



# Findings “And” Implications “of ” Stack Overflow Developer Survey “2019”

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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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- Current Technology Usage
  - Top 10 Languages
  - Top 10 Databases
  - Platforms
  - Top 10 Web frames
- Future Technology Trend
  - Top 10 Languages Desired Next Year
  - Top 10 Databases Desired Next Year
  - Platforms Desired Next Year
  - Top 10 Web frames Desired Next Year
- Demographics
  - Respondent Classified By Gender
  - Respondent Count By Country
  - Respondent Count By Age
  - Respondent Count By Gender And Classified By Education Level

# INTRODUCTION

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- To remain competitive and keep pace with changing technology, we need regularly analyze data to help identify future skills requirements.
- In this project, we analyze the **Stack Overflow Developer Survey “2019”** dataset for findings and implications.
- There are four emerging skills for identifying trends for this project’s report are the following:
  - Programming Language
  - Database
  - Platform
  - Web Frame
- To analyze the data and identify trends and insights that include the following:
  - What are the top 10 programming languages in demand?
  - What are the top 10 Databases skills in demand?
  - What are the Popular Platforms?
  - What are the top 10 Web Frames?

# METHODOLOGY

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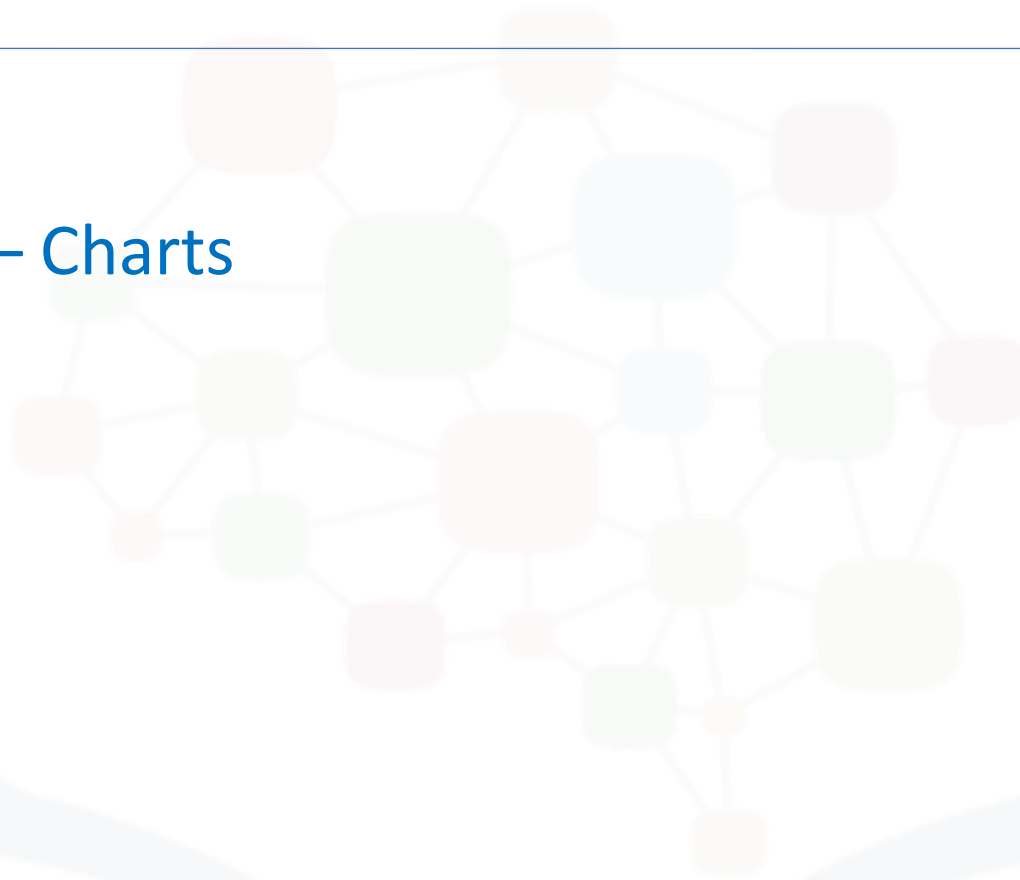


- Data Collection (Source: *Stack Overflow Developer Survey “2019”* )
  - Using APIs
  - Using Web Scraping
- Data Wrangling
  - Finding and Removing Duplicates
  - Finding and Imputing Missing Values
  - Normalizing Data
- Exploratory Data Analysis
  - Analyzing the Data Distribution
  - Handling Outliers
  - Correlation
- Data Visualization
  - Visualization - Charts
    - Distribution, Composition, and Comparison of Data
    - Relationship
  - Dashboard

# RESULTS

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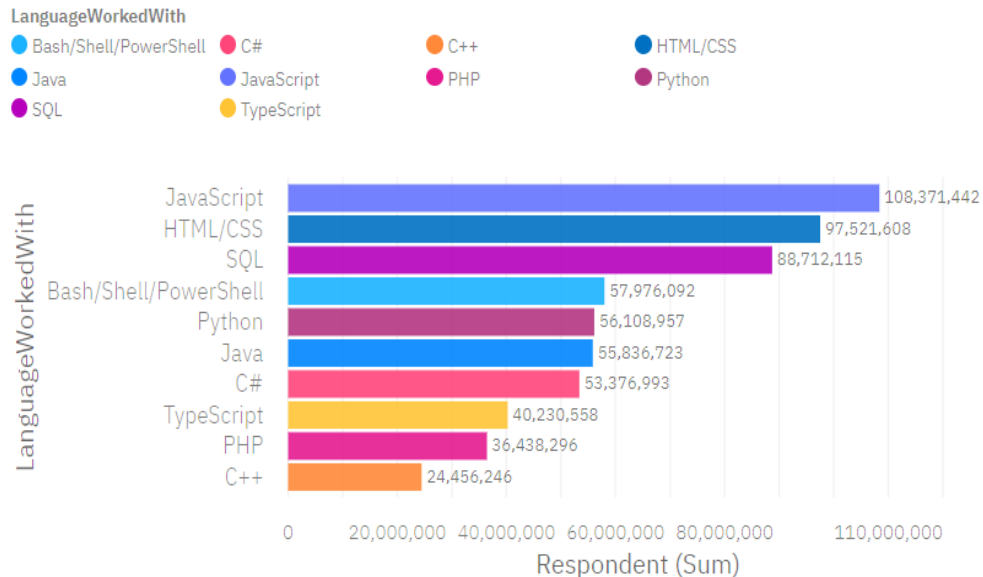
- Visualization – Charts
- Dashboard



# PROGRAMMING LANGUAGE TRENDS

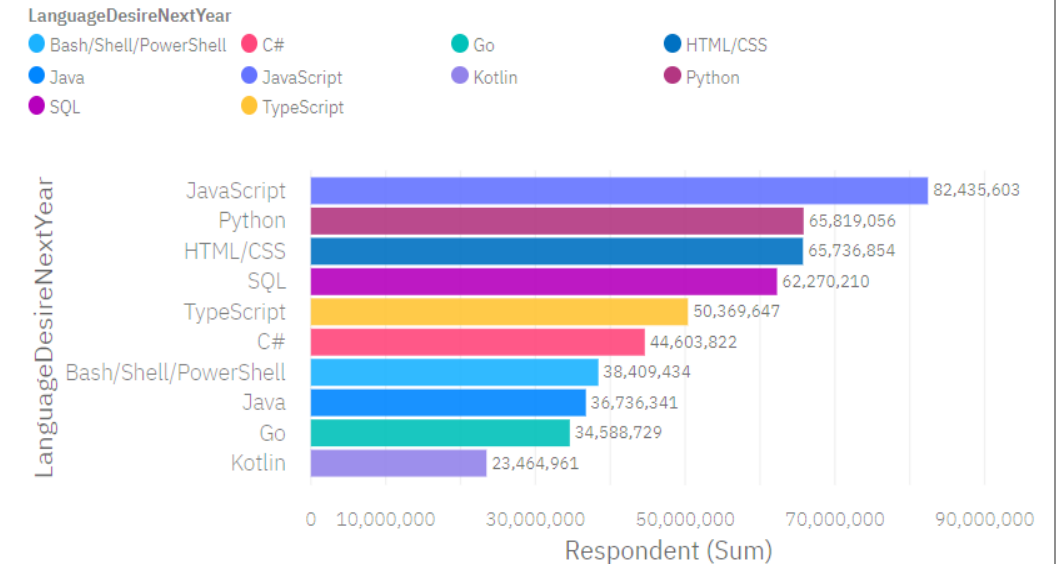
## Current Year

Top 10 Language Worked With



## Next Year

Top 10 Language Desire Next Year



# PROGRAMMING LANGUAGE TRENDS - FINDINGS & IMPLICATIONS

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## Findings

- JavaScript is the top most popular and demanding programming language in the world.
- Python's popularity and demand increased in the future.
- HTML/CSS and SQL have still popularity in the top trending languages.

## Implications

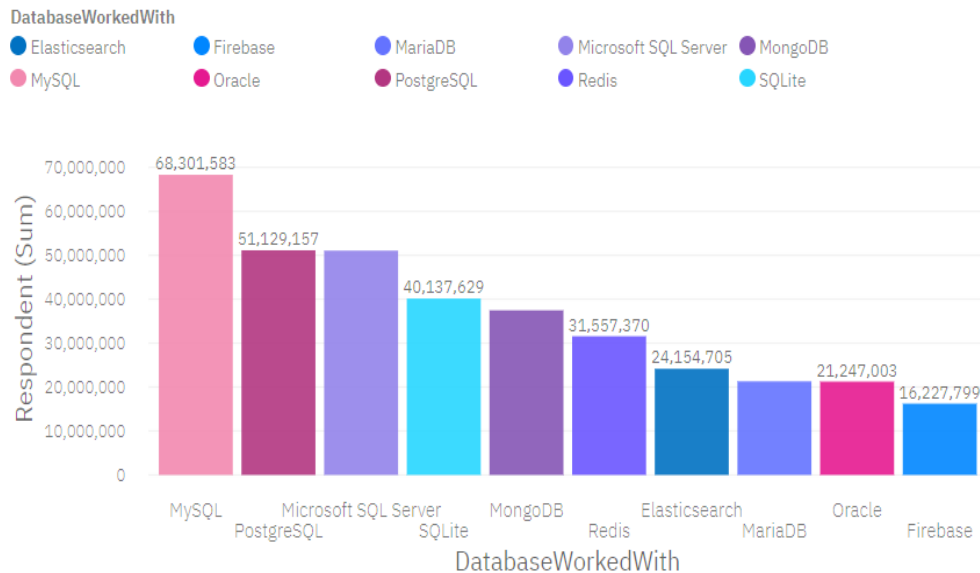
- JavaScript can be called "**Evergreen**" because it is constantly on top of current as well as future trends.
- Python is the new emerging language in the near future and needs to be focused on that.
- C++ and PHP are losing their popularity. It means people are preferred other languages instead.



# DATABASE TRENDS

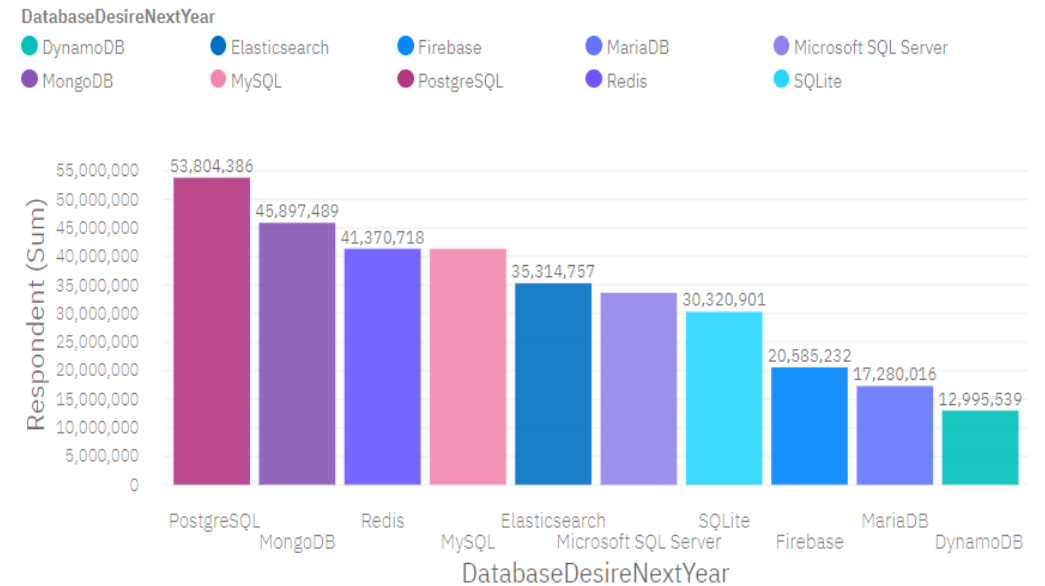
## Current Year

Top 10 Database Worked With



## Next Year

Top 10 Database Desire Next Year



# DATABASE TRENDS - FINDINGS & IMPLICATIONS

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## Findings

- Currently, MySQL is the most popular database but according to the future trends, PostgreSQL will overcome that.
- MySQL, Microsoft SQL Server and SQLite have declining trends whereas MongoDB, Redis and PostgreSQL have progressive trends.
- Oracle will be out of the top 10 list while DynamoDB enter the list.

## Implications

- PostgreSQL will become the most popular and demanding database among others.
- NoSQL databases like MongoDB and Redis becoming popular choices for people to learn.
- Non-Relational (NoSQL) databases are becoming more popular and desired than relational databases according to near future trends.

# DASHBOARD

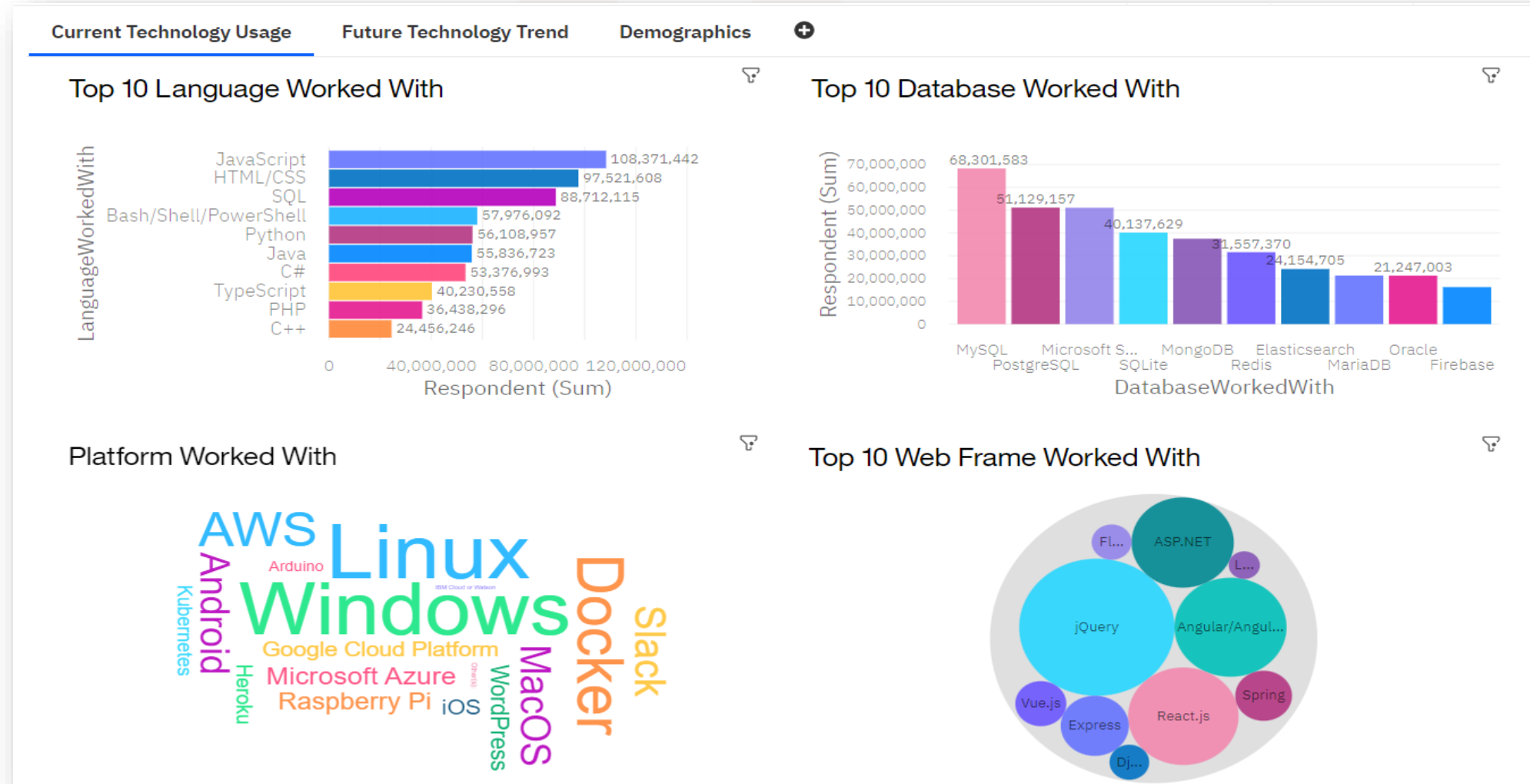
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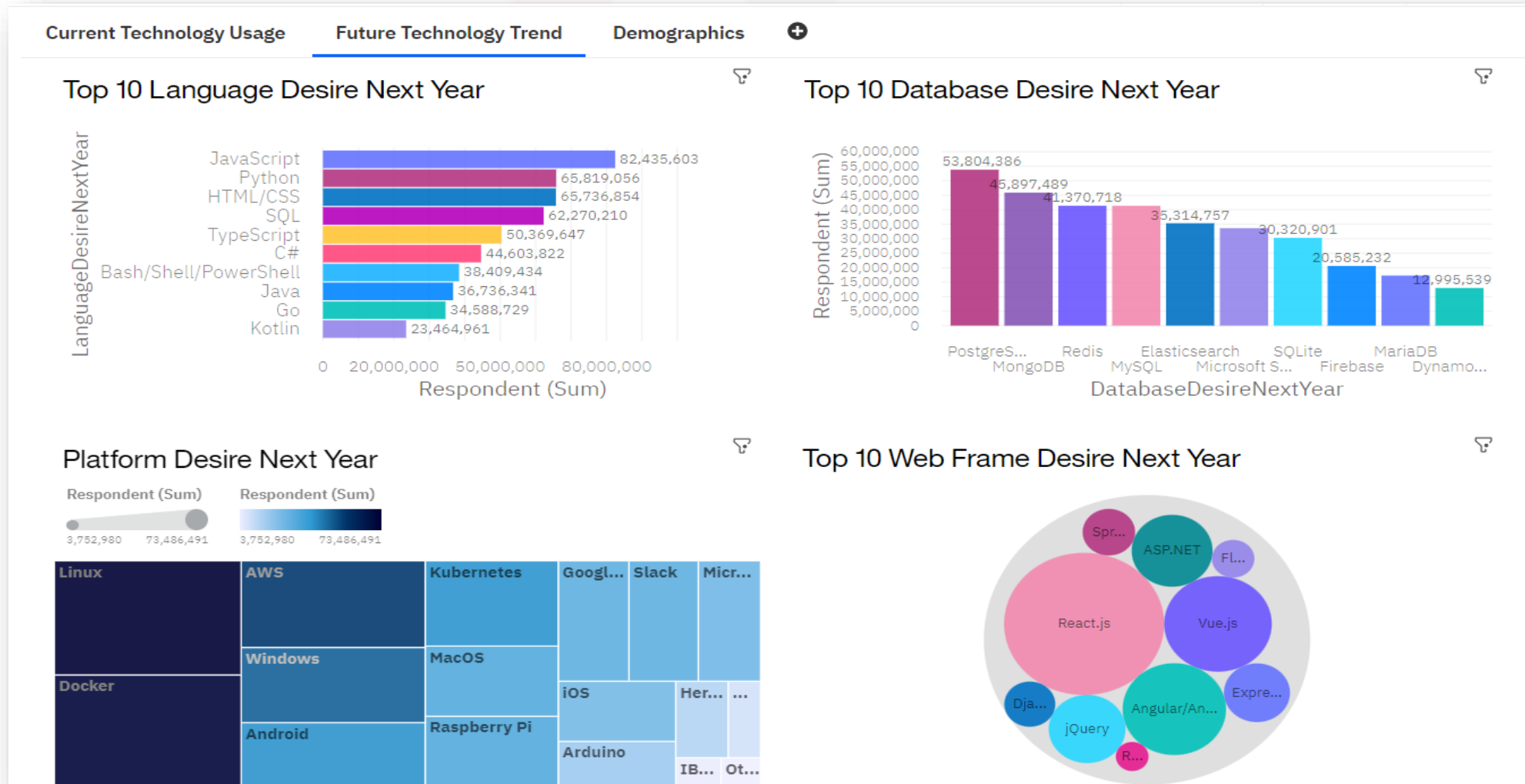
The permanent link of the read-only view of the Cognos dashboard is as follows:

<https://eu-de.datapatform.cloud.ibm.com/dashboards/36047e16-3dcb-4163-a714-e5ab3ba37c31/view/4224e61931a36eef6ef5bde407917e01293f7159b5bb835085827b4907322597a93f40c7c87b4a09d9150336a0b81a0f9b>

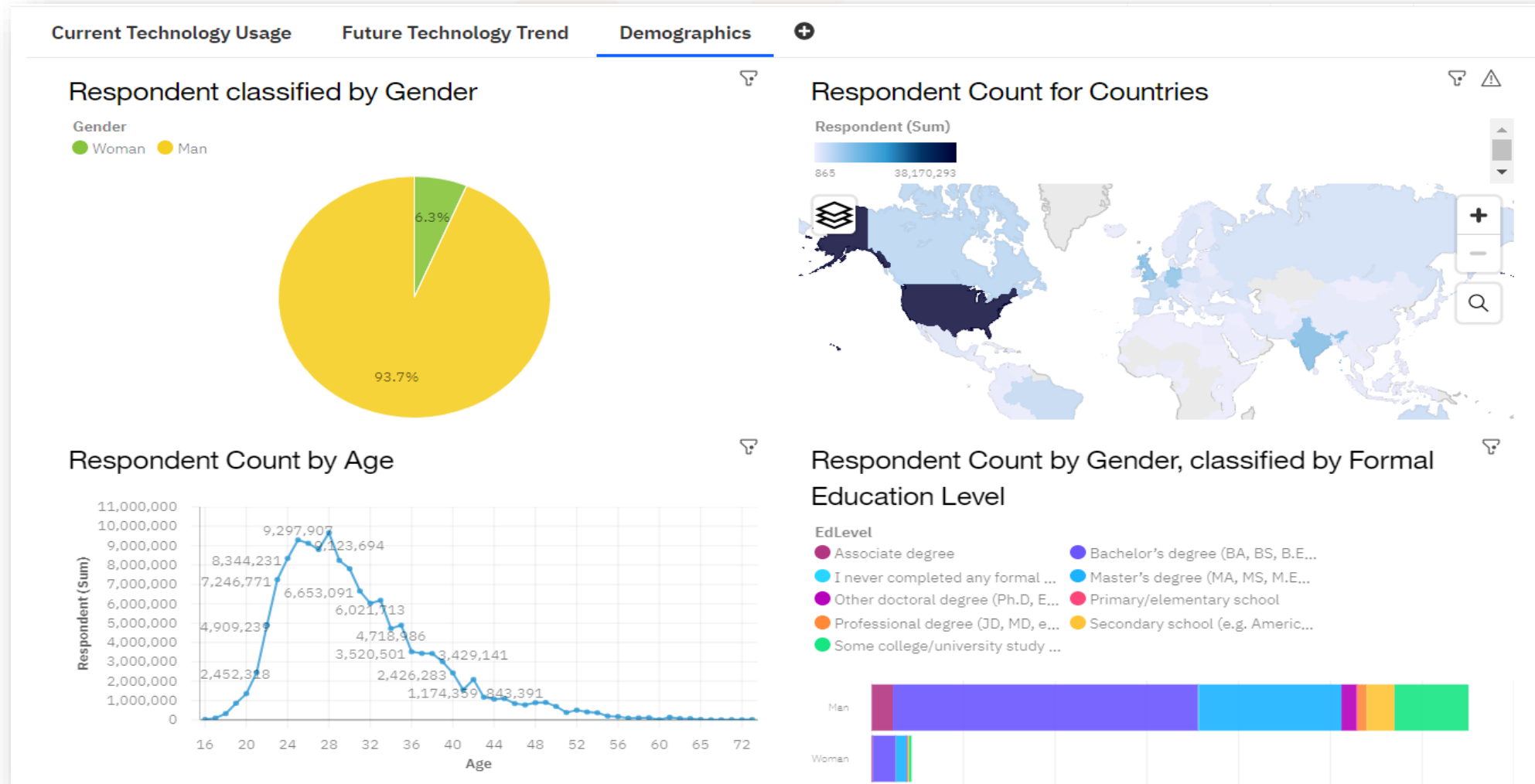
# DASHBOARD – CURRENT TECHNOLOGY USAGE



# DASHBOARD - FUTURE TECHNOLOGY TREND



# DASHBOARD - DEMOGRAPHICS



# DISCUSSION

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- Current usage and future trends of the technology
- Gender and age discrimination in the IT company or organization
- How to give more countries equal opportunity to be exposed to new technologies?

# OVERALL FINDINGS & IMPLICATIONS

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## Findings

- Every year technology trends change rapidly.
- The USA is the top technology country all over the world.
- Gender and Age discrimination are at a very high level.
- The top desired technology for the next year:
  - Language - **JavaScript**
  - Database - **PostgreSQL**
  - Platform - **Linux or Docker**
  - Web Frame - **React.js**

## Implications

- Adopting the latest technology capability is required to keep pace with changing technology and remain competitive.
- More countries should have an equal opportunity to be exposed to new emerging technologies.
- Employment should be given based on skills rather than gender or age.
- One should always keep eyes on the future trending skills or technologies.



# CONCLUSION

Adopting the latest technology capability is required to keep pace with changing technology and remain competitive.

- Top Current Technology Usage
  - Programming Language - **JavaScript**
  - Database – **MySQL**
  - Platform – **Windows**
  - Web Frame – **jQuery**
- Top Future Technology Trend
  - Programming Language - **JavaScript**
  - Database – **PostgreSQL**
  - Platform – **Linux or Docker**
  - Web Frame – **React.js**
- Top Demographics
  - Gender – **Male (93.7%)**
  - Country – **USA**
  - Age range – **22-35**
  - Education Level – **Bachelor's degree**

Every year technology trends change rapidly.



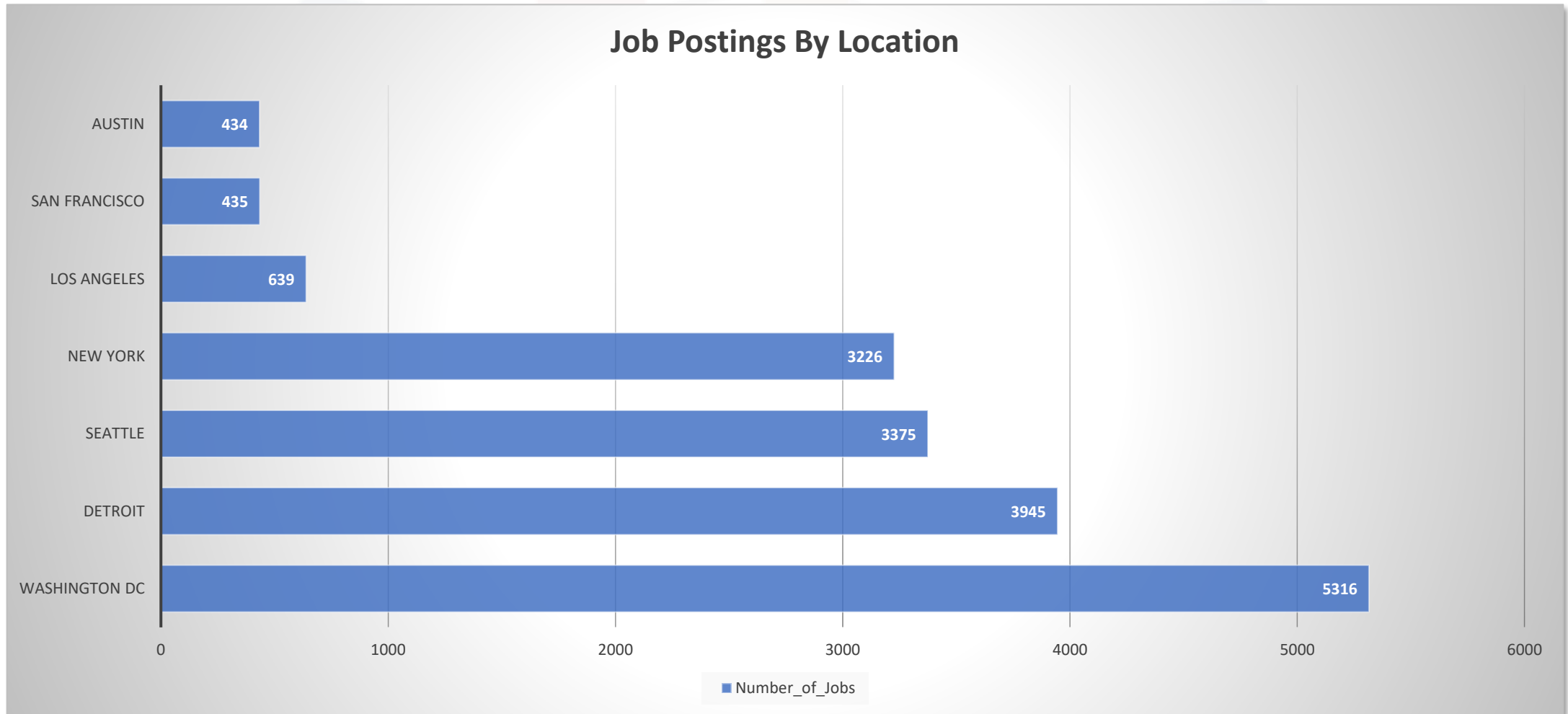
# APPENDIX

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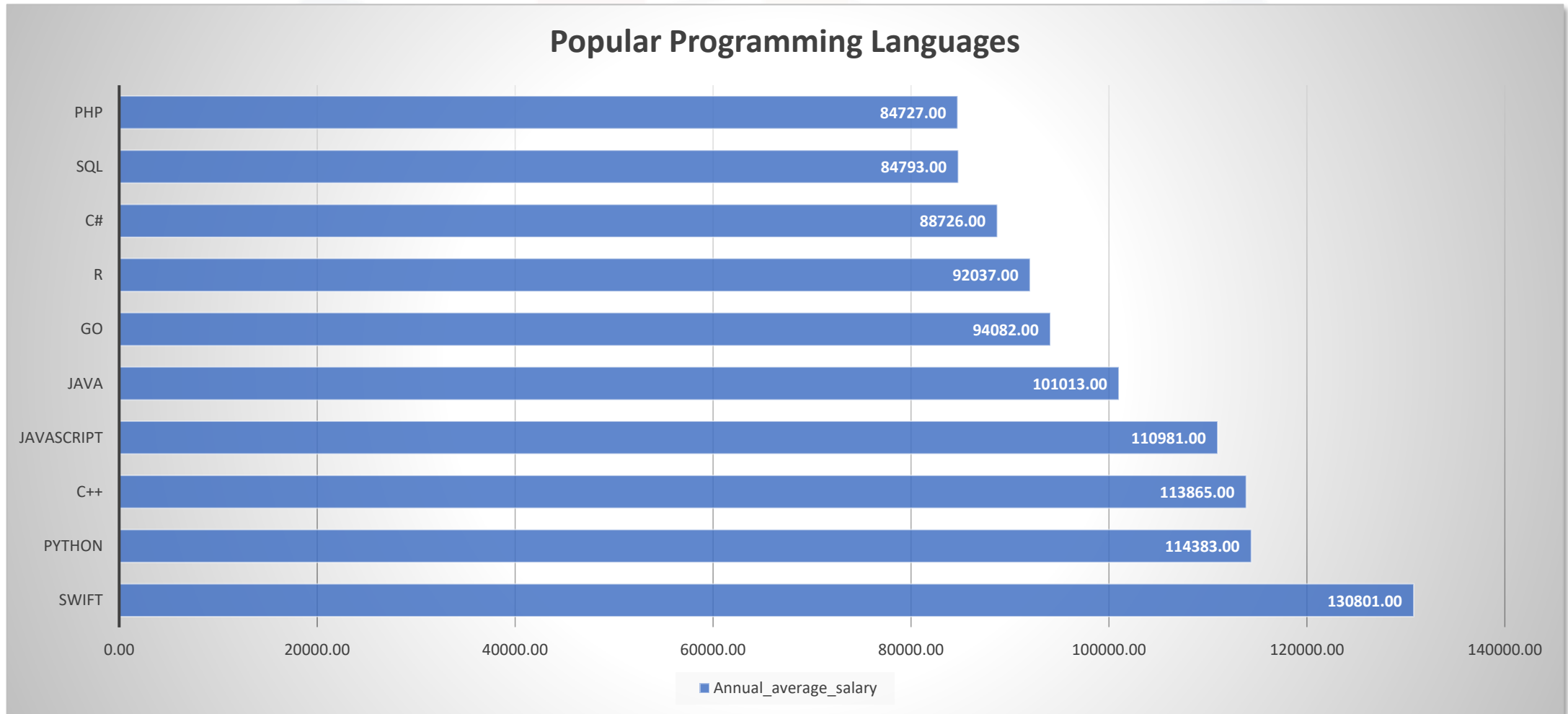


- Stuff (like Notebooks, pdf etc.) related to this project is uploaded on GitHub inside the repository *"IBM Data Analyst Capstone Project"*.
- Go to GitHub Repo - [Click Here](#)
- Go to Dashboard - [Click Here](#)
- Additional charts relevant to this project in the next slides.
  - Data Collection Source - [Click Here](#)

# GITHUB JOB POSTINGS



# POPULAR LANGUAGES

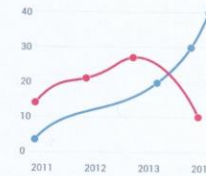




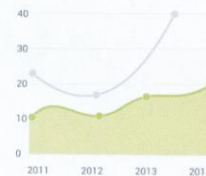
Thank you!

### Morris Charts

Line Chart



Area Chart



Bar Chart



Donut Chart



### Sparkline Charts

Line Chart



Bar Chart



Pie Chart



### Easy Pie Charts

