



# Employment trends in the Tech sector

SARA SANCHEZ SANTIAGO

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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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- Introduction
  - Methodology
  - Results
- Programming Language Trends
- Database Trends
- Dashboards
  - Current Technology Usage
  - Future Technology Trends
  - Demography
- Discussion
- Overall Findings & Implications
- Conclusion
- Appendix

# INTRODUCTION

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- A popular website for developers, Stack Overflow, conducted an online survey of 90,000 software professionals across the world.
- Three patterns were analyzed based on these responses:
  - the current overall picture,
  - what participants want in the near future, and
  - the demographics of the responders.
- Some trends have simply been confirmed, but others will make us build a future-proof technology department.

# METHODOLOGY

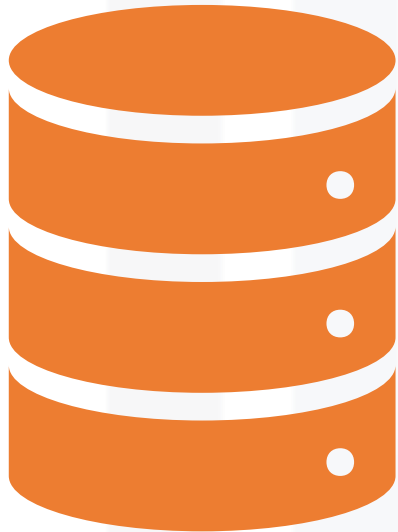
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- **ODbL:** <https://stackoverflow.blog/2019/04/09/the-2019-stack-overflow-developer-survey-results-are-in/>
- Collecting data using APIs and webscraping
- Exploring the data set
  - Data wrangling
  - Finding and removing duplicates
  - Finding and imputing missing values
  - Normalizing data
- Finding distribution
  - Handling outliers
  - Observation correlations
- Visualizing data
  - Distribution: Histograms, Box plots
  - Relationship: Scatter plots, Bubble plots
  - Composition: Pie charts, Stacked charts
  - Comparison: Line charts, Bar charts

# RESULTS

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- First, we will look at which programming languages are in use today compared to which ones will be in vogue tomorrow.
- Second, correlated with the above, we will observe which databases will be enhanced and which will fall into disuse.
- Third, we will have an overview of the leading and upcoming technologies.
- Fourth and finally, we will take a brief look at the demographics of the workforce employed in the tech sector.

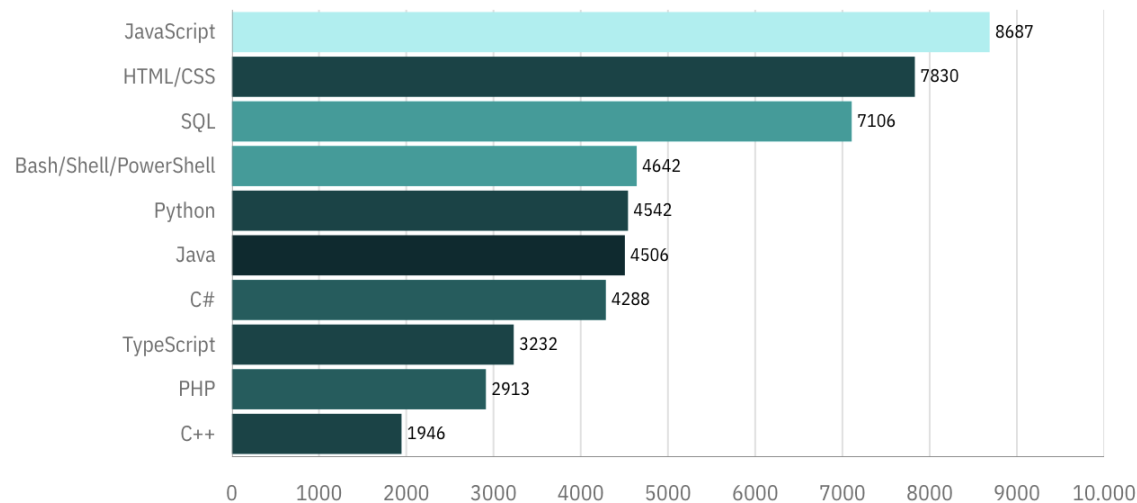
# PROGRAMMING LANGUAGE TRENDS

Current Year

Top 10 Languages Worked With



Language worked with



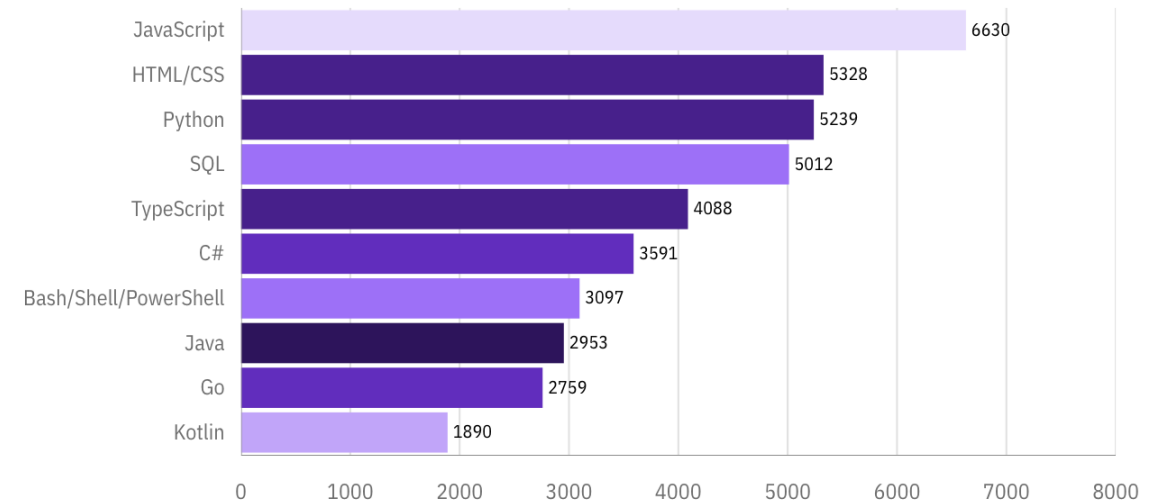
Number of users

Next Year

Top 10 Languages Desired Next Year



Language desired



Number of users

# PROGRAMMING LANGUAGE TRENDS

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## FINDINGS

- JavaScript and HTML/CSS will continue to lead the market.
- Python and TypeScript will quickly move up the rankings.
- PHP and C++ will be replaced by Go and Kotlin.

## IMPLICATIONS

- Today's most widely used technologies are difficult to replace.
- There are several high-level languages that tend to displace traditional low-level languages.

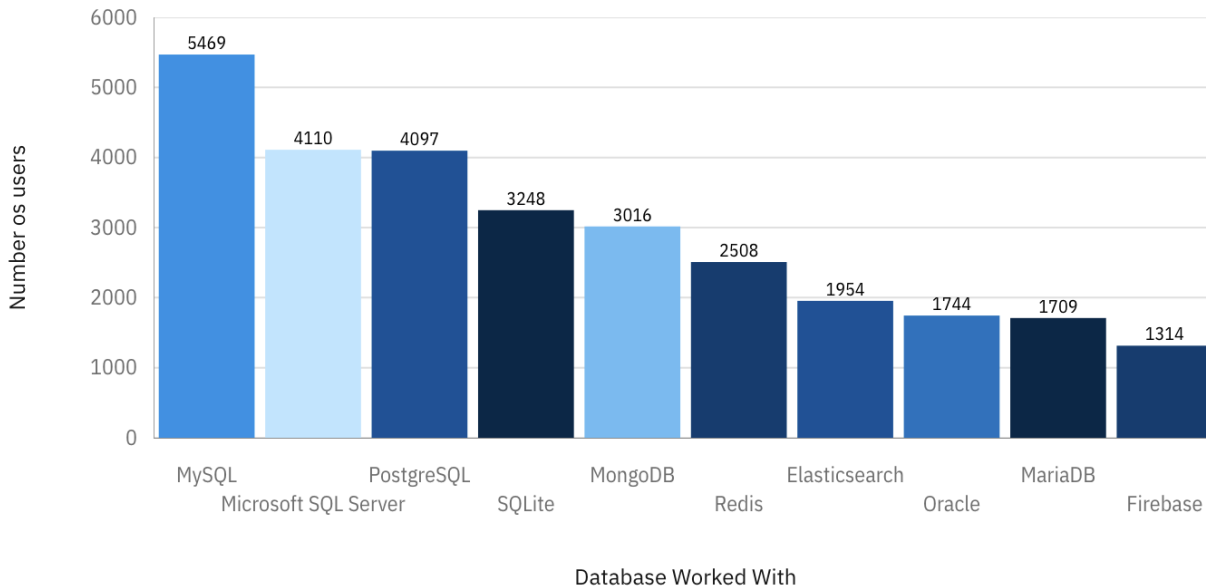


# DATABASE TRENDS

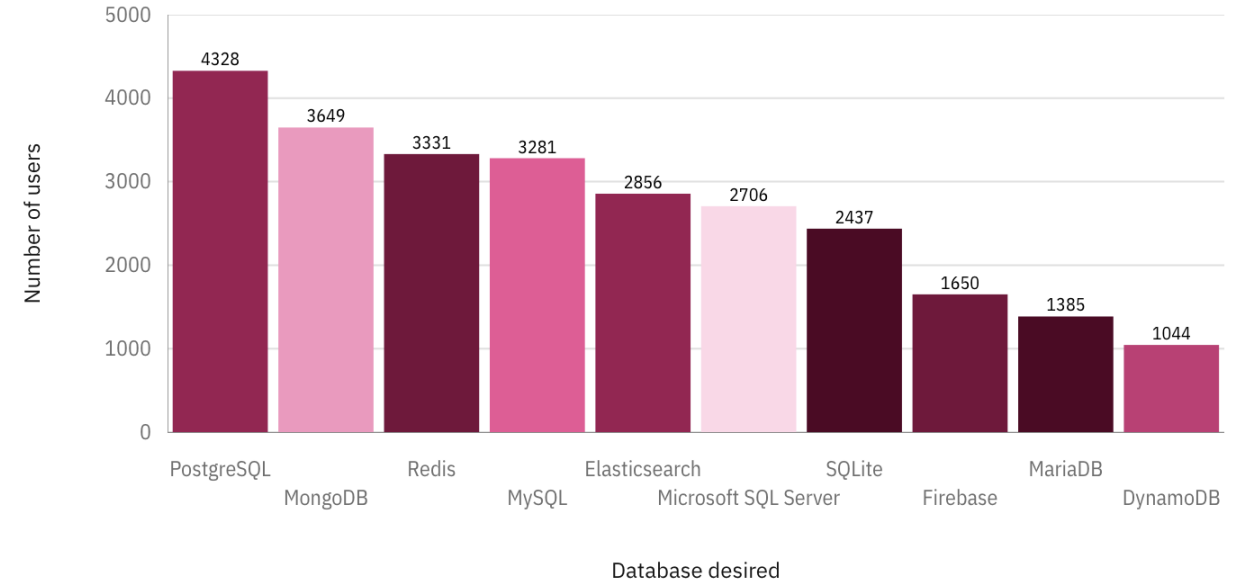
Current Year

Next Year

Top 10 Databases Worked With



Top 10 Database Desire Next Year



# DATABASE TRENDS

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## FINDINGS

- SQL-based databases currently dominate the market.
- MongoDB, Redis and Elasticsearch are going to gain a lot of strength and position themselves in the lead.
- Oracle tends to disappear but others such as DynamoDB will emerge.

## IMPLICATIONS

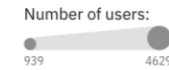
- The technological change in databases is going to be very accelerated, we must be prepared to be less dependent on the current big players.
- MySQL will lose a lot of market share but it will be evenly distributed.

# DASHBOARD

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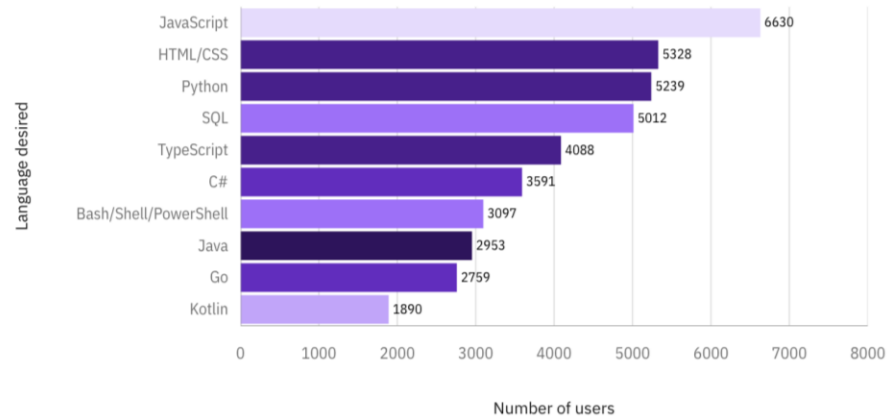


<https://github.com/SaraSanSan/DASHBOARD> Capst  
[oneProject IBMDataAnalyst/](#)

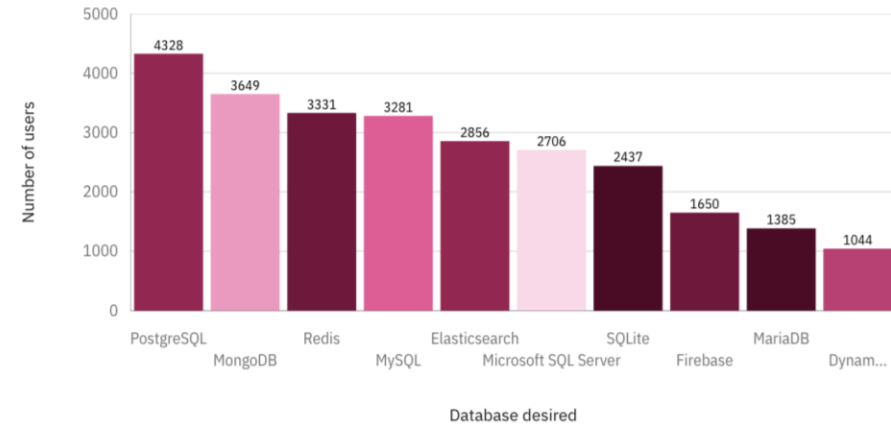
 

# FUTURE TECHNOLOGY TREND

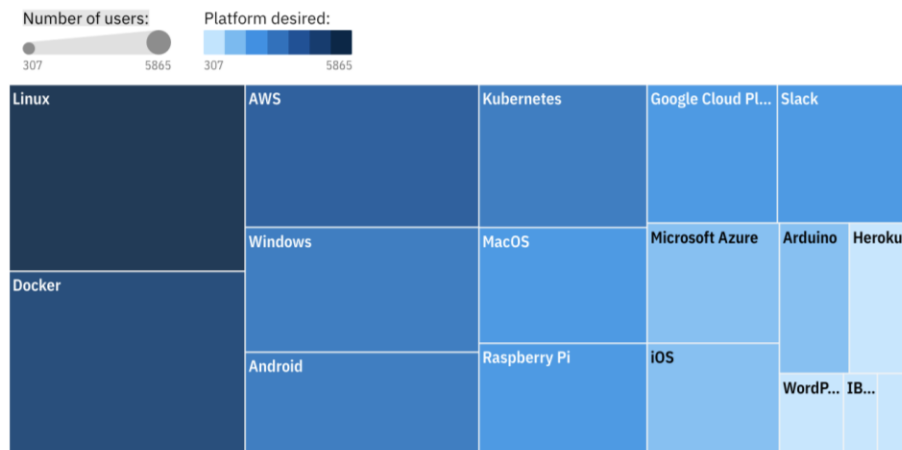
## Top 10 Languages Desired Next Year



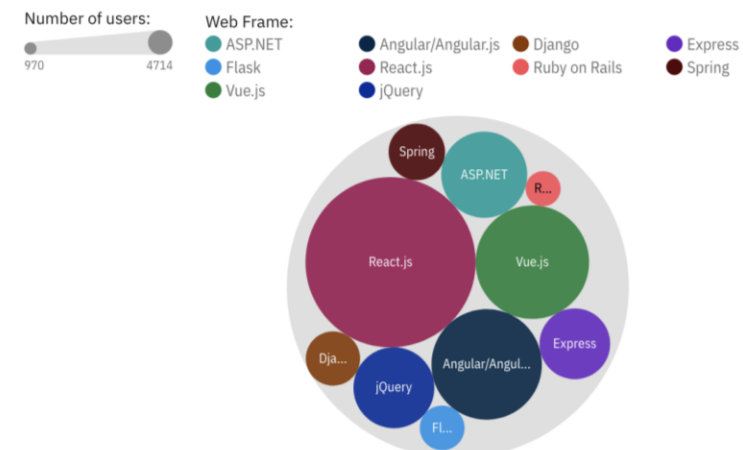
## Top 10 Database Desire Next Year



## Platforms Desired Next Year



## Top 10 Web Frames Desire Next Year



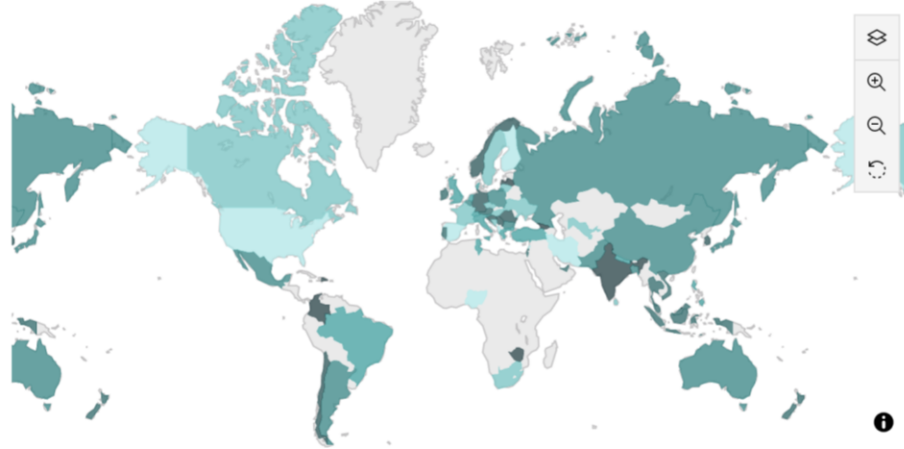
# DEMOGRAPHICS

Respondent classified by Gender

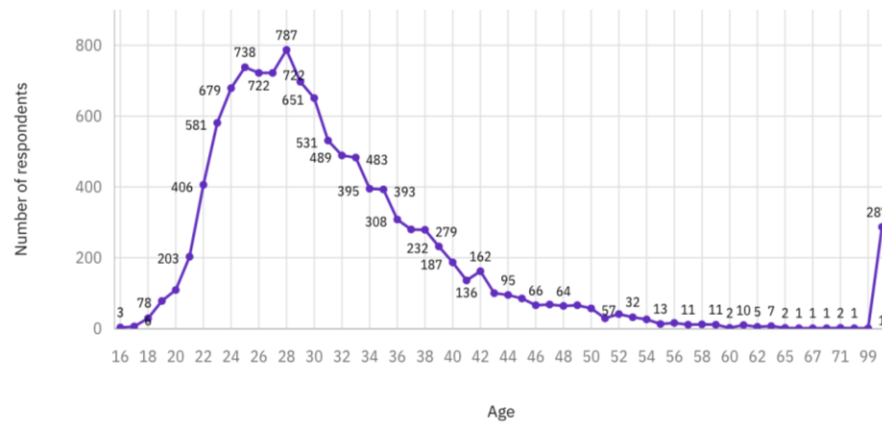
Gender  
● Woman ● Man



Respondent Count for Countries

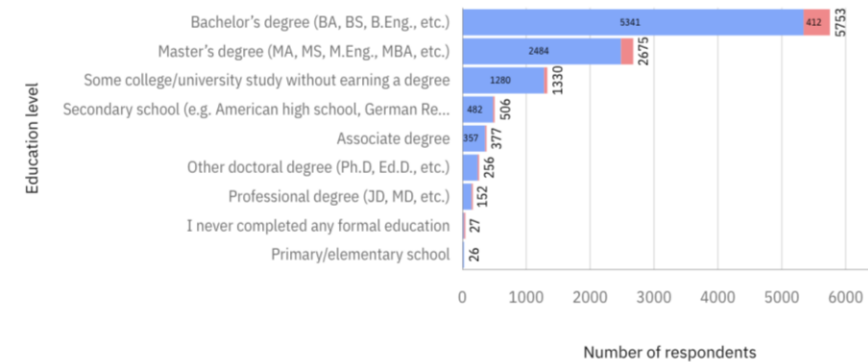


Respondent Count by Age



Respondent Count by Gender, classified by Formal Education Level

Gender  
● Man ● Woman



# DISCUSSION

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- Other points to highlight in order to understand the context of these trends are:
  - Linux will continue to lead the market, but its strongest competitor will move from Windows to Docker.
  - In Web Frames, the protagonist will be React.js followed by vue.js. The biggest drop in usage will be iQuery.
  - Employees in the tech sector are 94% male, around 28 years old and have a university degree. The continent with the fewest professionals is Africa.

# OVERALL FINDINGS & IMPLICATIONS

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## FINDINGS

- There are many emerging technologies in the sector, which coincides with the young character of its professionals.
- The certain monopoly enjoyed by the current market leaders will be weakened by a distribution of their users among the other platforms.

## IMPLICATIONS

- It is obvious that the rise of new technologies, such as AI, etc., are giving relevance to emerging coding tools.
- We can observe a polarization of the workforce both in terms of location and gender, we must reflect on the barriers to entry into the sector.



# CONCLUSION

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- The tools used to date must continue to be maintained despite the fact that other technologies will develop new functionalities and possibilities. Some examples:
  - Remain: JavaScript, Linux
  - Ascend: MongoDB, React.js
  - Drop: C++, Windows
- There is plenty of room for growth for tech professionals, both in quality and quantity:
  - For most still have their entire careers ahead of them; and
  - There is a large gender gap to be filled by women interested in the sector.

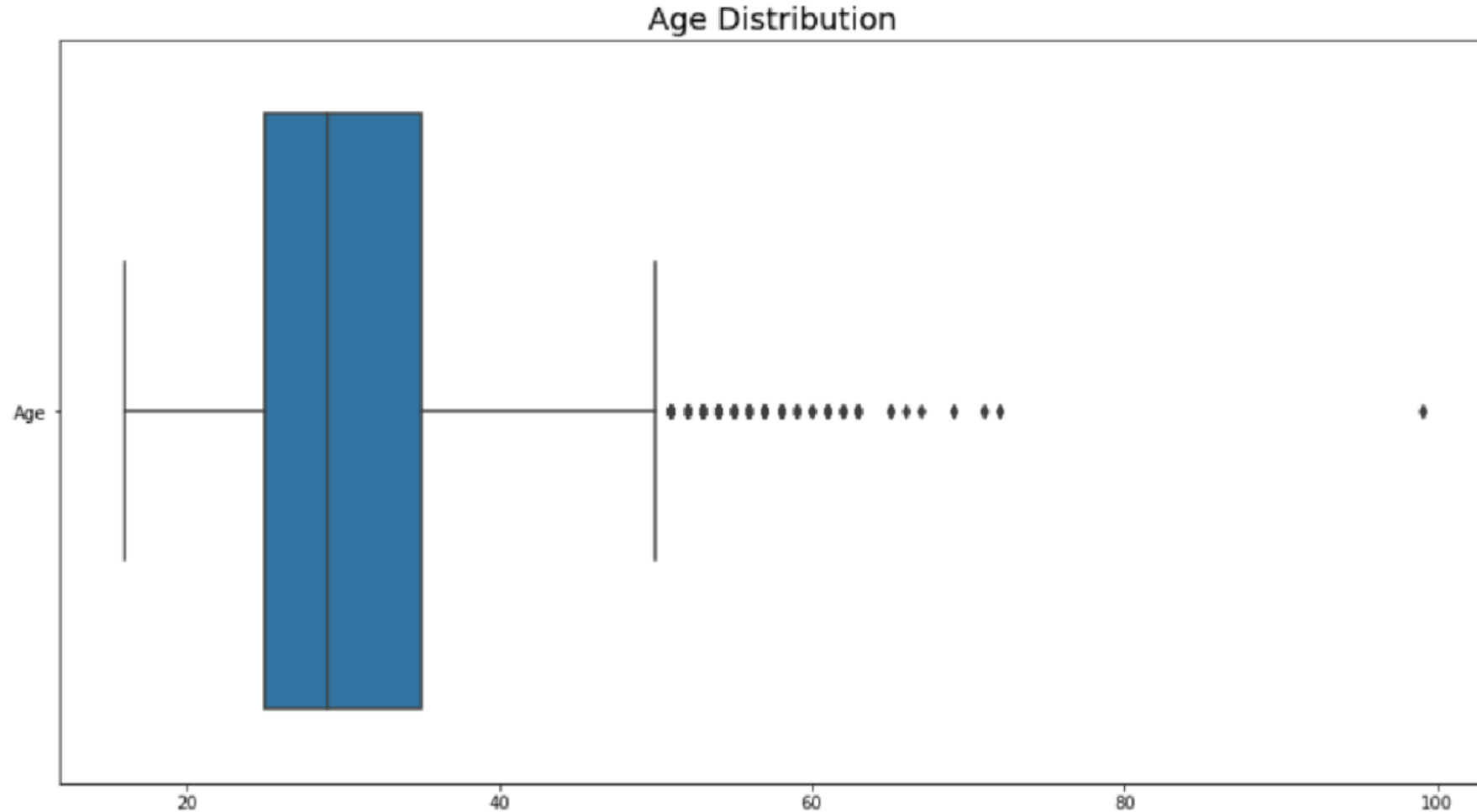
# APPENDIX

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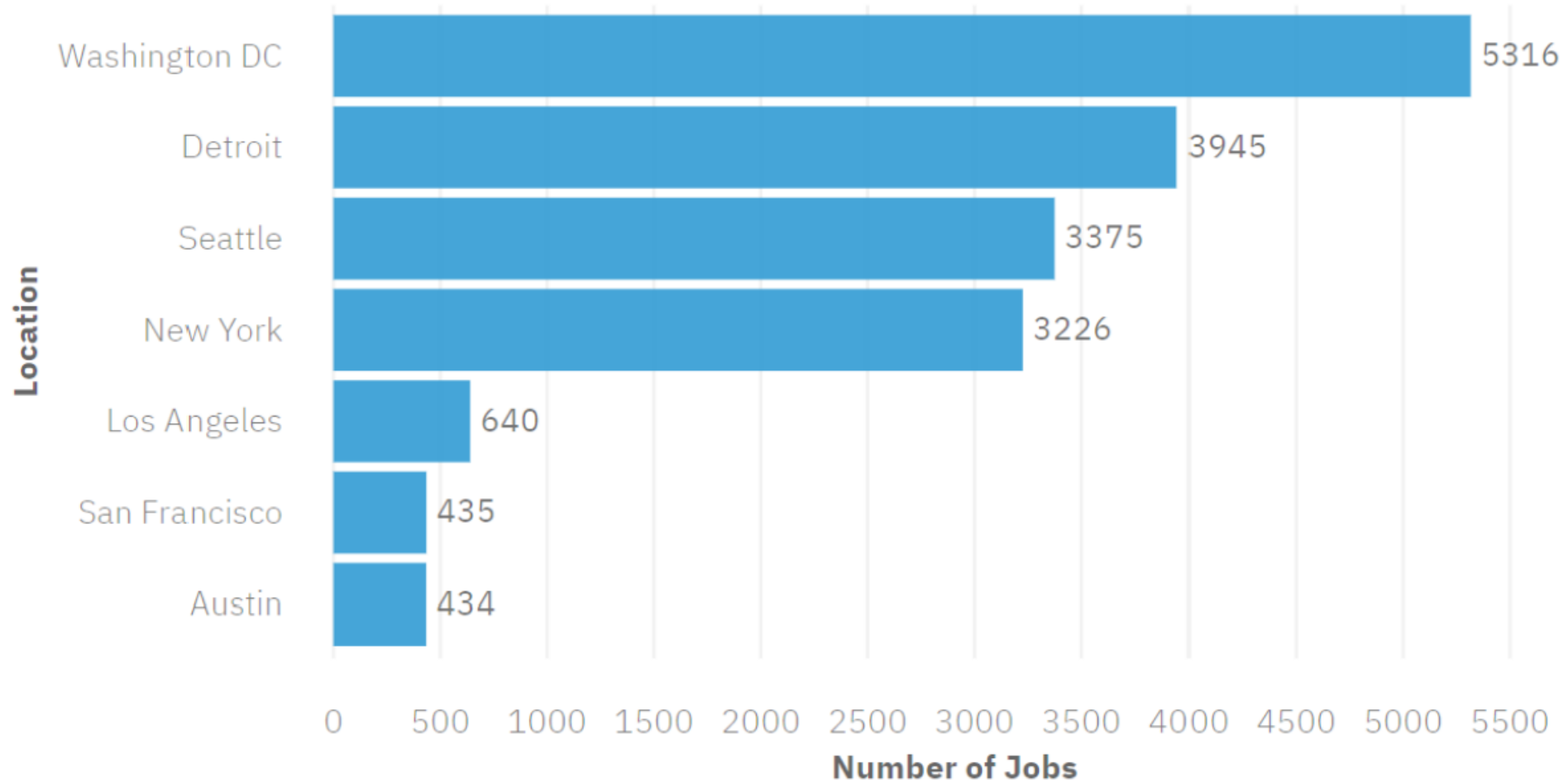


- During the analysis phase, we have considered as relevant the following additional charts:
  - Box plot of the age distribution:
    - A lot of outliers in the oldest participants
  - Bar chart of the location of the job offers:
    - Most of them are in just 4 cities
  - Bar chart of the popularity of the languages:
    - A correlation between the language and the salary

# AGE DISTRIBUTION



# JOB POSTINGS



# POPULAR LANGUAGES

