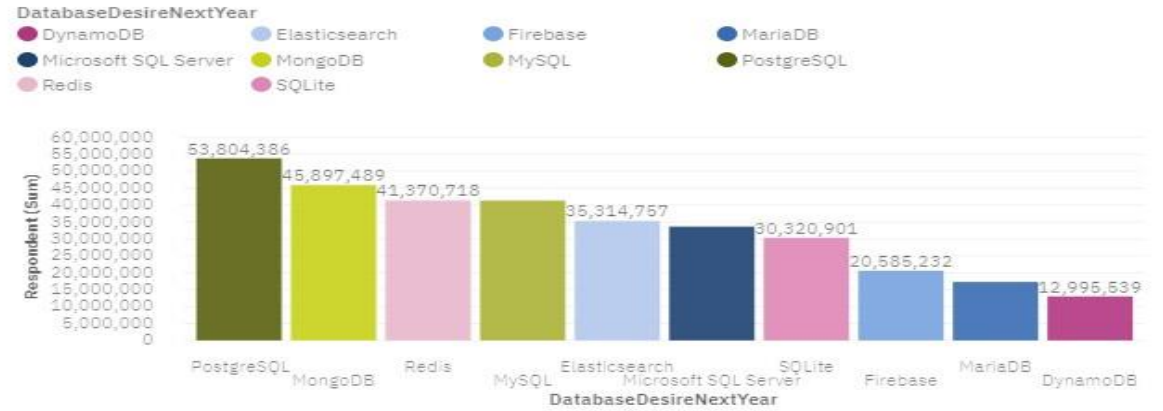
Future Technology Trend

Demographics

Top 10 Language DesireNextYear



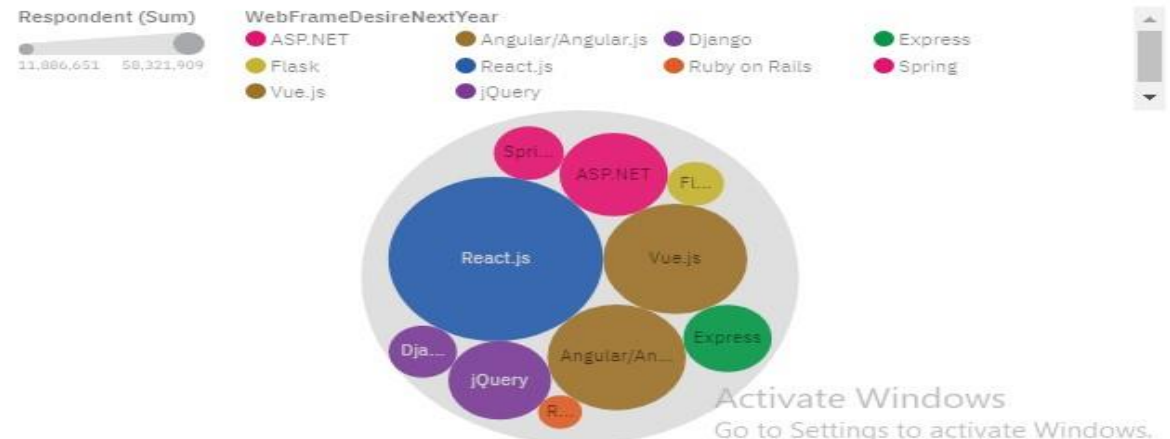
Top 10 Database DesireNextYear



Platform DesireNextYear



Top 10 WebFrame DesireNextYear



Activate Windows
Go to Settings to activate Windows.

DASHBOARD TAB 3

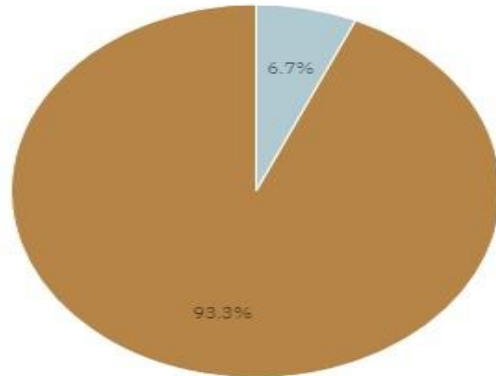
Current Technology Usage

Future Technology Trend

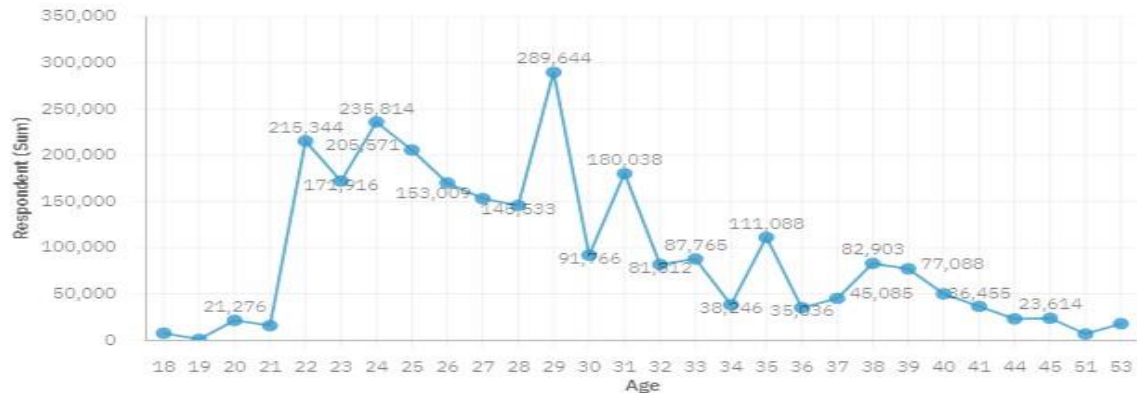
Demographics

Respondent classified by Gender

Gender
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Respondent Count by Age



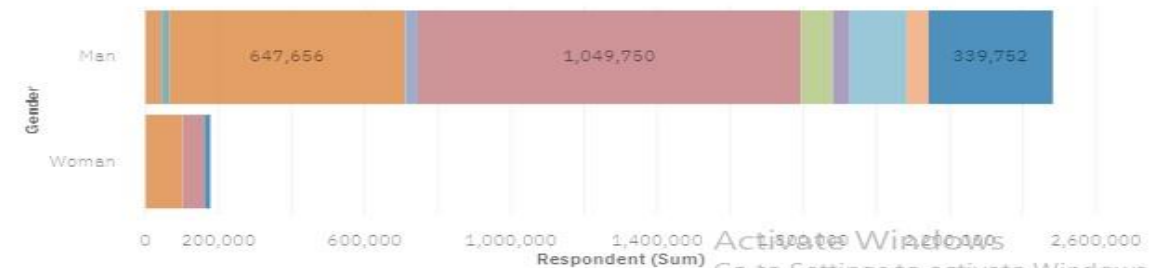
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● Some college/university study... ● Other doctoral degree (Ph.D, E...



DISCUSSION





- Will JavaScript and Python be dominant for next 10 years?
- Is it better to learn several languages or to focus on just one?
- Are workers over 40 out of the tech job market?
- Is the Web Development market saturated?

OVERALL FINDINGS & IMPLICATIONS

Findings

- The trends show that Web Development market is strong
- Highly demanded and rapidly changing sectors.
- Most workers aged 22-32.
- The I.T development market is getting more competitive.
- Employees should adapt to changes.
- Learning different technology (programming language, database and cloud services) can be very advantageous.

Implications

CONCLUSION



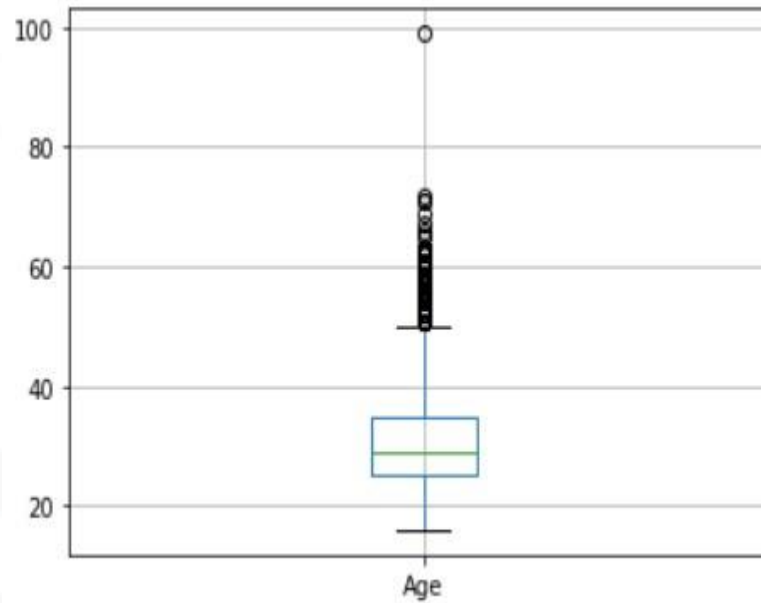
- Respondents are focused on Web Development .
- JavaScript and HTML/CSS are still the most popular languages throughout next year.
- Python, Typescript and Go will continue to grow over upcoming years.

- Demand for working with these technologies increases every time.
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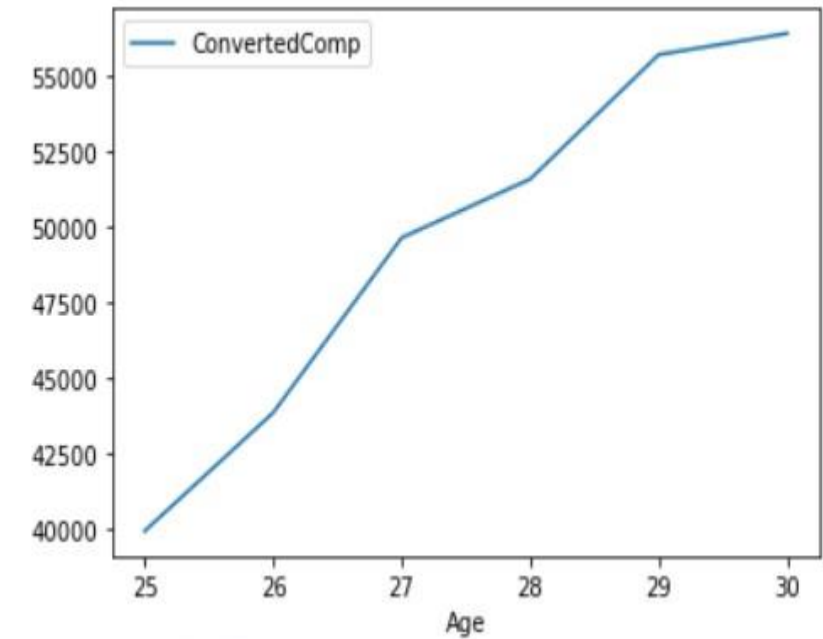




Boxplot chart showing that 50% of respondents are between 25 and 35

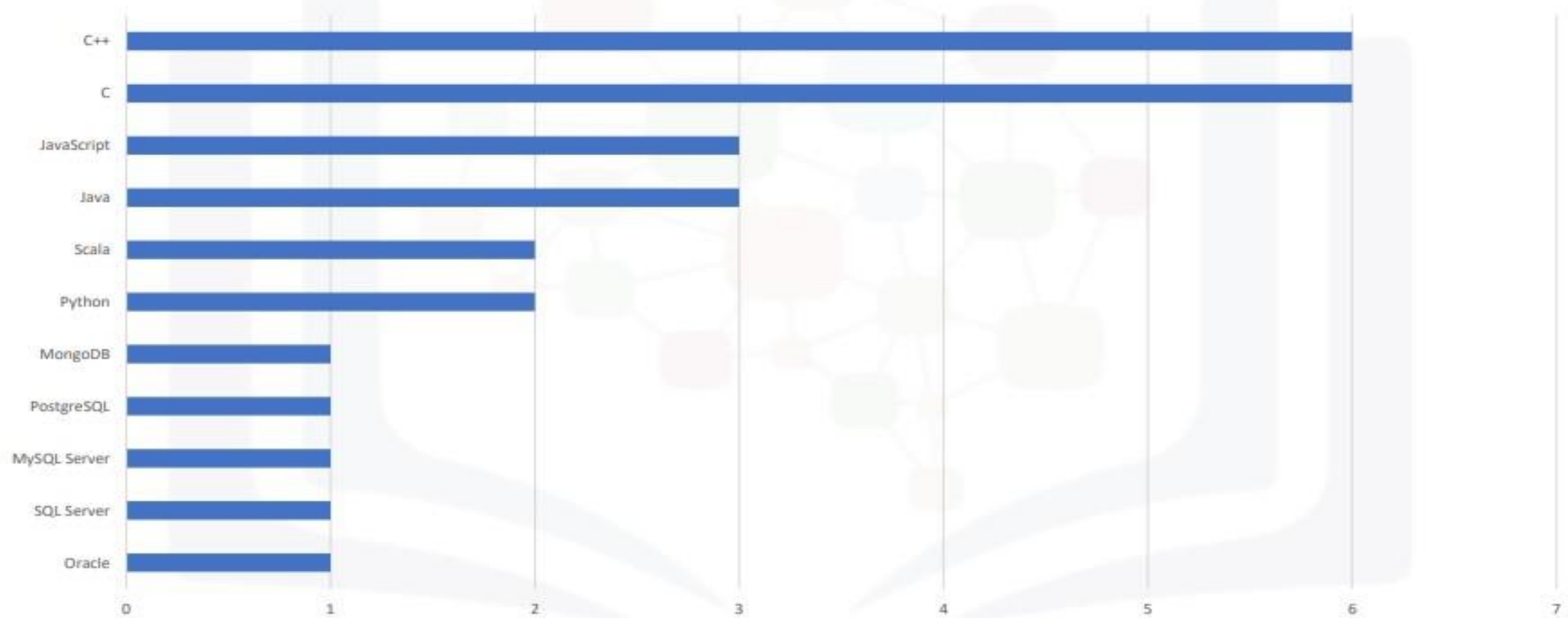


Line chart showing a positive correlation between Age.



GITHUB JOB POSTINGS





POPULAR LANGUAGES



