TECHNOLOGY PREFERENCES BY PROFESSIONALS DATA REPORT

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OUTLINE

EXECUTIVE SUMMARY

- This report analyzes popularity and demand for tech skills.
- Three sources of data were used. Data was processed, normalized, and analyzed through visualizations.
- JavaScript, HTML, Python, and SQL are currently highly utilized and are expected to be the most used languages next year according to IT professionals.
- PostgreSQL, Mongo DB, Redis, and Firebase are currently highly utilized and are expected to be the most used databases next year according to IT professionals.
- Based on web-scraping of GitHub Jobs, C++, Java, and JavaScript are the top mentions in new job postings.
- Swift, Python, and C++ are the most lucrative jobs..

INTRODUCTION

Stack Overflow's annual Developer Survey is the largest and most comprehensive survey of people who code around the world.

This analysis was performed to understand favorite technologies amongst Information Technology Professionals.

METHODOLOGY (contd..)

Collect Jobs Data using GitHub Jobs API

- https://jobs.github.com/api

Salary information as per Programming Language

- https://cf-courses-data.s3.us.cloud-object-storage.appdomain.cloud/IBM-DA0321EN-skillsNetwork/labs/datasets/Programming_Languages.html

Survey Dataset

- "https://cf-courses-data.s3.us.cloud-object-storage.appdomain.cloud/IBM-DA0321EN-SkillsNetwork/LargeData/m1_survey_data.csv"

METHODOLOGY

DATA EXPLORATION

- Collecting Data Using APIs
- Collecting Data Using Web Scraping
- Exploring Data

DATA WRANGLING

- Finding Duplicates
- Removing Duplicates
- Finding Missing Values
- Imputing Missing Values
- Normalizing Data

EXPLORATORY DATA ANALYSIS

- Analyzing the data distribution
- Hanging Outliers
- Correlation

METHODOLOGY

DATA VISUALIZATION

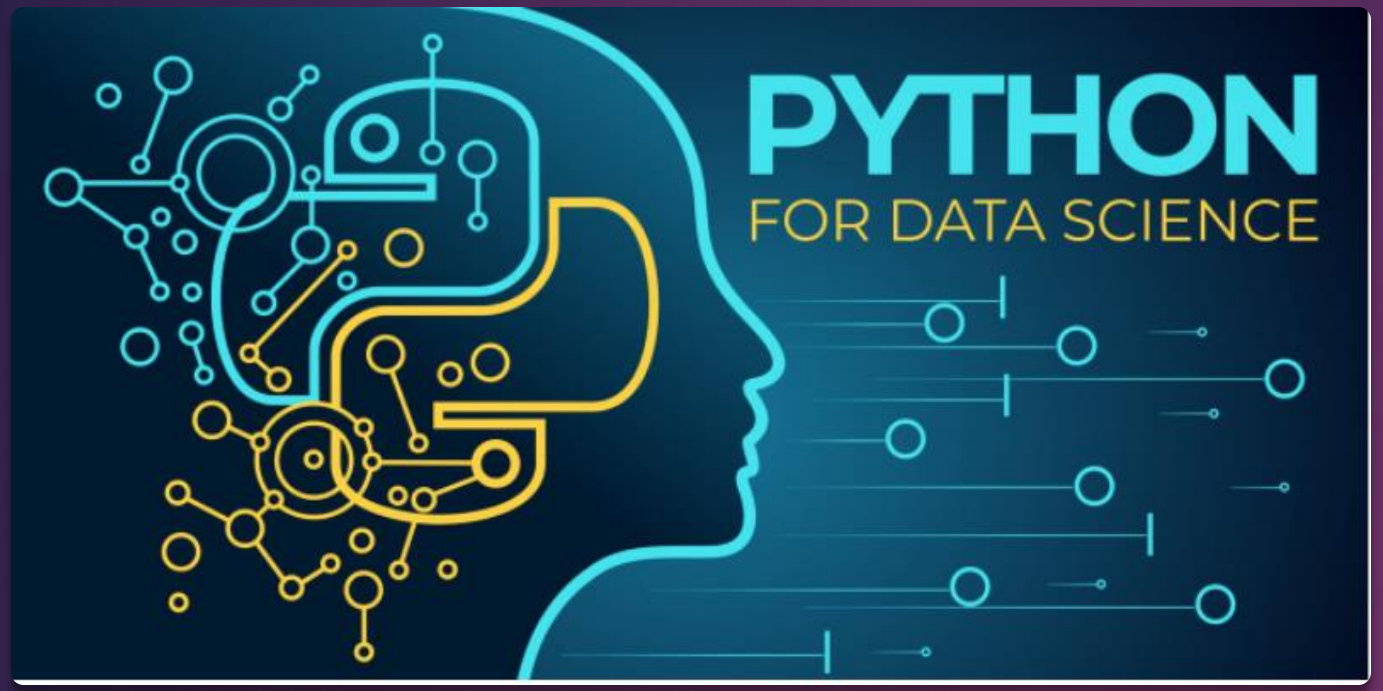
- Visualizing Distribution Of Data
- Visualizing Relationship
- Visualizing Composition of Data
- Visualizing Comparison of Data

DASHBOARD

- Building a Dashboard using Cognos Analytics

METHODOLOGY
TOOLS AND TECHNOLOGY USED

- IBM Cloud
- Watson Studio
- DB2
- Office on Web
- Business Intelligence Tools
  - Cognos Analytics
  - Microsoft Excel



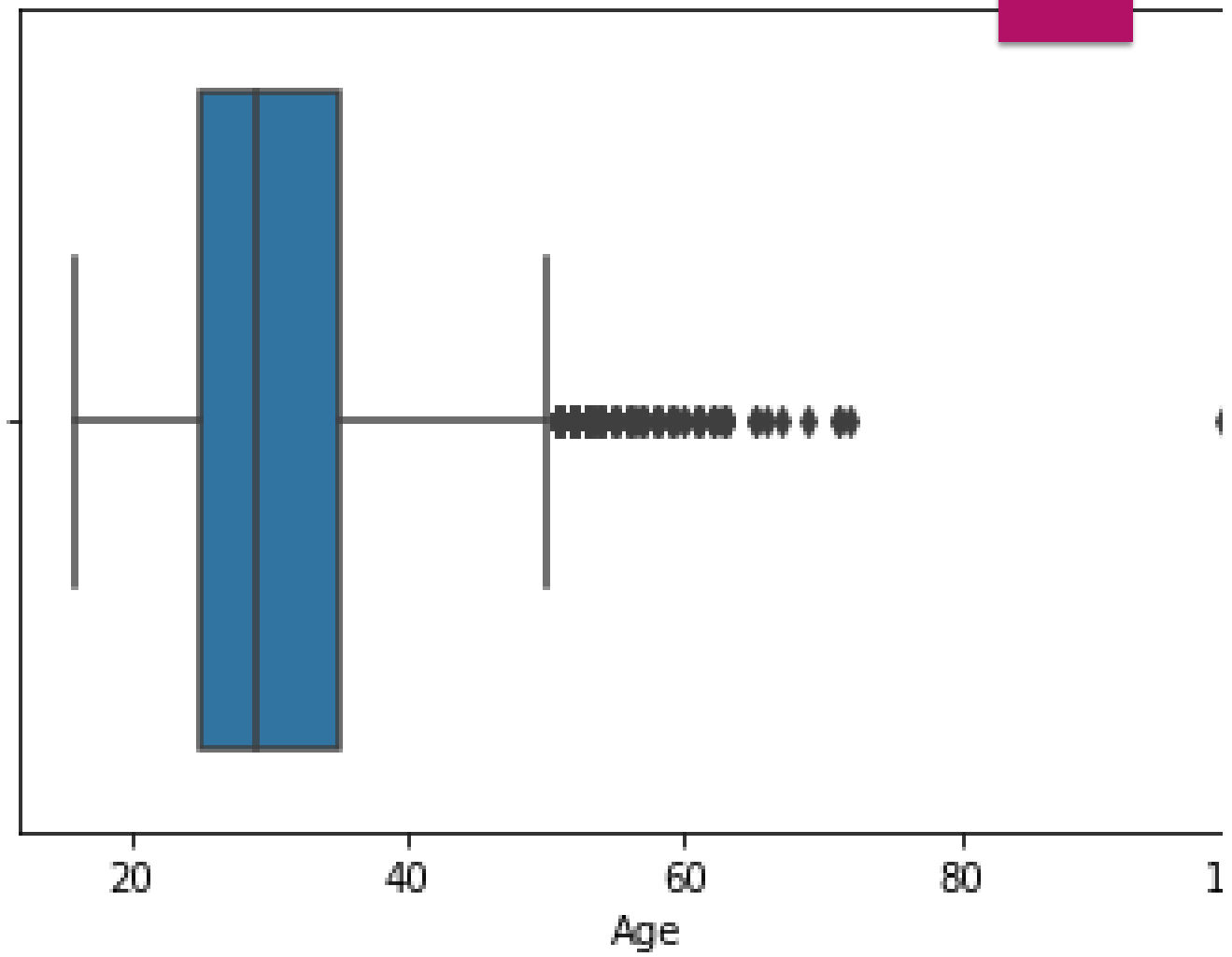
PROGRAMMING LANGUAGE USED

SQL, the Standard language for relational database management systems is used

RESULTS

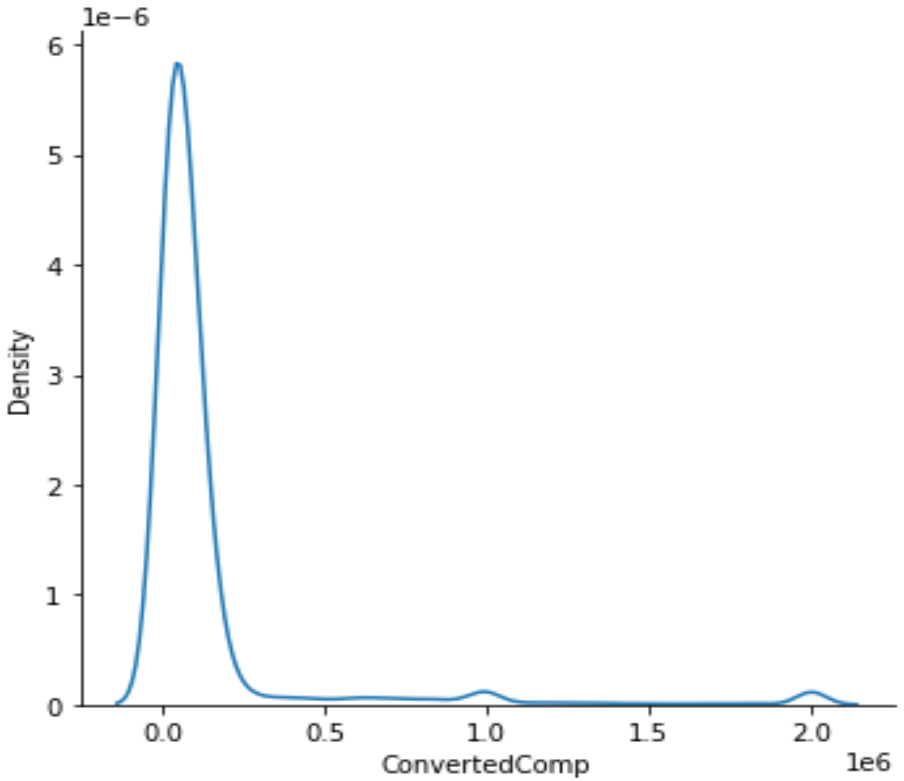
SURVERY RESULTS

- The median age for the survey respondents is 29.0
- The original data contained 85 columns and 11582 records for the survey



SURVERY RESULTS

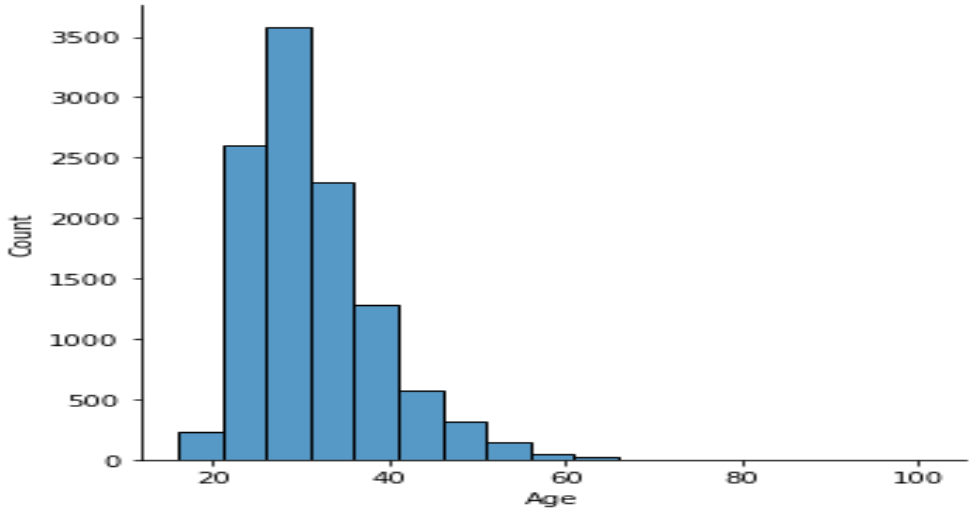
- Since Respondents can provide Weekly, monthly, annually data regarding their compensation so normalize the data was required.
- Normalized compensation can be visualized in this distribution curve
- The seaborn library version '0.11.1' is used for visualizations



SURVERY RESULTS

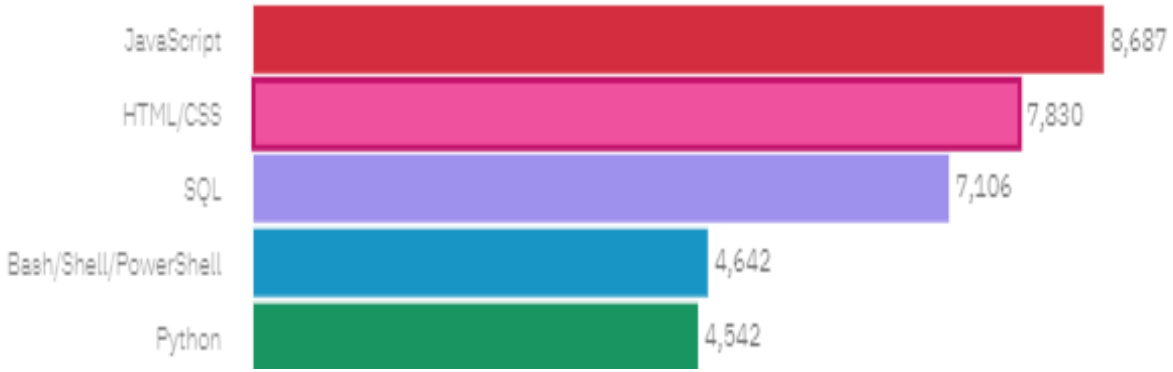
- Median of the column ConvertedComp is 57745.0
- 10480 respondents identified as Man
- 731 respondents identified as Woman.
- Five number summary and histogram of age can be seen on right side of this slide.

```
min          16.000000
25%          25.000000
50%          29.000000
75%          35.000000
max          99.000000
Name: Age, dtype: float64
```

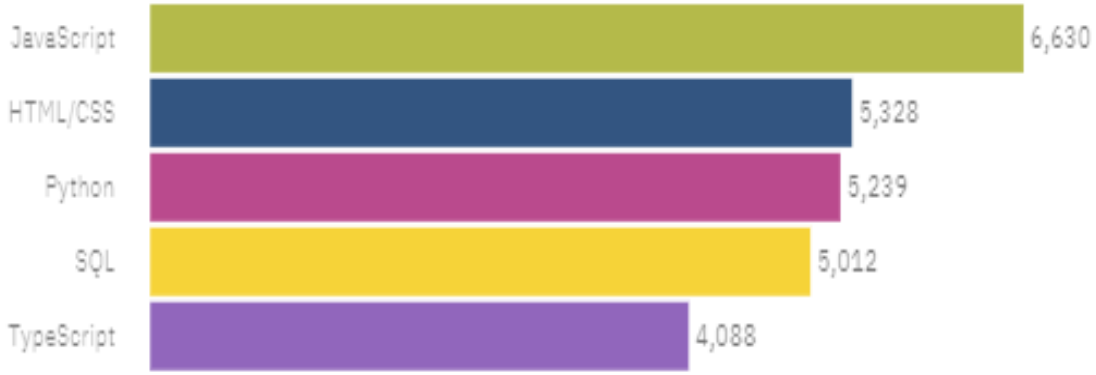


PROGRAMMING LANGUAGE TRENDS

Current Year



Next Year



PROGRAMMING LANGUAGE TRENDS - FINDINGS & IMPLICATIONS

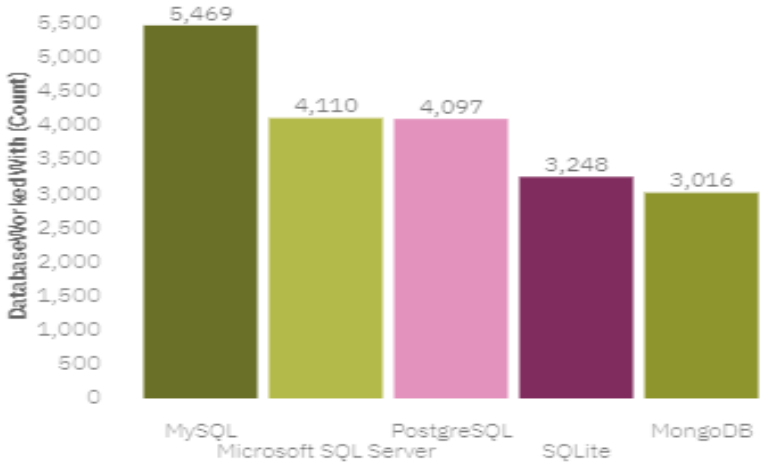
Findings

- TypeScript has come up from 8th position to 5th position replacing Bash/Shell/PowerShell.
- Python is moved to number 3 from number 5.

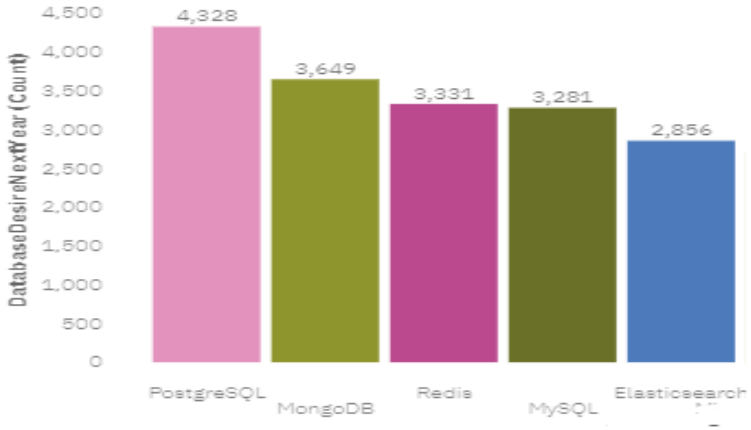
Implications

- JavaScript, HTML, Python, SQL are still in top 5 programming language. Good to have knowledge in these languages for new job seekers for better prospects.
- Go and Kotlin programming language are taking place for C++, PHP
- Python is close to reach on number 2 and most desired programming language

Current Year



Next Year



DATABASE TRENDS

DATABASE TRENDS - FINDINGS & IMPLICATIONS

Findings

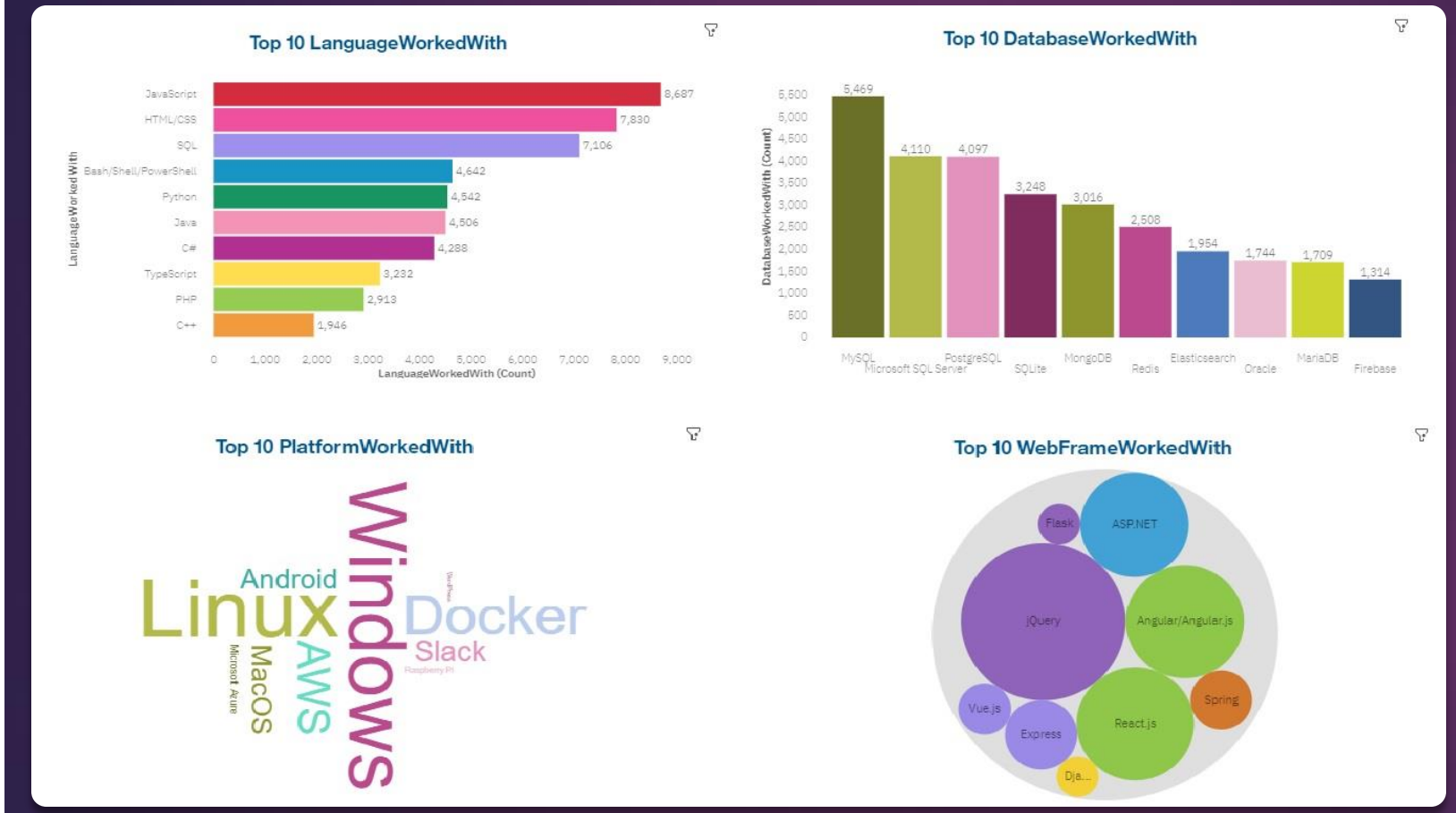
- PostgreSQL, MongoDB, MySQL are amongst top 3.
- Redis and Elasticsearch has taken place in top 5 and replaced Microsoft SQL server and SQLite.
- PostgreSQL taken place of MYSQL on being number 1

Implications

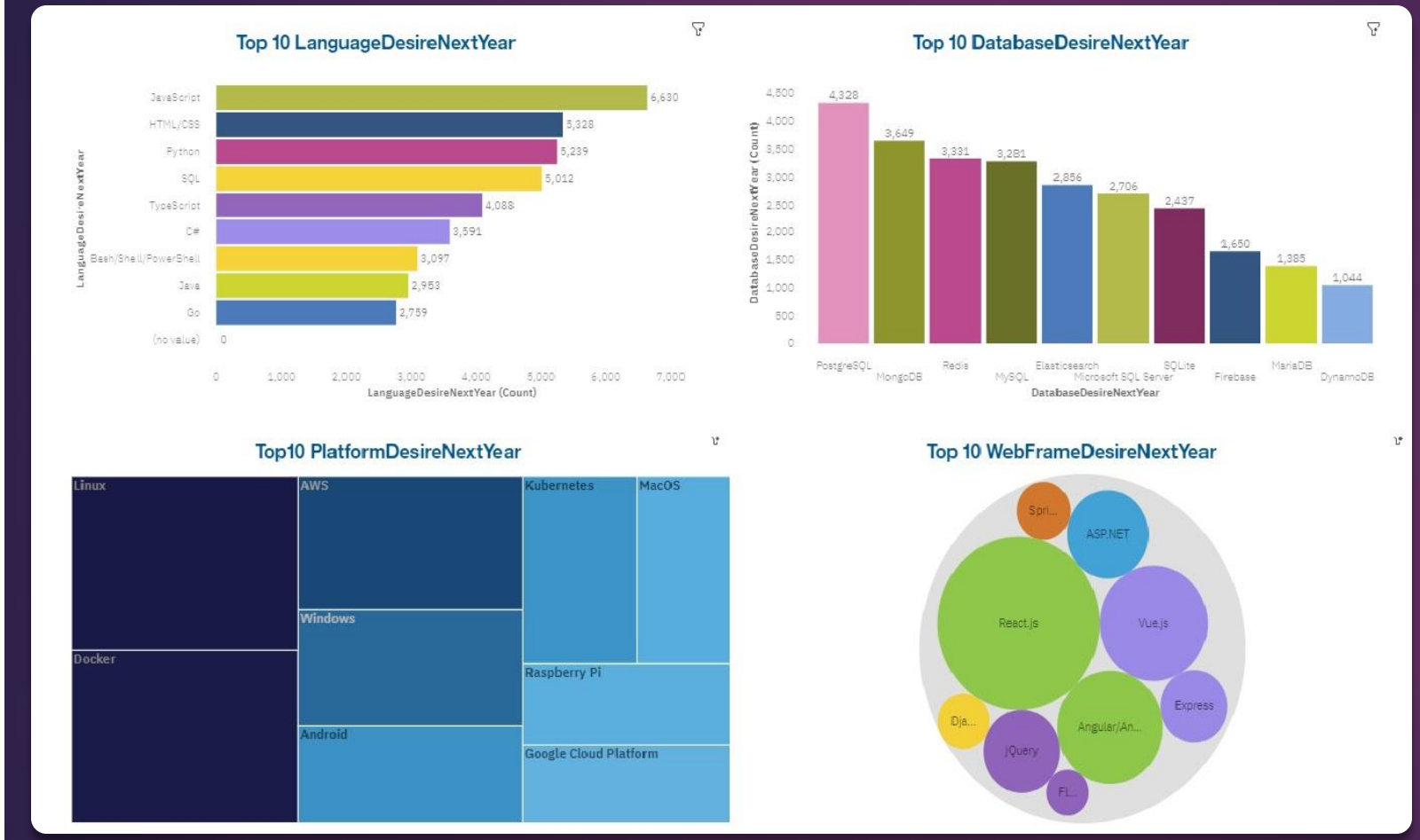
- Microsoft SQL server and SQLite have lost their place in top5 but these are still in top 10
- Redis has been going upwards than MySQL.
- PostgreSQL is on number 1 to work with.

DASHBOARD

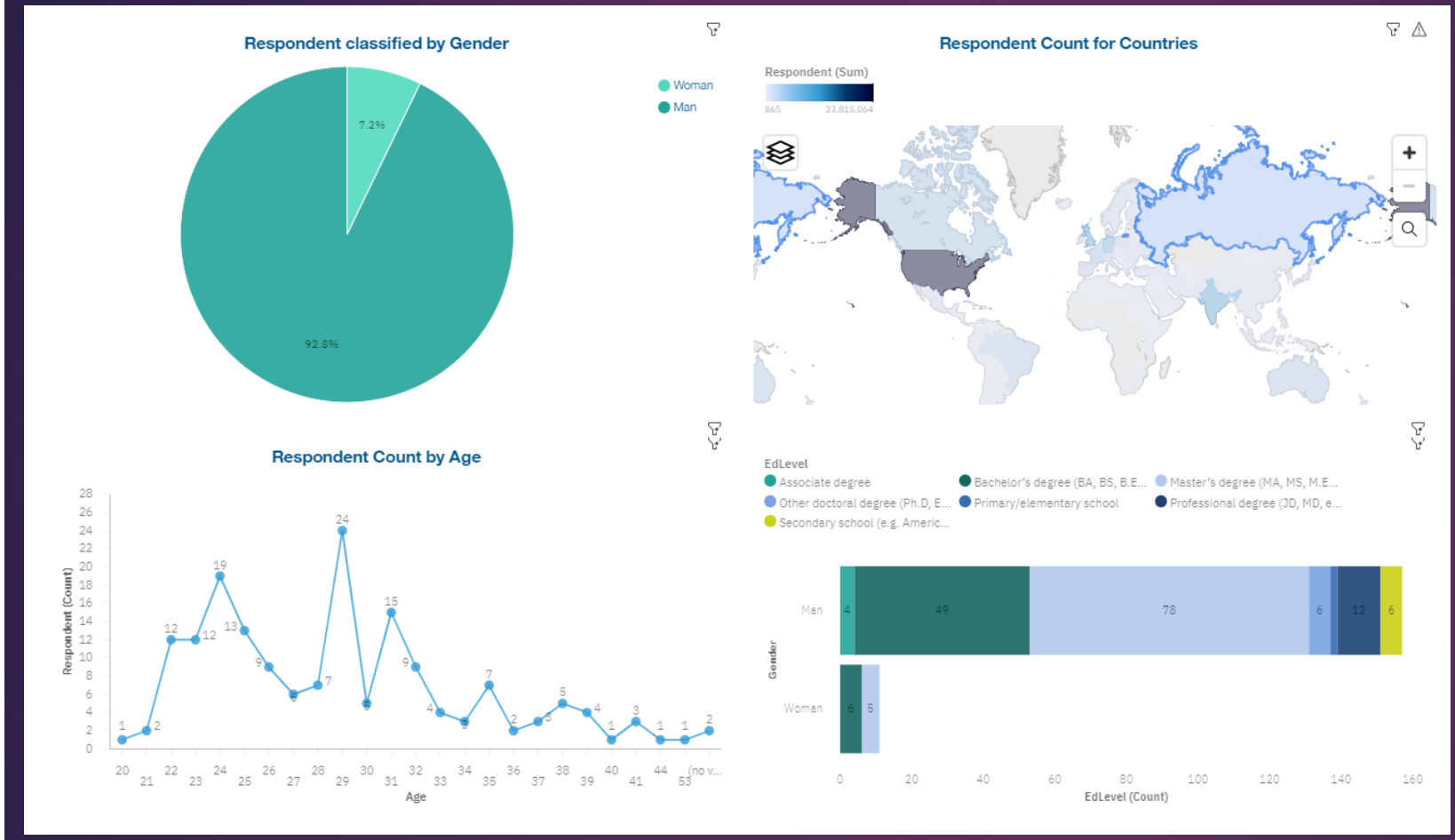
Dashboard Link



DASHBOARD TAB 1

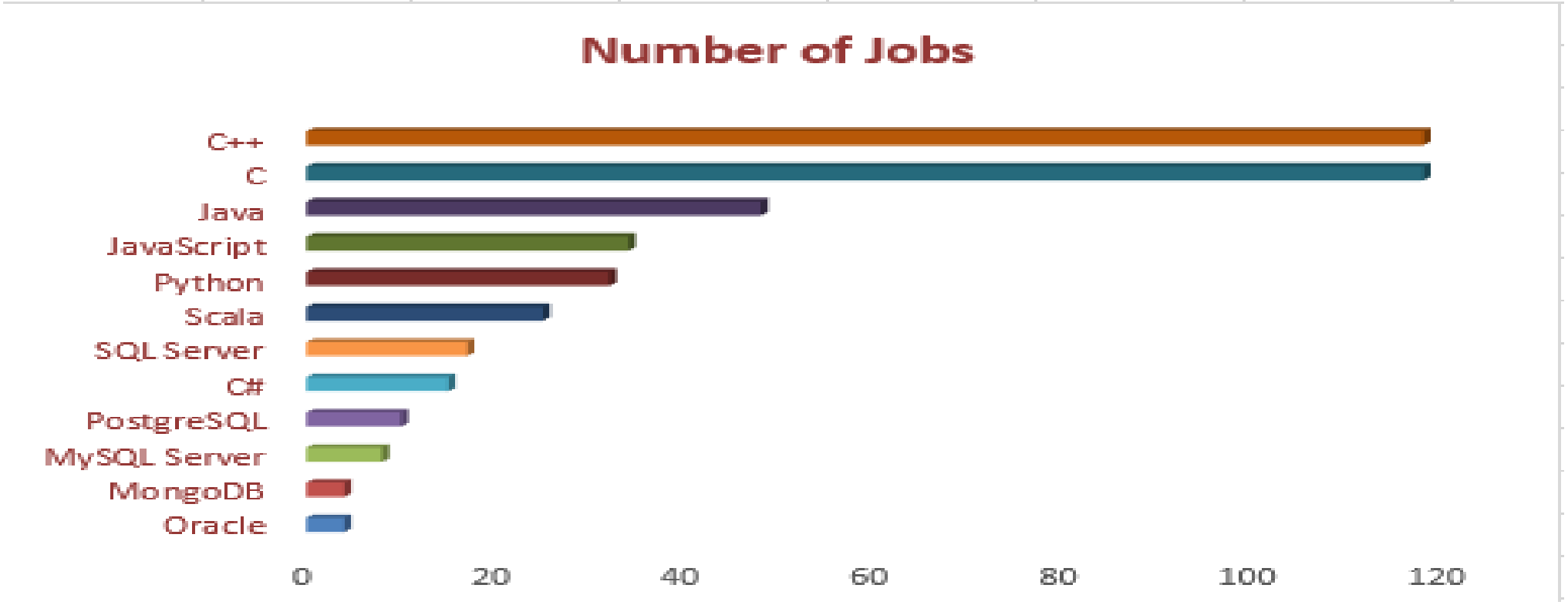


DASHBOARD TAB 2

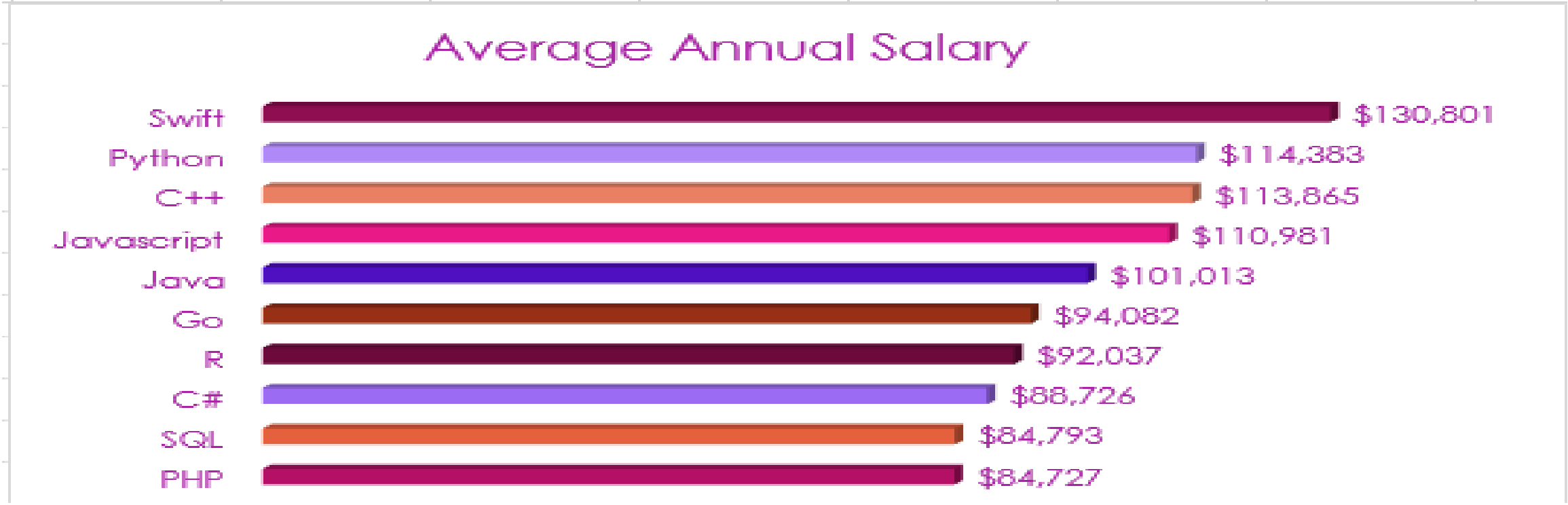


DASHBOARD TAB 3

GITHUB JOB POSTINGS



POPULAR LANGUAGES



DISCUSSION

The data contributes a clearer understanding of current technology usage and future technology trend for top programming language, top database, top platform and top Web-Frame to work with. Further, I analyzed the data as per the demographics of survey respondents which included Age, Country, Gender and Education level

OVERALL FINDINGS & IMPLICATIONS

Findings

- Python is most emerging langauge
- PostgreSQL, MongoDB, MySQL, Redis, ElasticSearch are increasing in popularity amonsgt professionals.

Implications

- Job seekers should learn Python.
- Learning of PostgreSQL, MongoDB of Database Technologies are addition to the profile.

- According to Data, Python is the most emerging language as it is easy to learn for non-coders as well.
- C++ , Java , JavaScript, Python are the highest paying jobs along with market is full of positions with requirements for these langauges.
- Windows, Linux, Docker, AWS, Android are the top 5 platform in current and future technology desire for job professionals.
- React.js, Vue.js has replaced jQuery from being on number 1 Web Frame to work with. It is good to have knowledge of both.