



# SURVEY ON TECH TRENDS ANALYSIS - IBM CAPSTONE

Val

9<sup>th</sup> Sep 2024

# OUTLINE FOR THIS PRESENTATION

Executive Summary

Introduction

Methodology

Results

- Visualization – Charts
- Dashboard

Discussion

- Findings & Implications

Conclusion



# EXECUTIVE SUMMARY



- The IT field is constantly evolving, leading to the emergence of new and advanced skills.
- This presentation aims to identify technological trends based on their popularity among developers.
- As recent trends have made certain skills obsolete and introduced new ones, it can be challenging to stay current.
- Understanding these trends can provide valuable insights into the future of IT.

The topics discussed would be:

- Current Technology Used
- Future Technology Emerging
- Demographic Information of the Survey Participants

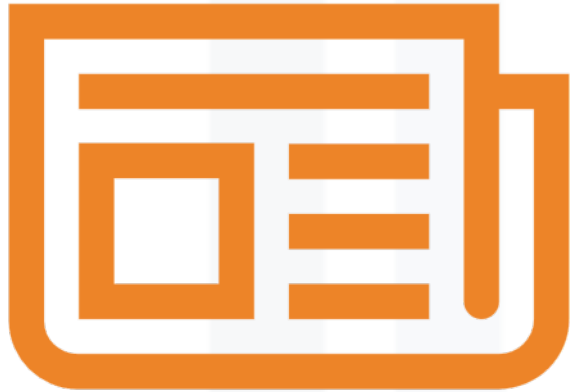
# INTRODUCTION

Respondent
11,398

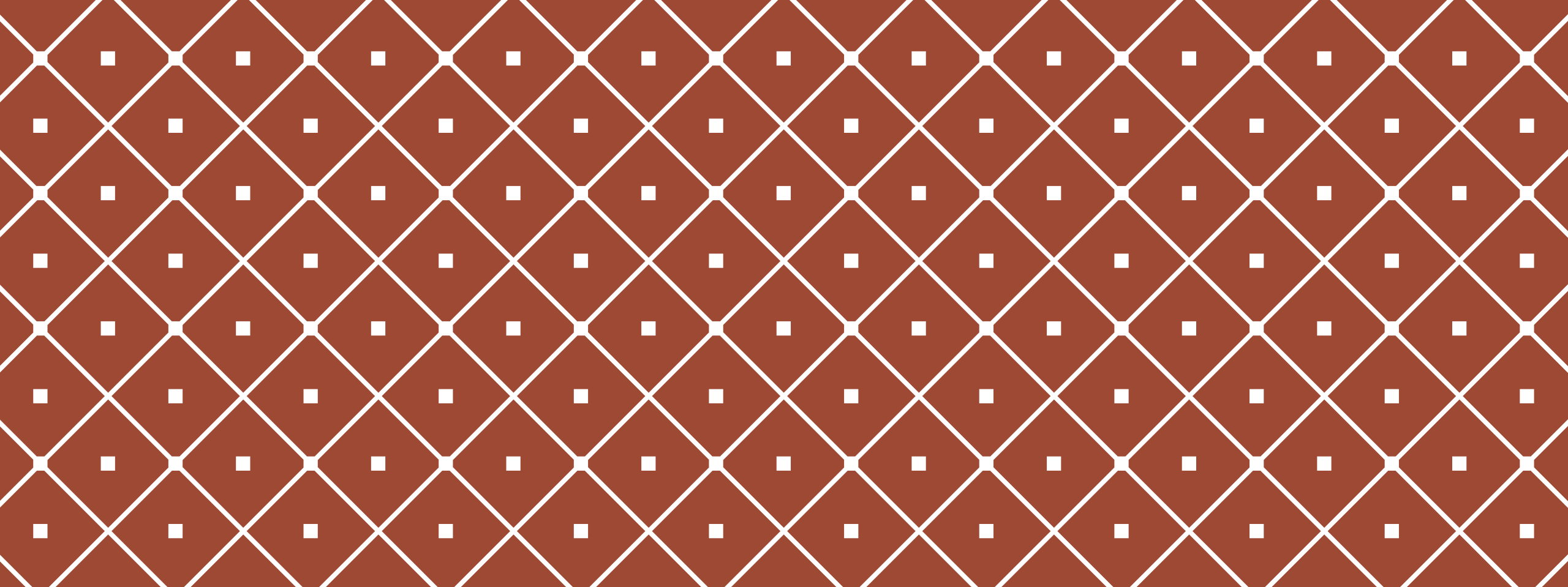


- The survey had around 11k respondents.
- The report would focus on:
  - Programming Languages: The languages frequently utilized by developers.
  - Databases: The types of databases in use.
  - Platforms: The various platforms employed in development.
  - Web Frameworks: The frameworks used for web development.
- The target audience would be stakeholders and businessmen who would need to make data-driven decision making on where to invest and who to hire.

# METHODOLOGY



- The Stack Overflow dataset was utilized for the analysis.
- The data was cleaned through data wrangling processes, including the removal of missing and duplicate values, as well as normalization for precise analysis.
- The analysis involved creating correlation matrices, examining the distribution of specific columns, and removing extreme outliers.
- Data visualization tools were employed for feature selection.
- The final dataset was split into two CSV files, which were then imported into the IBM Cognos platform to create detailed and comprehensive dashboards.
- Three dashboards were developed: "Demographic Information," "Current Technology Usage," and "Future Technology Trends."



# RESULTS

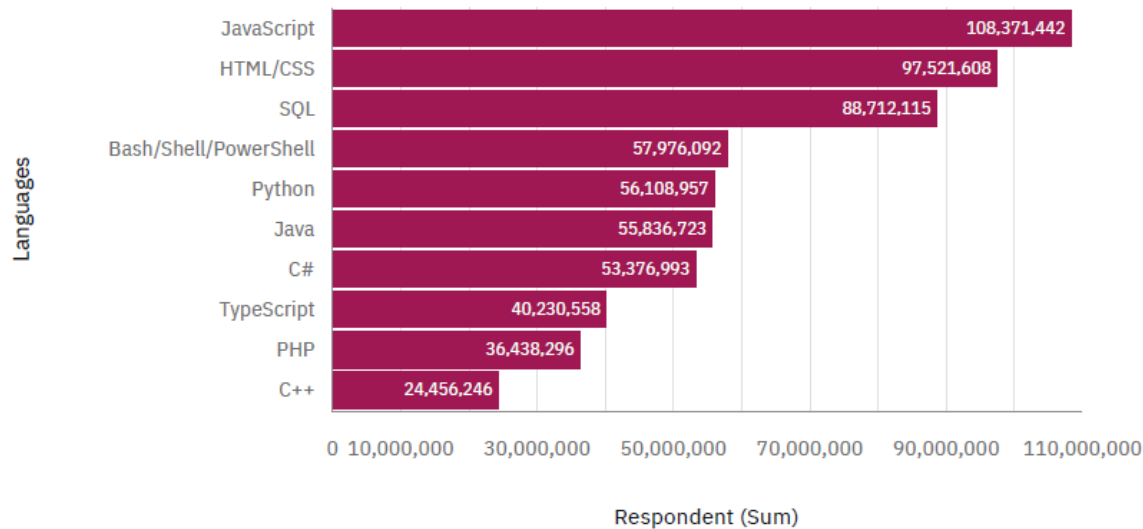
# PROGRAMMING LANGUAGE TRENDS

Current Year

Next Year

Current Technology Usage

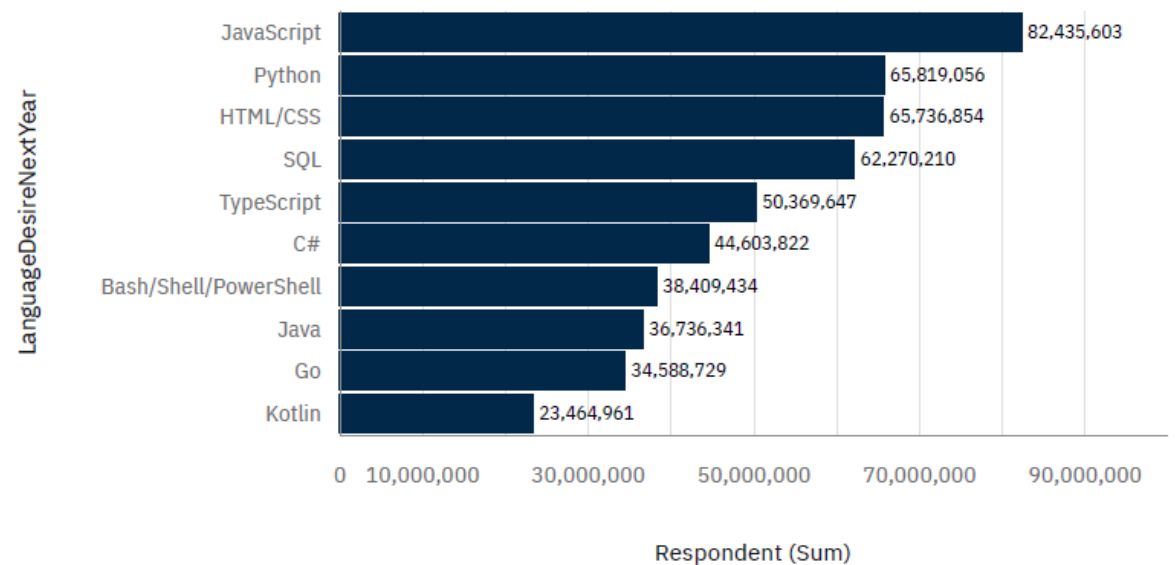
Top 10 Languages by Respondent



Future Technology Trend

1 Top 10 Languages Desired Next Year

5



# PROGRAMMING LANGUAGE TRENDS - FINDINGS & IMPLICATIONS

## Findings

Javascript have been the top presently and in the future too

Languages such as Bash, Java and PHP has become less popular

GO, Kotlin and Type script have moved up the chain

## Implications

Python needs to be focused on as that is emerging soon

New languages such as Go and Kotlin need to be focused on too

Javascript and HTML/CSS has the same hype so need to continue exploring it.

Less focus on Bash/Shell.



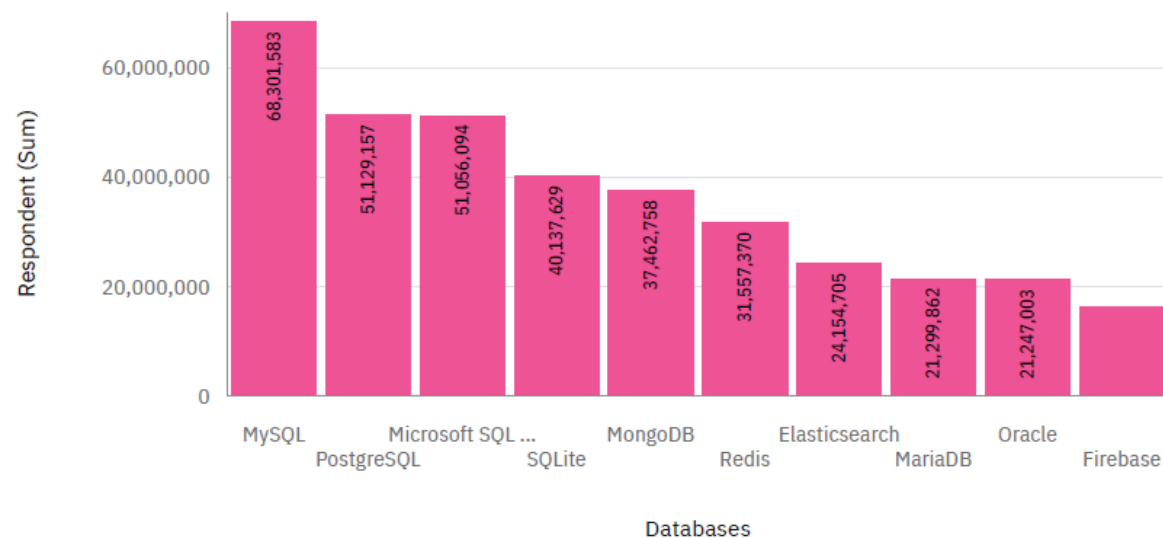
# DATABASE TRENDS

Current Year

Next Year

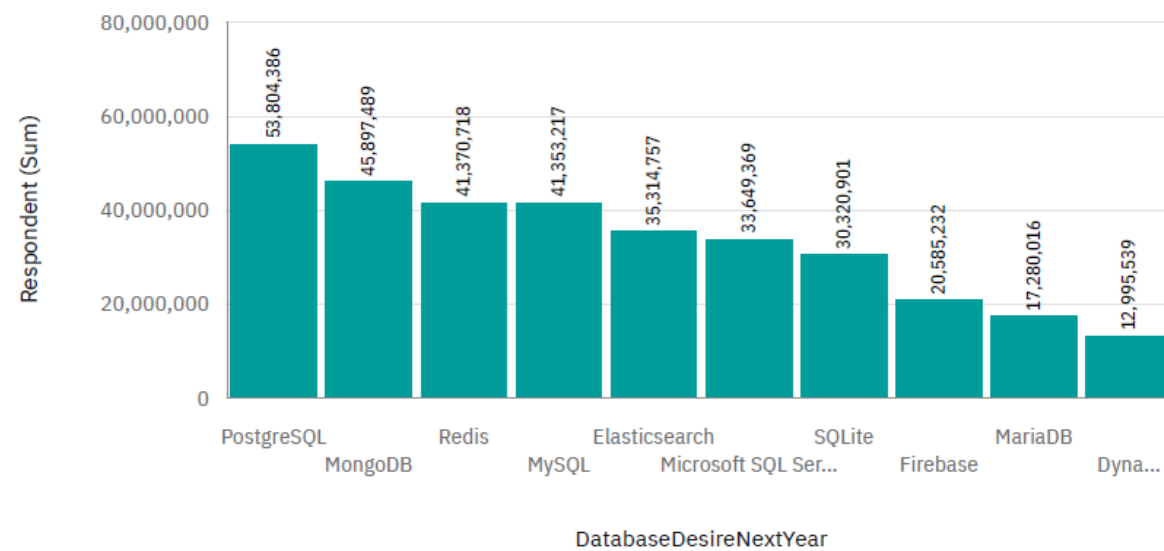
Top 10 Databases by Respondent

2



Top 10 Database Desired Next Year

6



# DATABASE TRENDS - FINDINGS & IMPLICATIONS

## Findings

PostgreSQL remains popular and is more important in the future.

MySQL status is predicted to drop drastically.

MongoDB is predicted to be useful in the future

## Implications

Presently Relational databases are the topic. But in the future, Non-relational Databases are predicted to be popular.

Employ more people to learn PostgreSQL and MongoDB.

Learn more on Redis and Elasticsearch.

# LINK

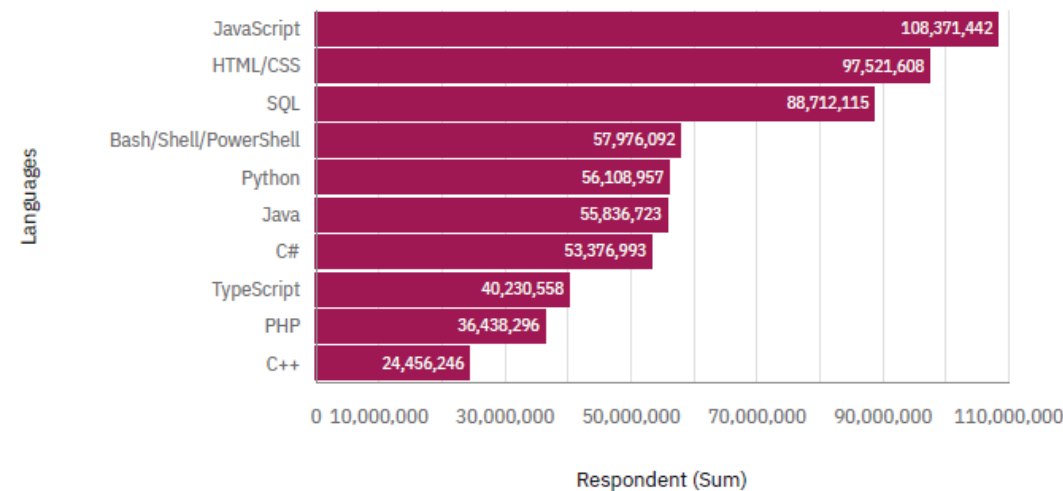


<https://github.com/vallika123/IBM-Cognos-Project/blob/main/Project%20Final.pdf>

# DASHBOARD ON CURRENT TRENDS

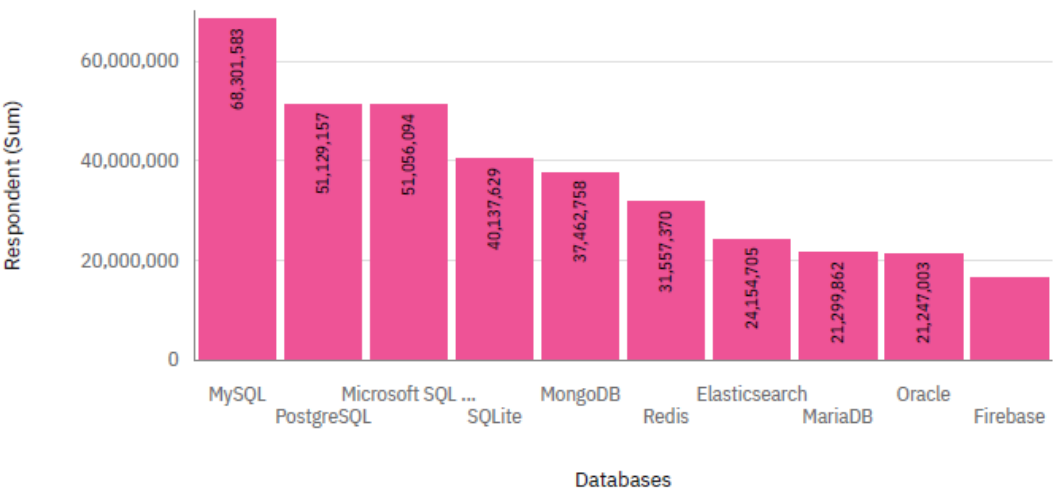
## Current Technology Usage

Top 10 Languages by Respondent



1 Top 10 Databases by Respondent

2

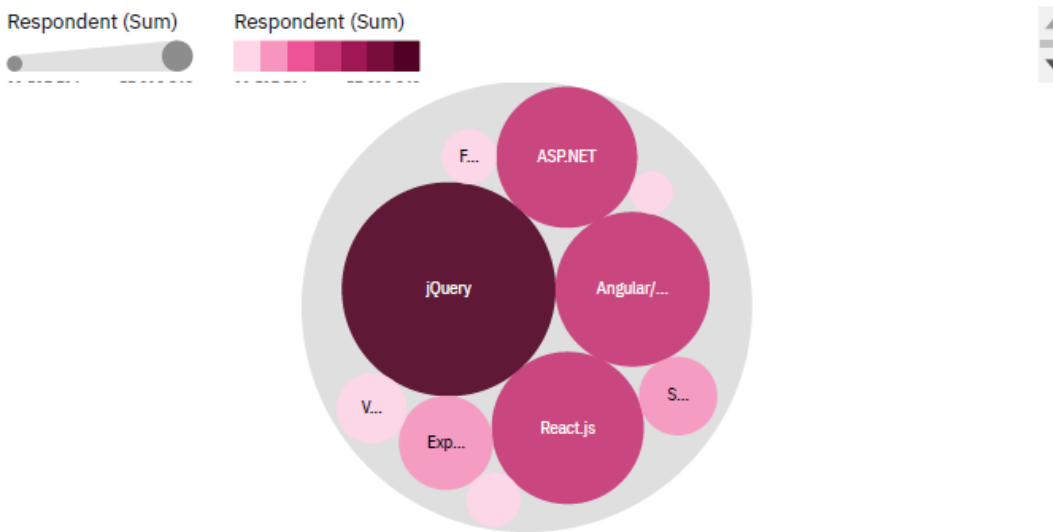


PlatformWorkedWith sized by Respondent



3 Top 10 WebFrameWorkedWith

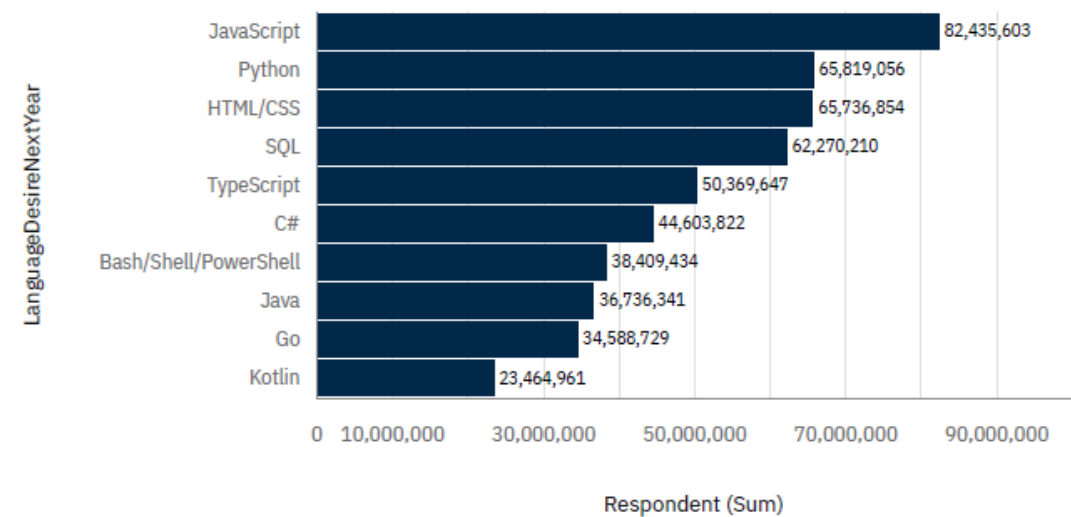
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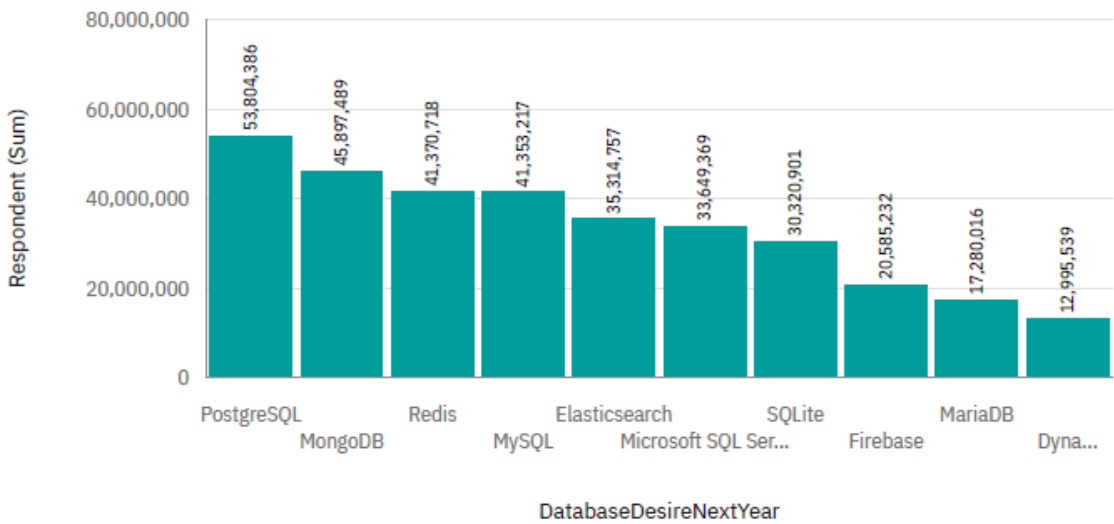
# DASHBOARD ON FUTURE TRENDS

## Future Technology Trend

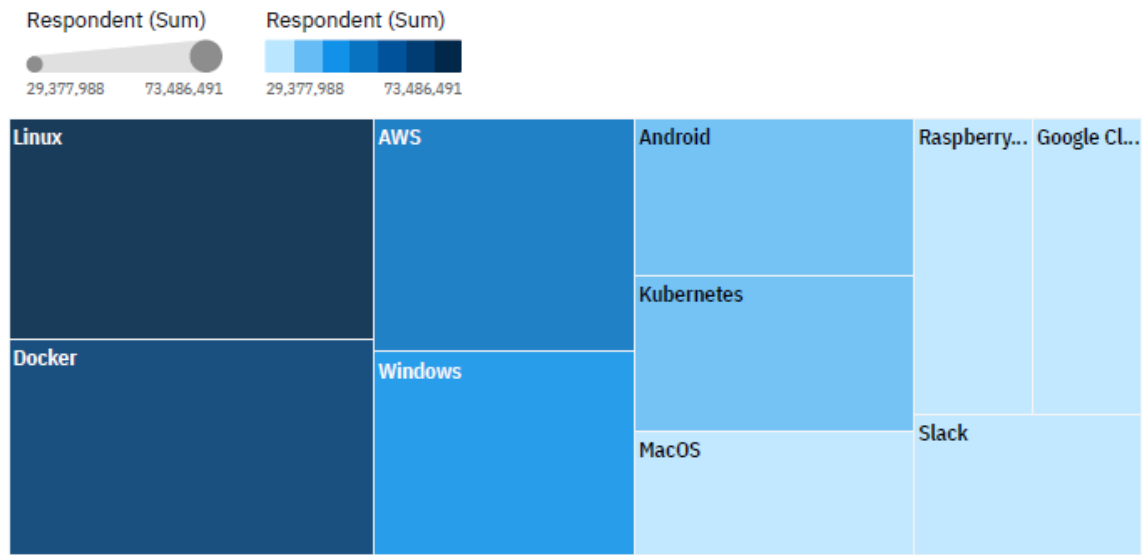
Top 10 Languages Desired Next Year



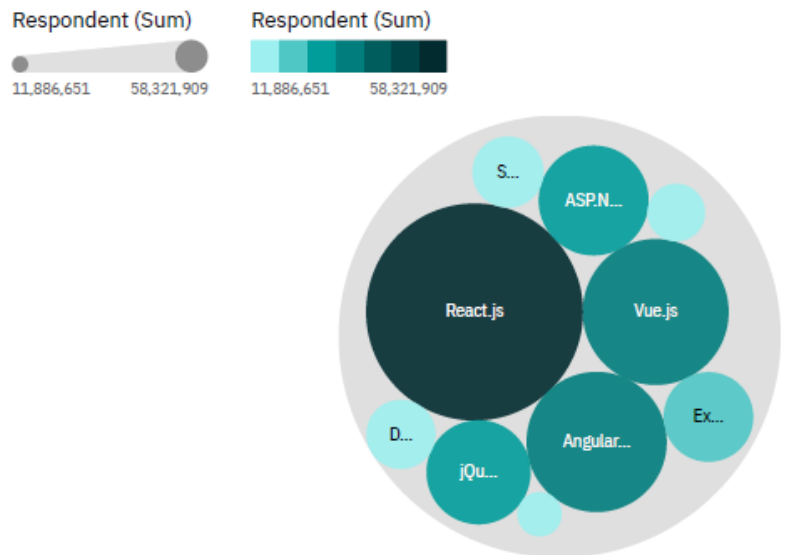
5 Top 10 Database Desired Next Year



Top 10 Platforms Desired Next Year based on the Respondents



7 Top 10 Web Frames Desired for Next Year

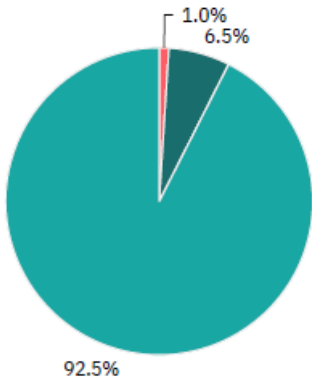


# DASHBOARD ON DEMOGRAPHICS

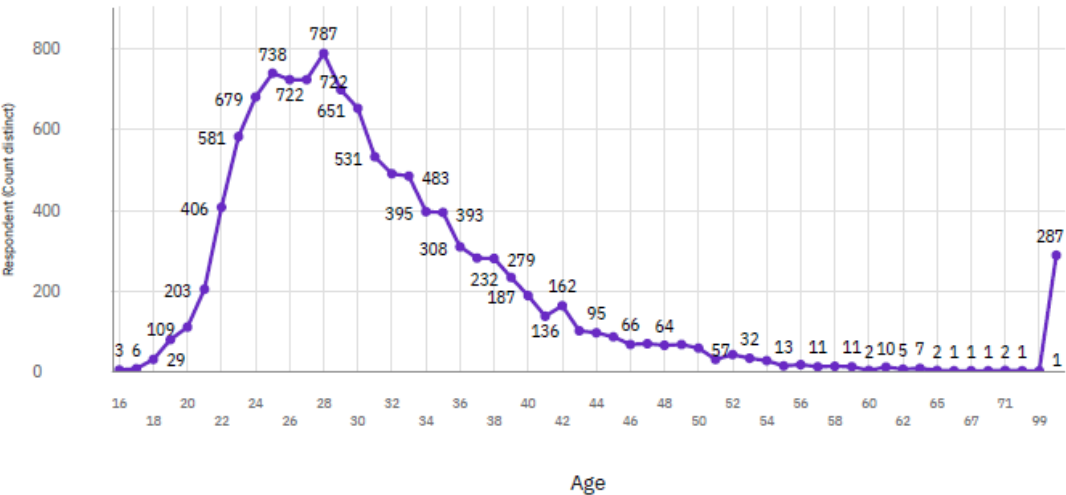
## Demographics

Pie Chart based on the Gender Distribution

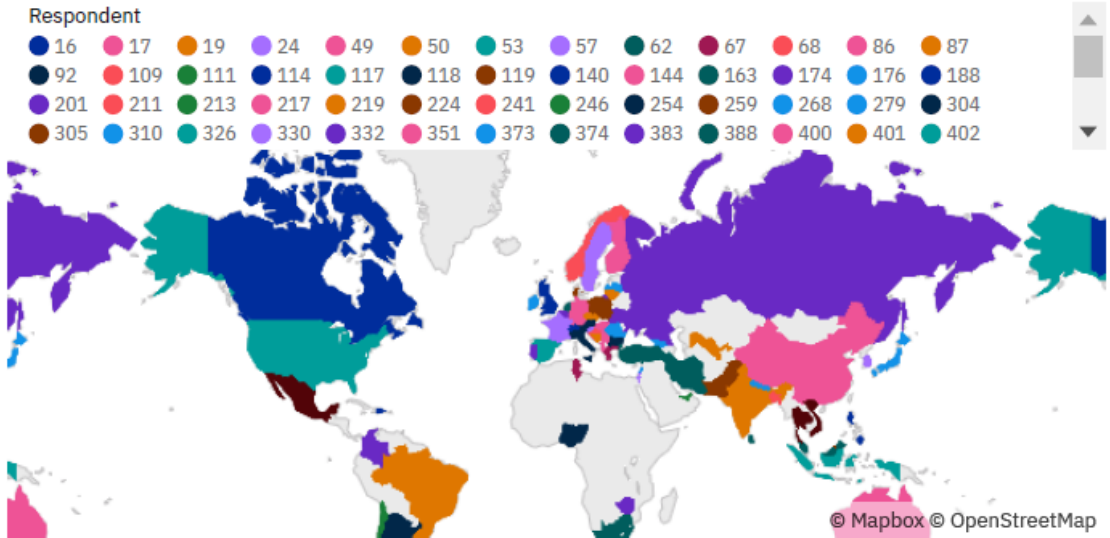
Gender (Group)  
● Group ● Woman ● Man



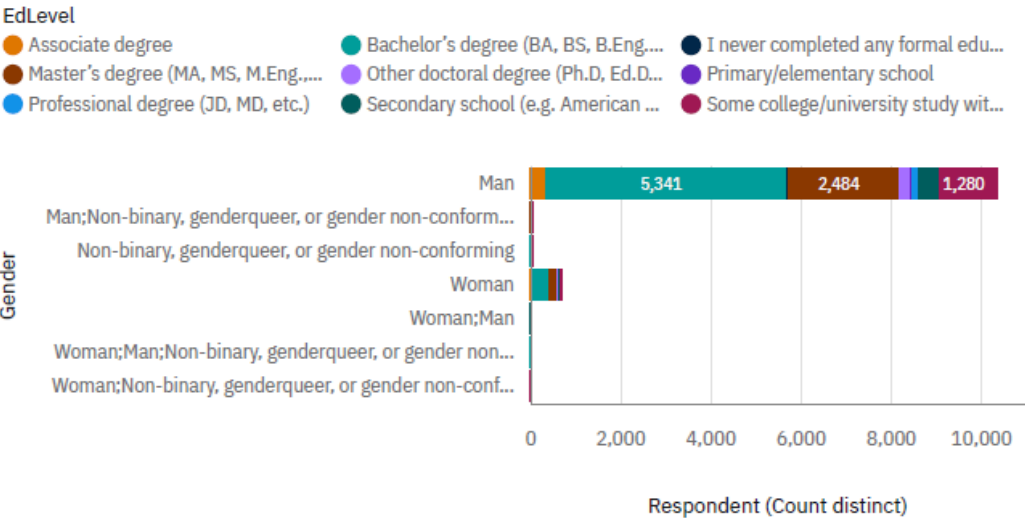
Age Distribution of the Respondents

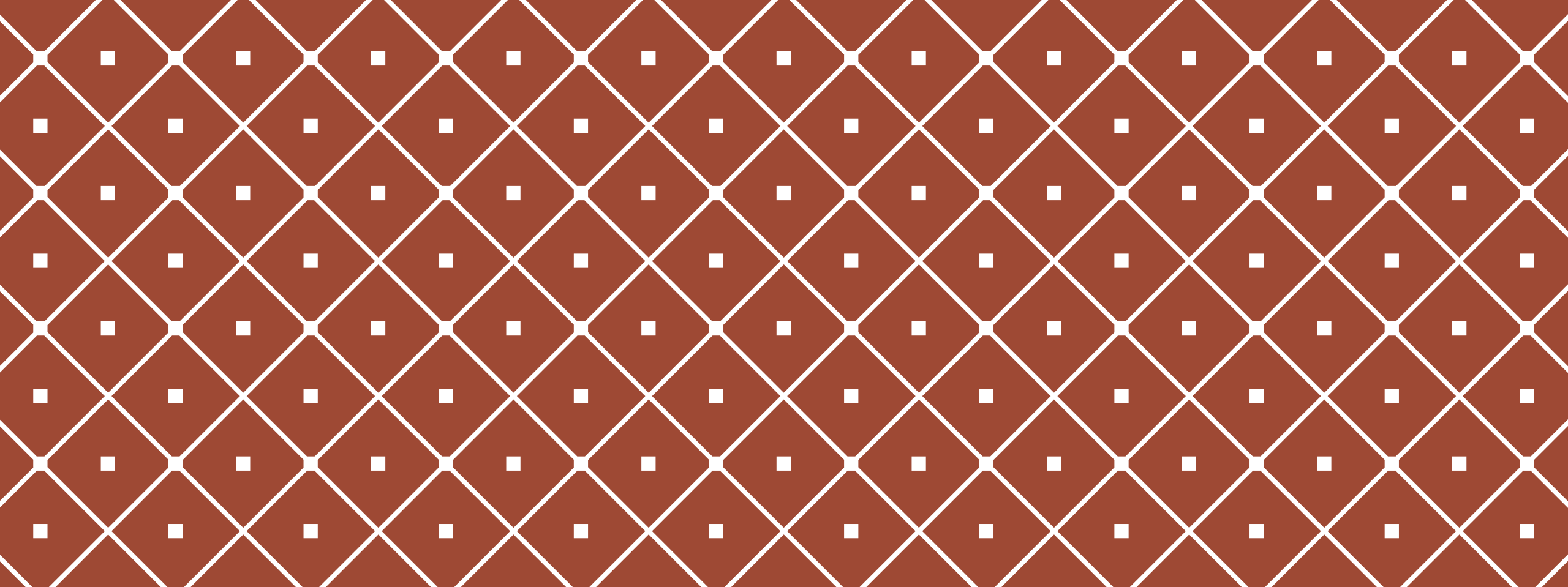


9 Respondents reside in these countries



Respondent Count by Gender, and classified by Formal Education Level.





# DISCUSSION

# OVERALL FINDINGS & IMPLICATIONS

## Findings

Programming Languages: Javascript remains in the top. TypeScript is gaining interest too.

Databases : Non-relational databases such as MondoDB are gaining popularity. PostgreSQL is at the top. Redis, Elasticsearch need to focused too.

Platforms : Linus and Dockers are the main focus for the future.

WebFrames: Vue.js and React.js are growing. While JQuery have dropped drastically.

## Implications

Non-relational databases need to studied on.

Redis, Elasticsearch need to focused too.

In platforms, Windows have dropped drastically, so Linux would be a better option.



# CONCLUSION



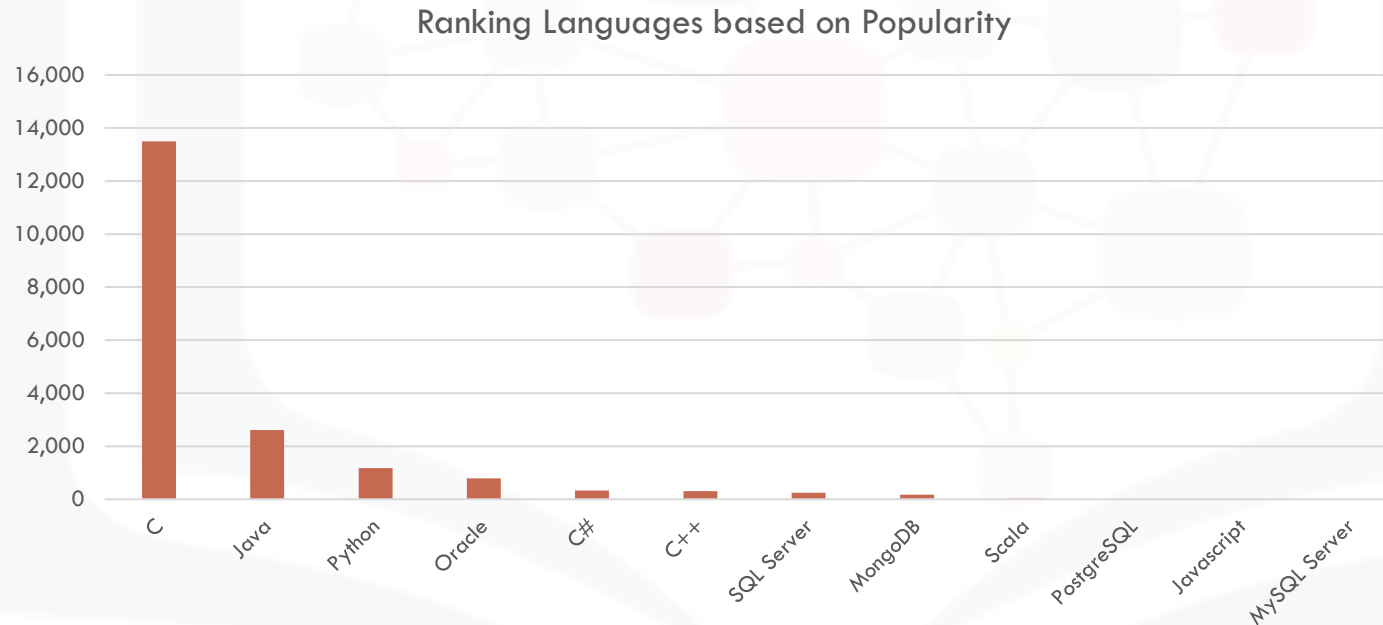
Focusing by investing time and money on the future trends can make you more valuable to the market.

Updating our skill-set is the only way to keep up with the future IT advances

Being aware is the first step to change for the better.

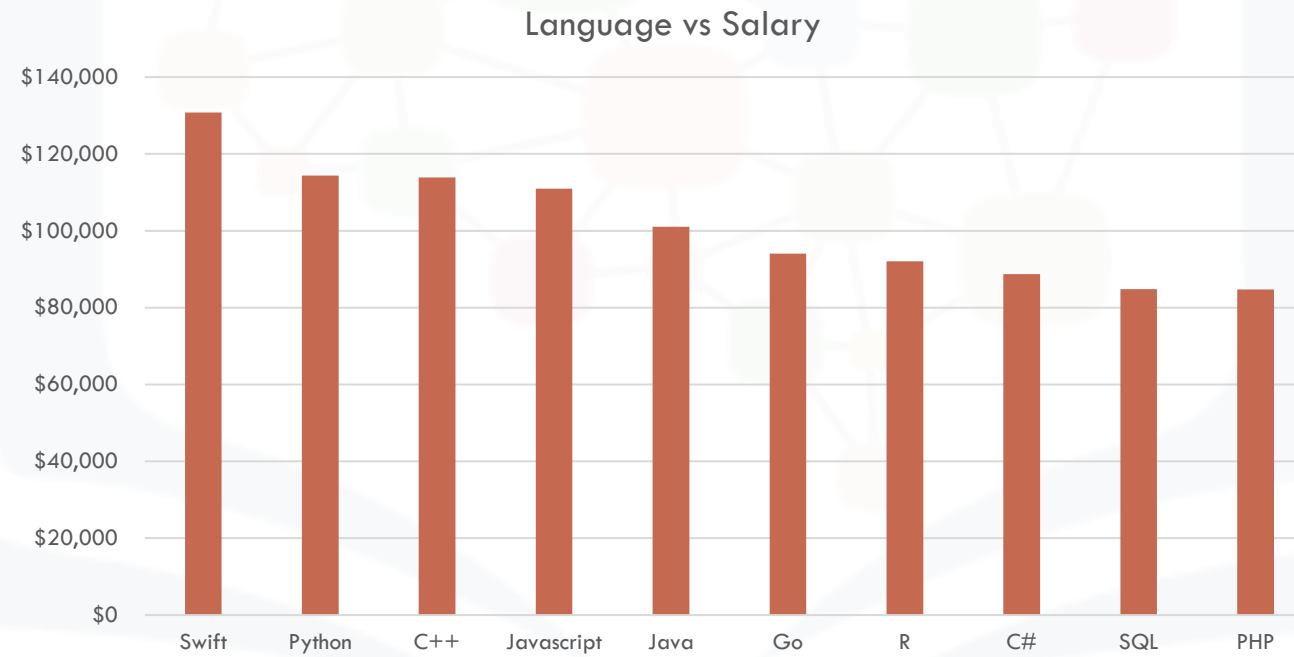
# JOB POSTINGS

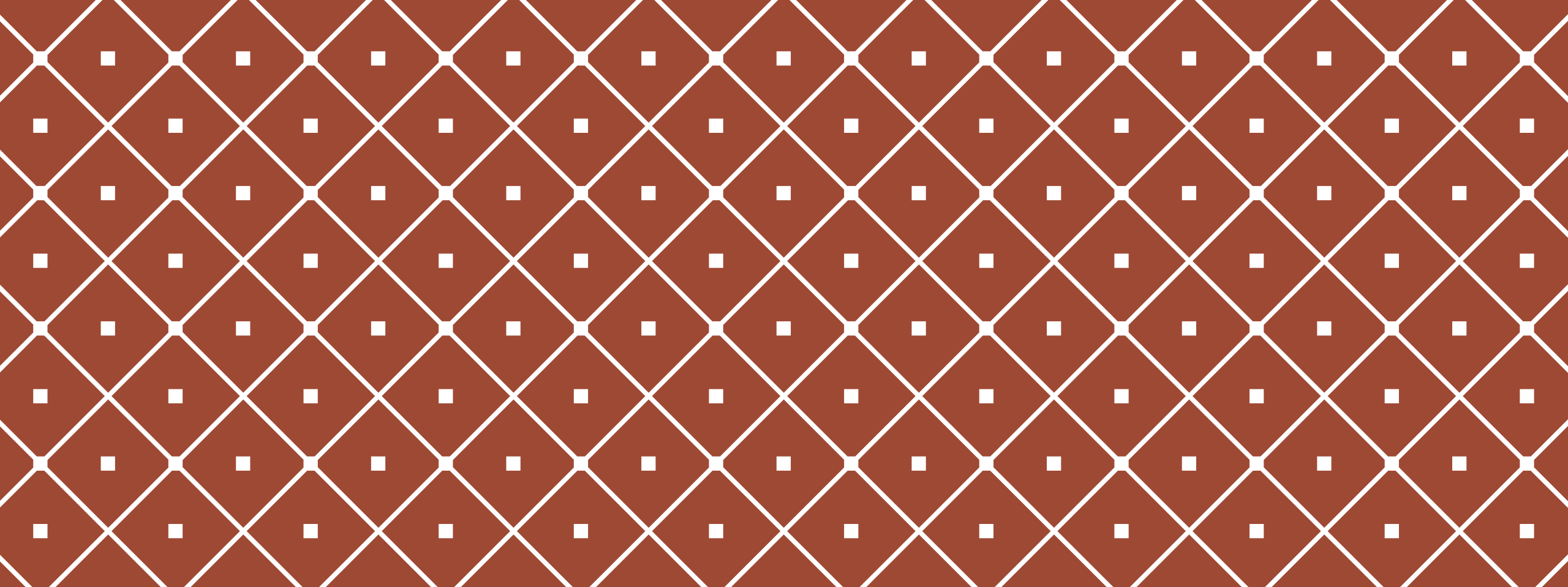
In Module 1 you have collected the job posting data using Job API in a file named “job-postings.xlsx”. Present that data using a bar chart here. Order the bar chart in the descending order of the number of job postings.



# 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.





THANK YOU! KEEP SMILING 😊