



# Stack Overflow 2019 Technology Survey

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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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- Stack Overflow Technology Snapshot
- Where are we now?
  - Languages
  - Databases
  - Platforms
  - Web Frames
- Where are we headed?
- Who is working in technology?
- How can we attract a more diverse talent pool?
- What classes are most likely to be needed by new developer entrants?

# INTRODUCTION

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- Increasing reliance on technology solutions
- Wide variety of tools and technologies available
- Relatively narrow profile of developers creates an opportunity for growth
- Where are we now and where to go in the future?
  - Survey of current and desired technologies
  - Look at who the respondents are and how we can increase diversity
- What class offerings to focus on to attract this new and diverse group of developers

# METHODOLOGY

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- Data from Stack Overflow 2019 Survey
  - Subset of entire survey
  - May not be fully representative
- Cleaned data with Pandas
- Analyzed with a variety of tools including
  - SQL
  - Matplotlib
  - Seaborn
- Developed Visualization Dashboard with Cognos
- Look at future opportunities

# RESULTS

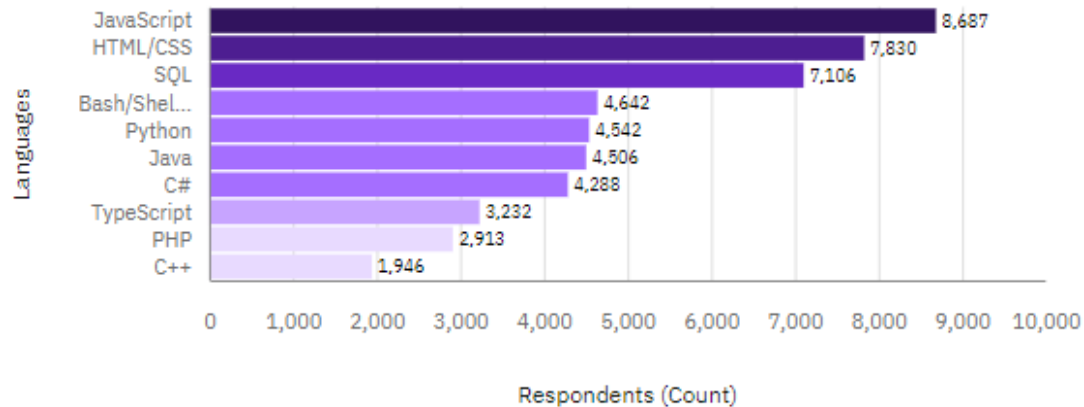
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- Programming Language Trends
- Database Trends
- Platform Trends
- Web Frame Trends
- Overall Demographics
- Focus on Women Aged 40-55

# PROGRAMMING LANGUAGE TRENDS

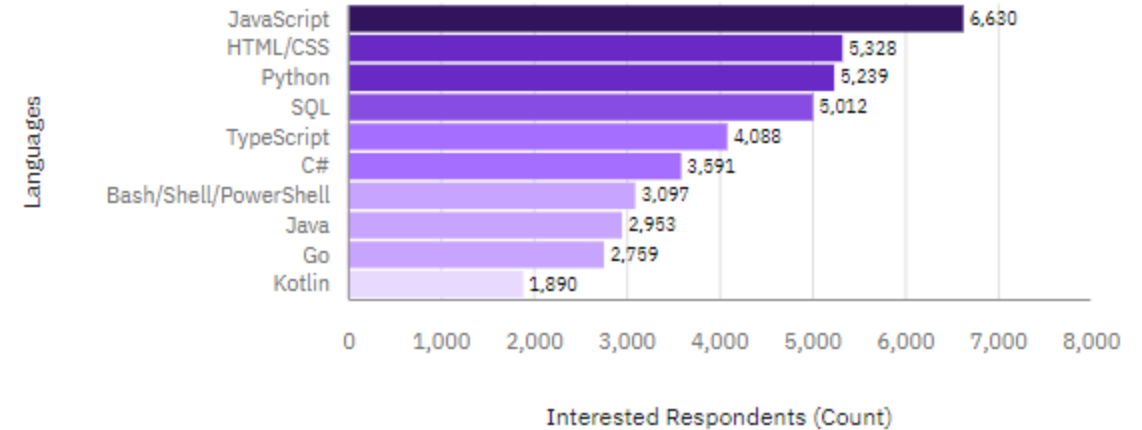
## Current Year

Top 10 Languages Currently Used



## Next Year

Top 10 Languages to Learn in the Next Year



# PROGRAMMING LANGUAGE TRENDS - FINDINGS & IMPLICATIONS

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## Findings

- JavaScript and HTML/CSS will continue as leaders
- Python set to overtake SQL, which will remain popular
- Typescript, Go, and Kotlin poised to take market share

## Implications

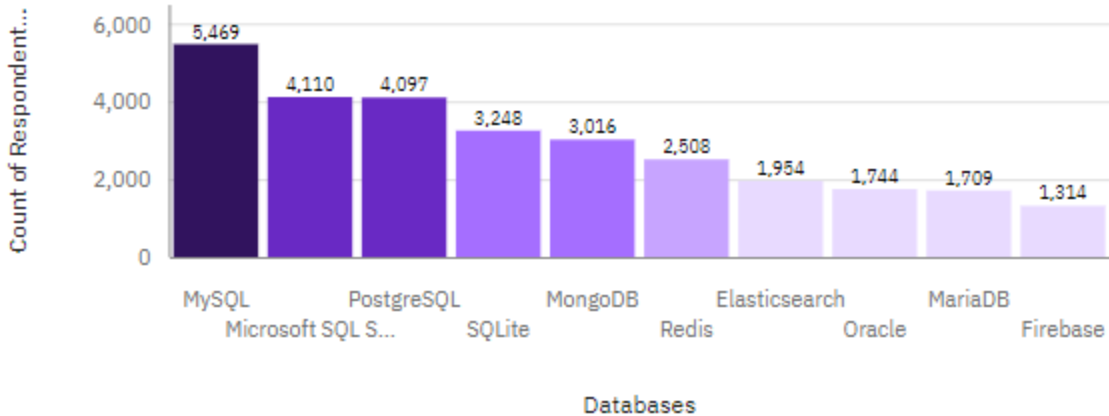
- JavaScript and HTML are nearly foundational and have a healthy future.
- Python on the rise as AI gains increased use.
- Up and coming languages could be opportunity for new classes.



# DATABASE TRENDS

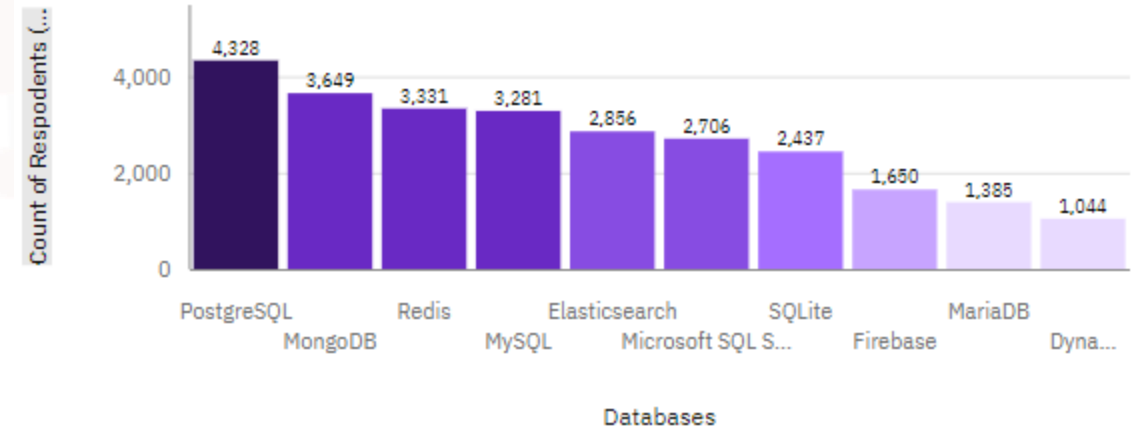
## Current Year

Top 10 Databases Currently Used



## Next Year

Top 10 Databases to Learn in the Next Year



# DATABASE TRENDS - FINDINGS & IMPLICATIONS

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## Findings

- More change expected in new year than we see in languages
- PostgreSQL and MongoDB getting the most interest
- Fewer entirely new entries to the top 10

## Implications

- Database has more variation in the top used offerings
- Great areas to ensure class offerings are strong
- Offers more opportunity for focus and advice

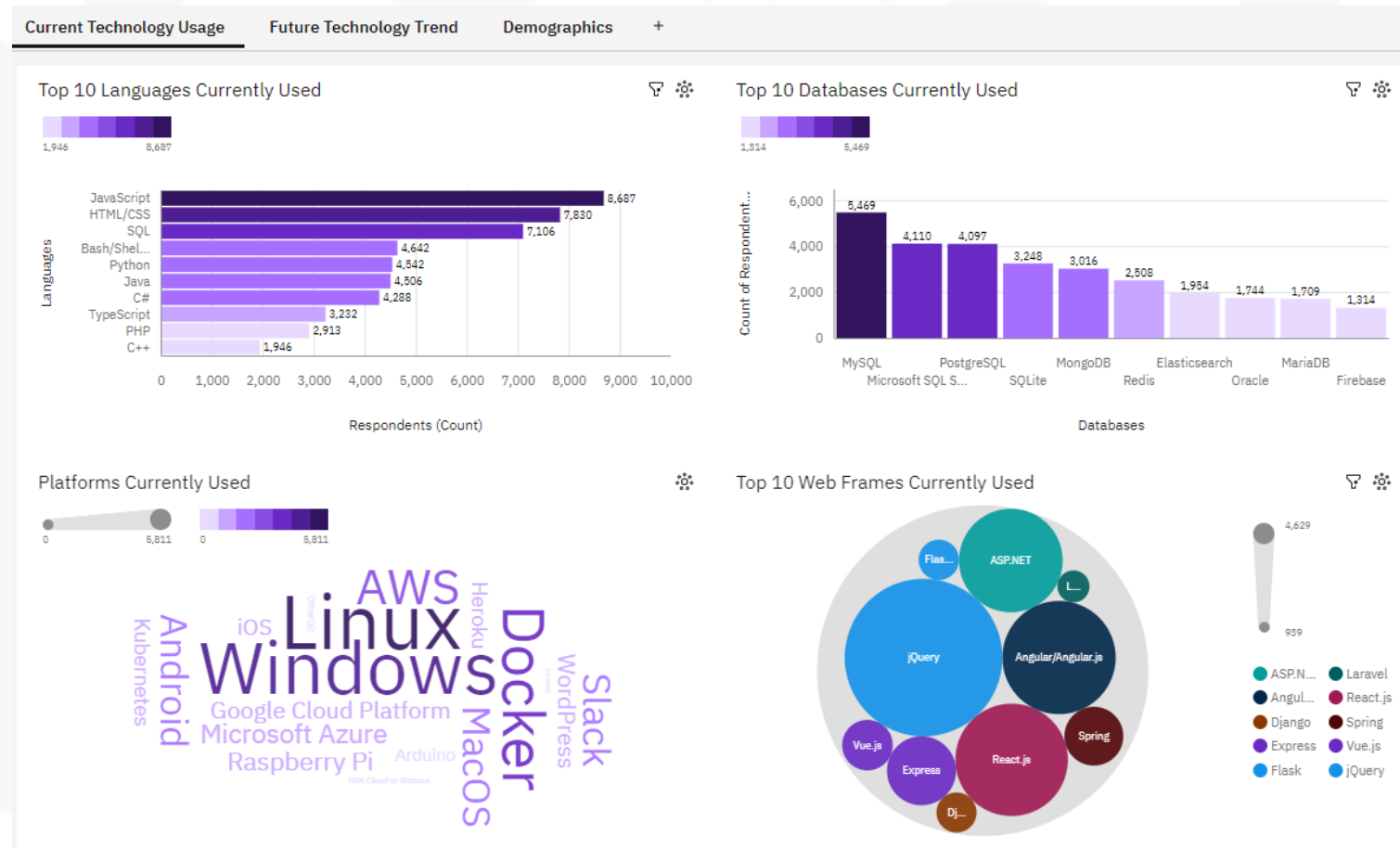
# DASHBOARD

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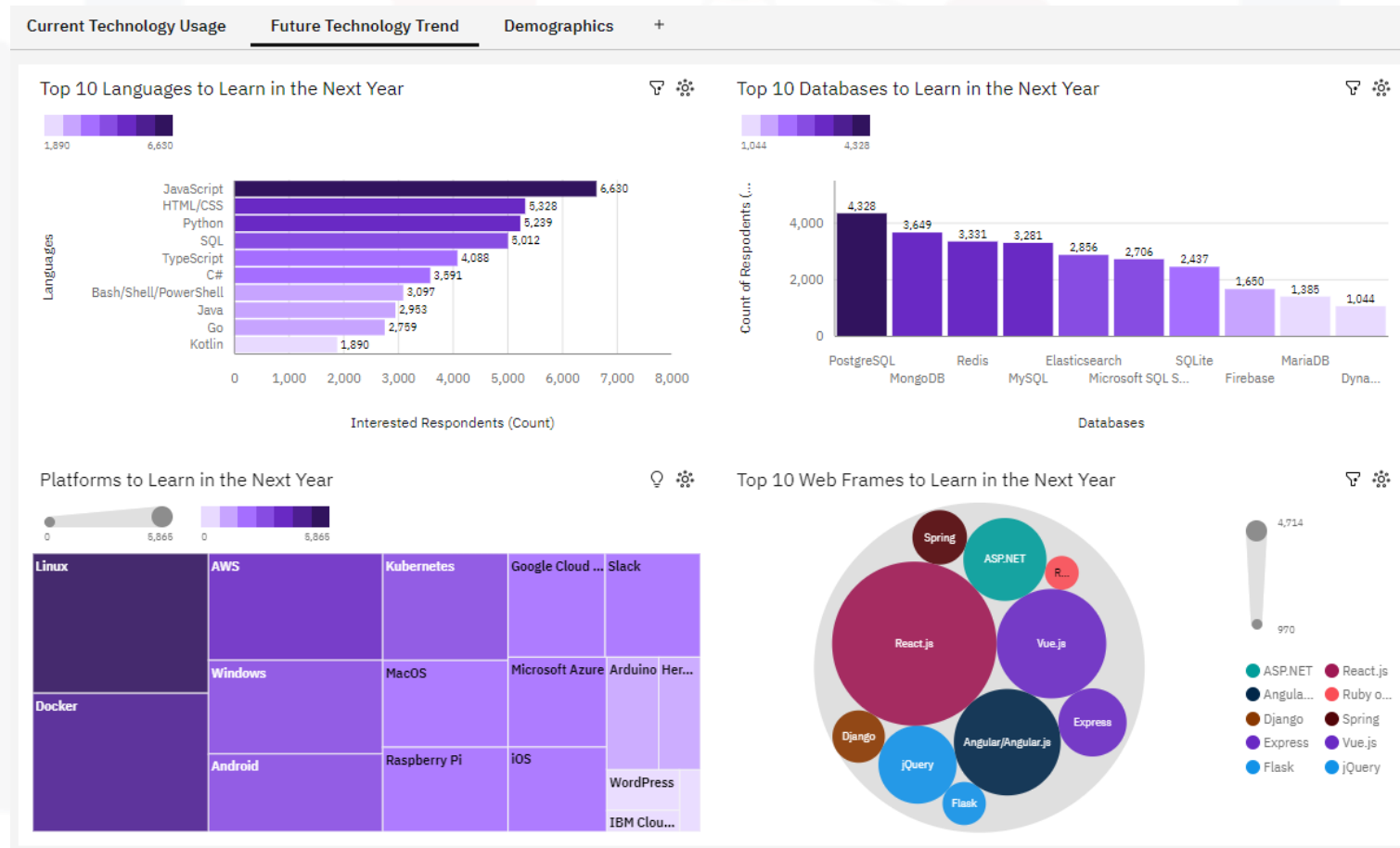


[projects/IBM SO Survey Capstone.pdf at main · jengunny/projects \(github.com\)](#)

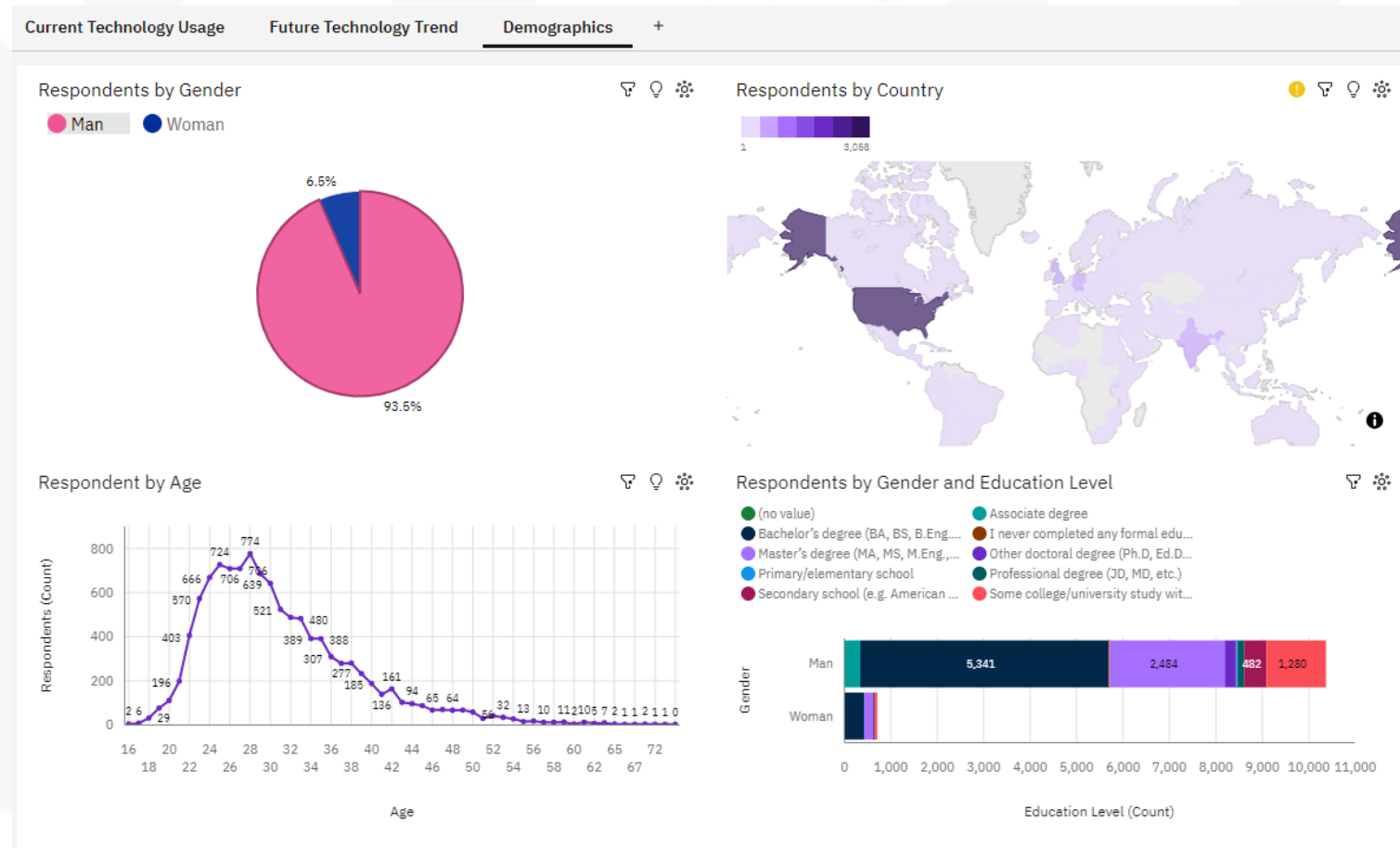
# DASHBOARD TAB 1



# DASHBOARD TAB 2



# DASHBOARD TAB 3



# DISCUSSION

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- What were you surprised to see/ or not see?
- How can we diversify the pool of developers?
  - Interest girls while still in school?
  - Encourage those looking for a second career?

# OVERALL FINDINGS & IMPLICATIONS

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## Findings

- Average age of developers is 30 and they are predominantly male
- Interest is strong in current languages and some newer ones
- Interest even more varied around databases

## Implications

- Diversification in both age and gender could lead to greater creative problem solving and efficiency
- Reinforce learning in these areas.
- Create new offerings in these new areas of interest.



# CONCLUSION

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- Recruit more females into developer profession
- Recruit both male and female developers that are interested in a second career
- Develop classes that are of interest in these cohorts
- Develop campaign to emphasize programming as a second career, especially in locations with job openings

# APPENDIX

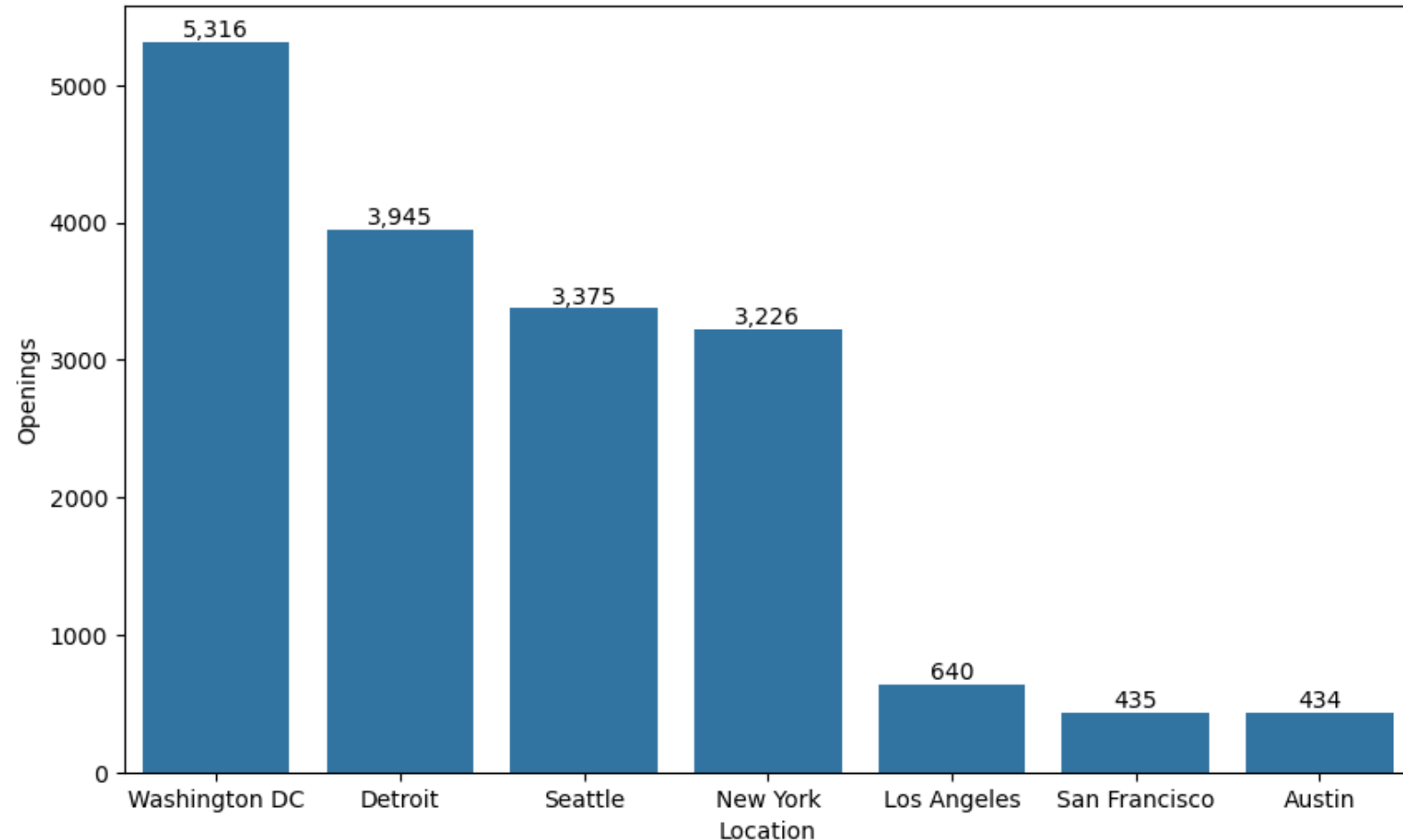
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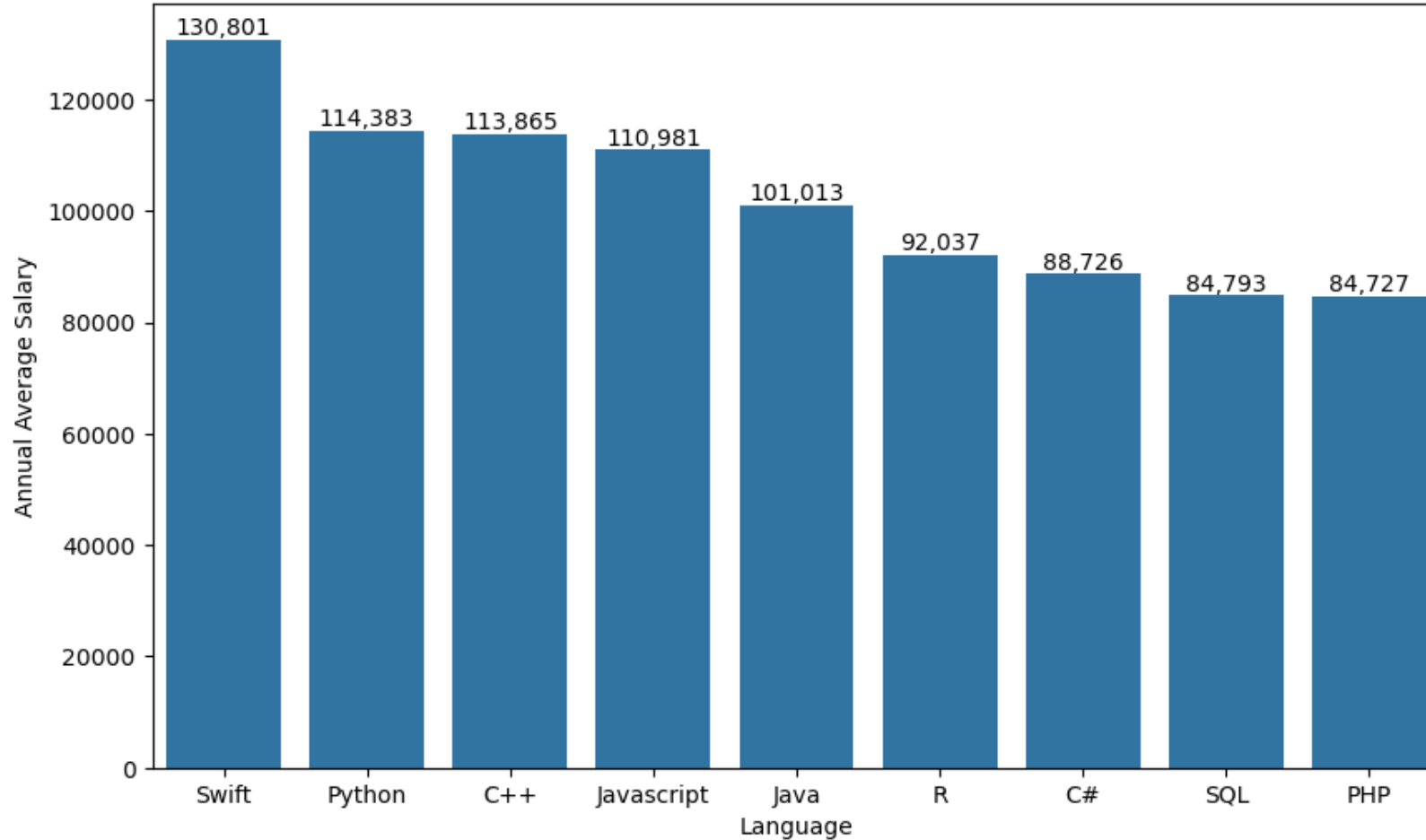
- Job postings by location
- Popular Languages
  - Overall
  - Women aged 40-55

# JOB POSTINGS by Location

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# POPULAR LANGUAGES



# POPULAR LANGUAGES for SECOND CAREER WOMEN

