Capstone: IT Developer Trends

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IBM Developer

SKILLS NETWORK

OUTLINE

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- Discussion
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- Conclusion
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EXECUTIVE SUMMARY

- Survey of current and future technological trends useful in job search in IT
- Use of current developer surveys, job postings, trainings to analyze trends
- Determination of list of skills/technologies to succeed in obtaining and completing tasks
- Brief exploration into current demographics, working conditions, salaries

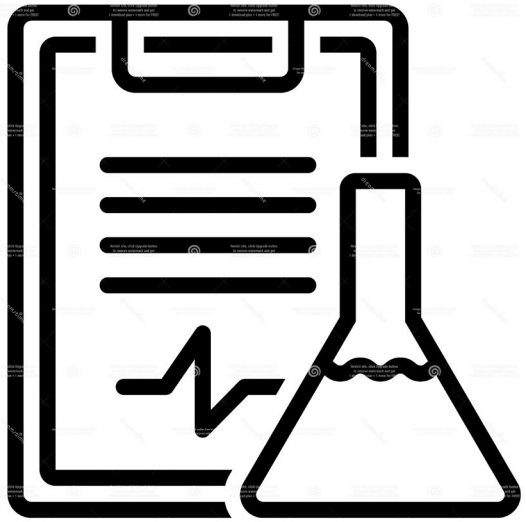
INTRODUCTION

- Evolving technology and job market requires understanding of current trends – integral for aspiring employees in IT
- Determining skills most crucial:
  - Programming languages
  - Database systems
  - Platforms
  - Webframes
- Demographics may play a role in analyzing current workforce in IT consulting

METHODOLOGY

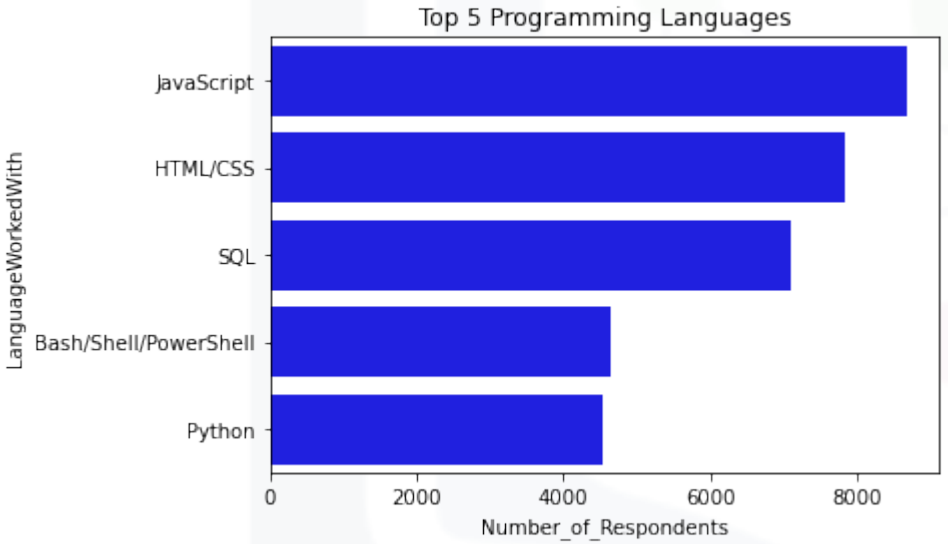
- Data obtained from:
  - Job postings – using Github API
  - Training portals – using salary surveys
  - Surveys from current developers in RDBMS
- Using Python (Pandas) for data wrangling and analysis
- Using Matplotlib and Seaborn for figure creation
- Using IBM Cognos Dashboard for dashboard creation
  - Current Technology
  - Future Trends
  - Demographics

RESULTS

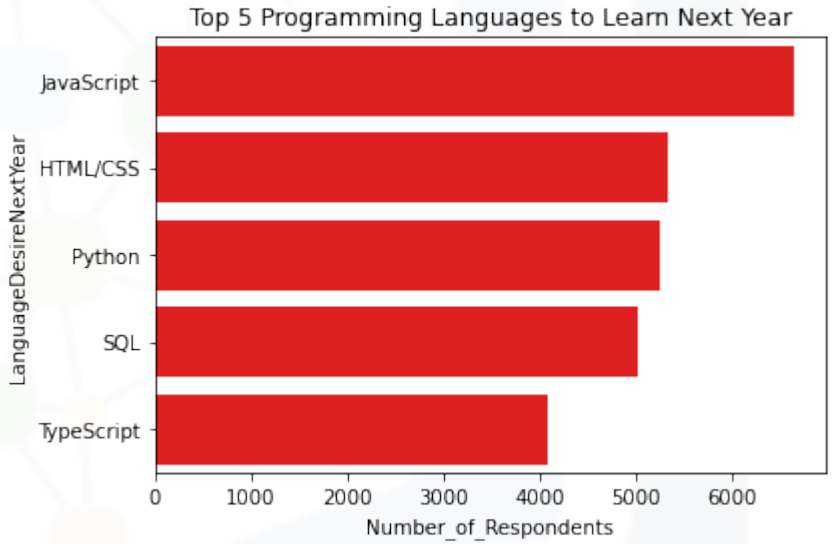


PROGRAMMING LANGUAGE TRENDS

Current Year



Next Year



PROGRAMMING LANGUAGE TRENDS - FINDINGS & IMPLICATIONS

Findings

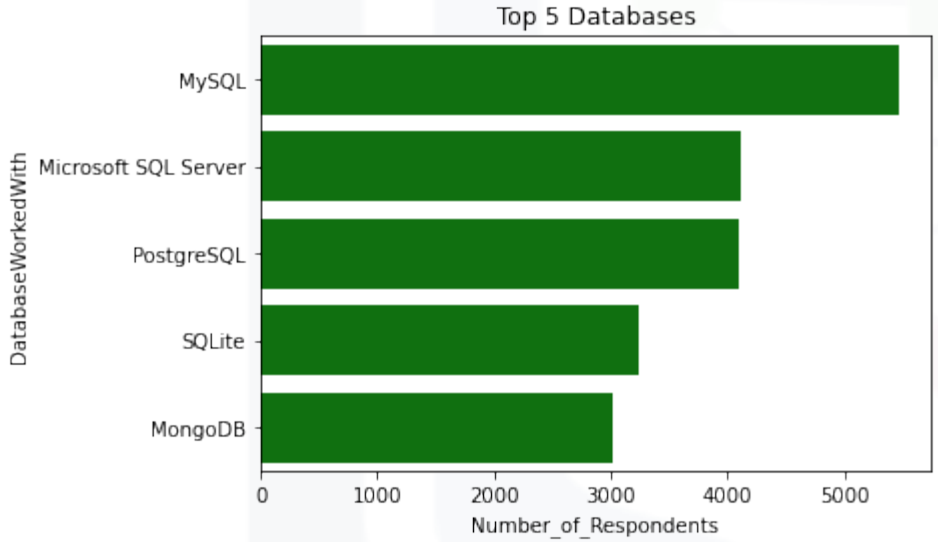
- JavaScript, HTML, SQL - top languages
- JavaScript most desired language
  - Followed by HTML, Python, SQL
- TypeScript is a top 5 most desired language despite not a top 5 current language

Implications

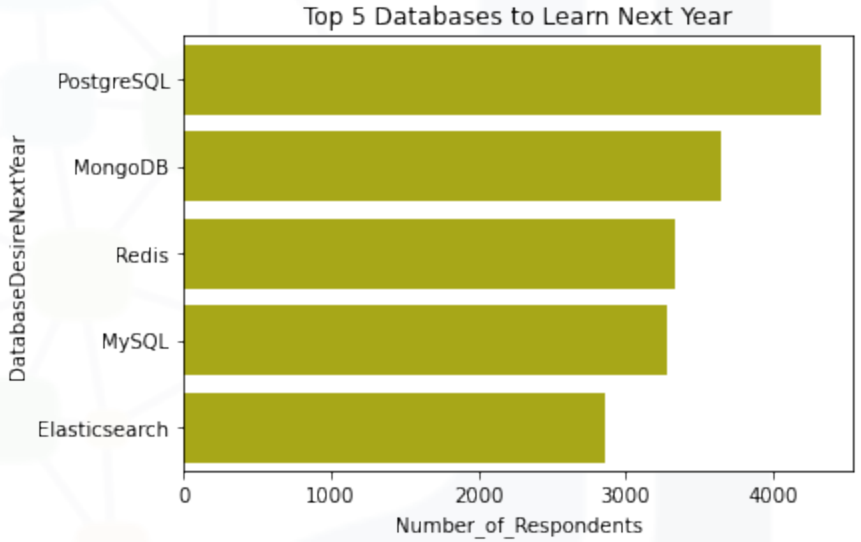
- JavaScript most useful
  - TypeScript (a variant of JavaScript) also desired
- HTML, SQL, and Python also essential
  - Appeared in both lists of current and desired languages

DATABASE TRENDS

Current Year



Next Year



DATABASE TRENDS - FINDINGS & IMPLICATIONS

Findings

- MySQL is most popular database system in use
  - Followed by Microsoft SQL Server and PostgreSQL
- PostgreSQL most desired database system to learn
  - Followed by MongoDB and Redis
- Redis and Elasticsearch in top 5 most desired databases but not in top 5 popular databases currently

Implications

- MySQL most popular currently, but PostgreSQL may surpass
- Affinity for particular database not as clear cut as programming language (more disparity among respondents)
- MySQL, PostgreSQL, and MongoDB most useful
- More recently developed database structures (Redis and Elasticsearch) favored over older structures (Microsoft SQL Server, and SQLite)

DASHBOARD

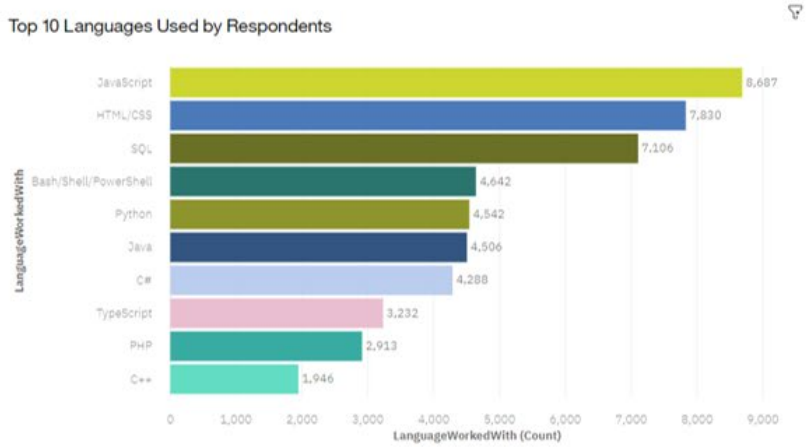
Dashboard:

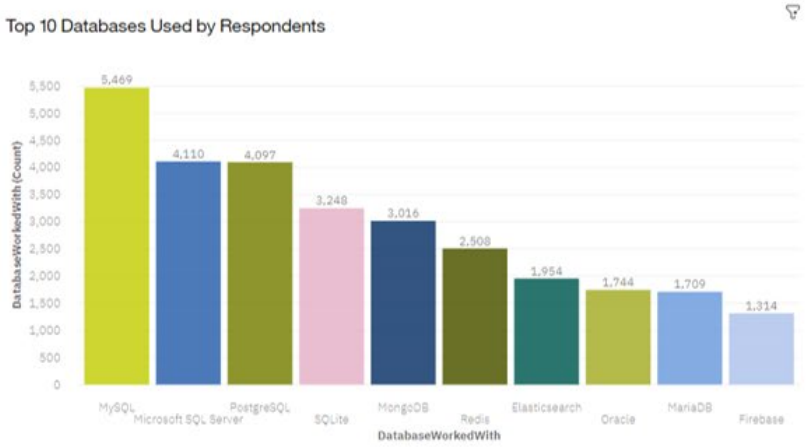
- Current Technologies Used
- Desired Technologies to Learn
- Demographics of Survey Responders

URL:

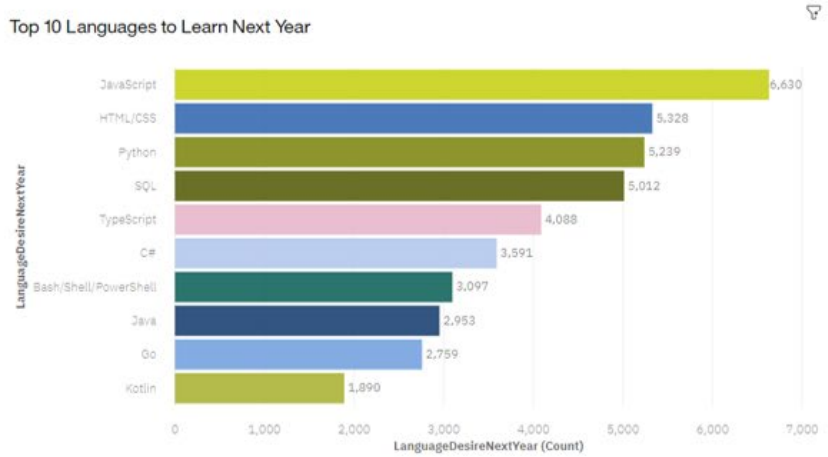
https://dataplatform.cloud.ibm.com/dashboards/0f2033fa-2fd7-460c-904e-84eb2abd420b/view/633bc62825806fdc4ac6bde4079b7f027865745be4bb8b5682d07b490d662397a8381092c82f4b0fde18056bf6ed440bcb

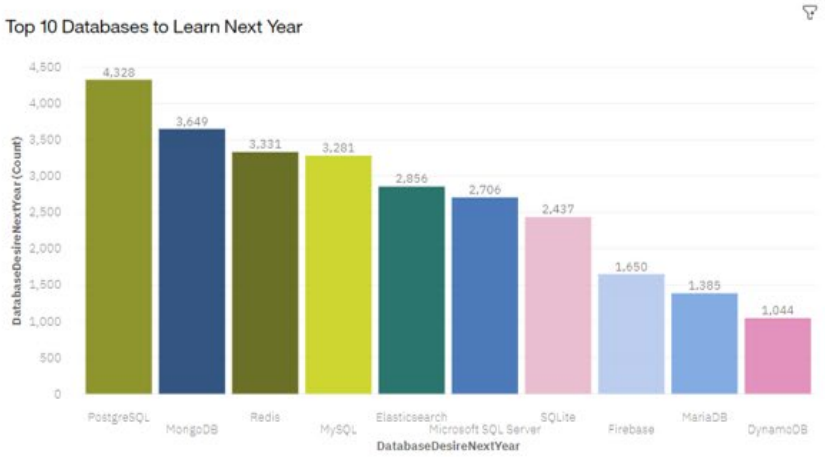
CURRENT TECHNOLOGY USAGE

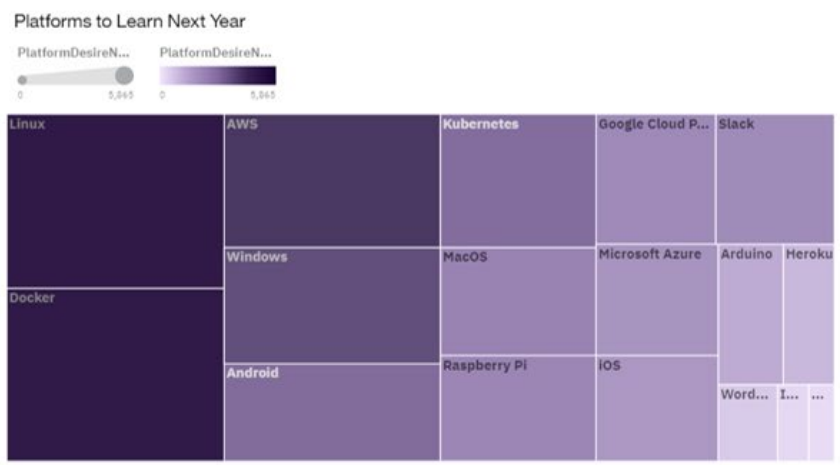




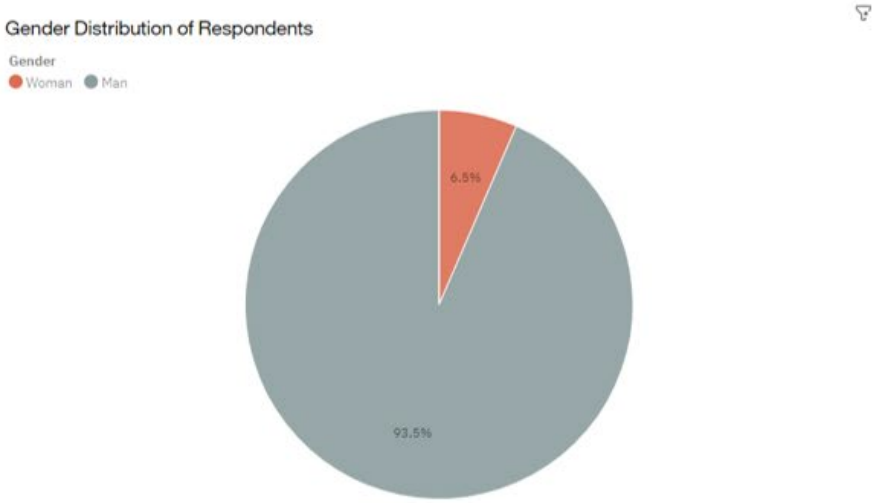
FUTURE TECHNOLOGY TREND

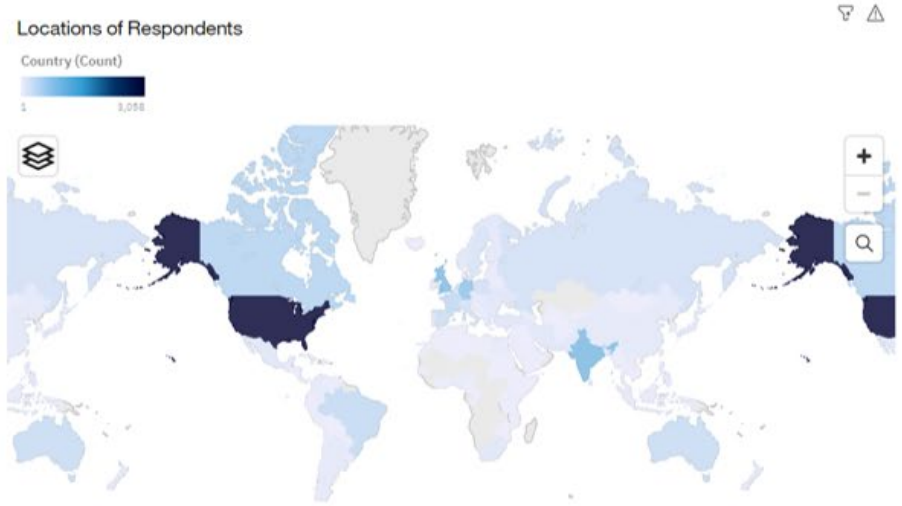


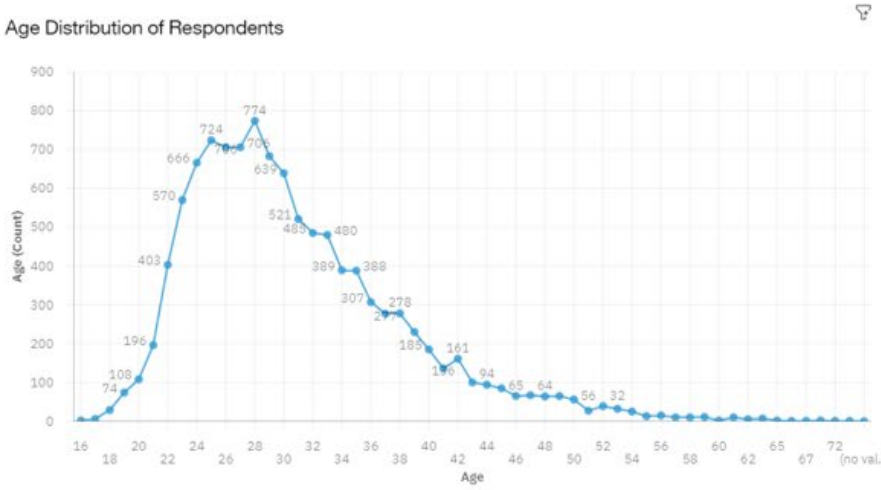


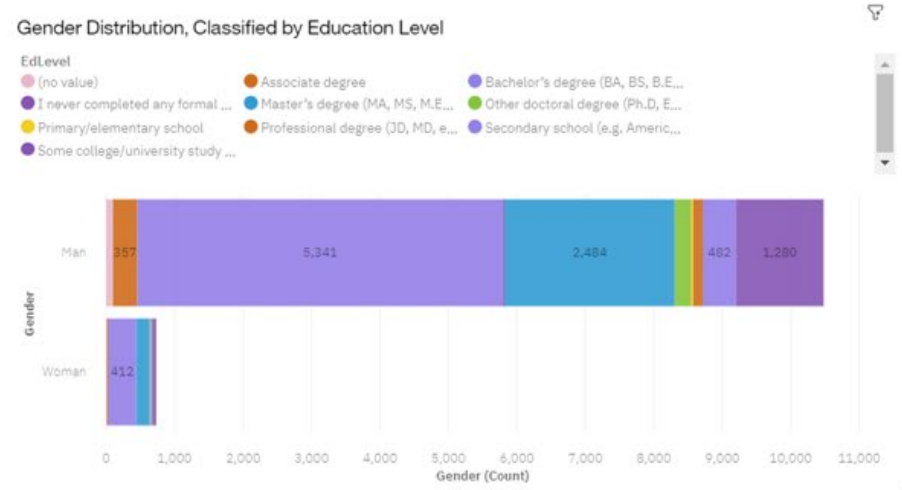


DEMOGRAPHICS









DISCUSSION

OVERALL FINDINGS & IMPLICATIONS

Findings

Technologies Featured in Top Current and Future Lists:

- Languages: ***JavaScript, HTML, SQL, Python, C#***
- Databases: ***MySQL, PostgreSQL, MongoDB, Redis***
- Platforms: ***Linux, Docker, AWS, Windows***
- Webframes: ***React.js, Angular, jQuery, Vue.js, ASP.NET***
- Most respondents between ages 20-40, attained at least bachelor's degree

Implications

- Learning listed popular technologies yield greater chance of job offers and higher salary (*see appendix*)
- Achieving bachelor's degree or higher provides greatest success

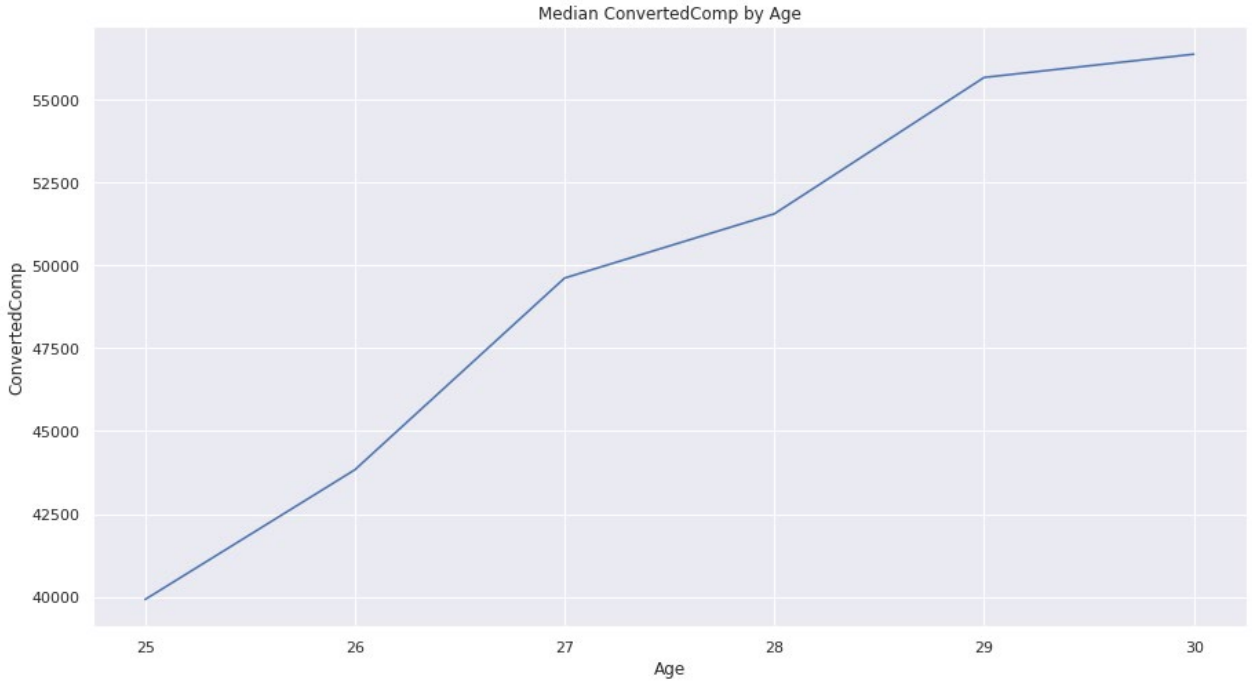
CONCLUSION

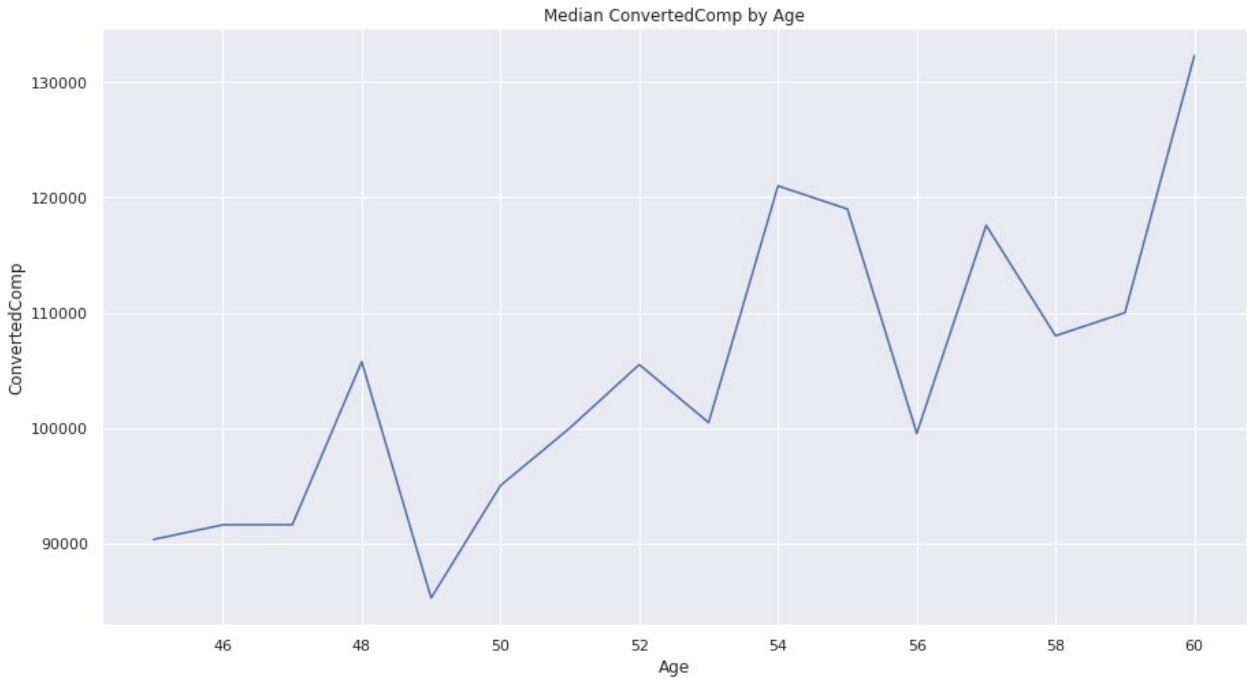
- Current and future trends closely correlate
- Most useful technologies (to begin):
  - JavaScript
  - PostgreSQL, MySQL
  - Linux
  - React.js, jQuery
- Future: further exploration into how technologies impact job search, demographics, working conditions

Acknowledgements: Survey Respondents, Tools (GitHub API, Python, IBM)

APPENDIX

AGE VS COMPENSATION

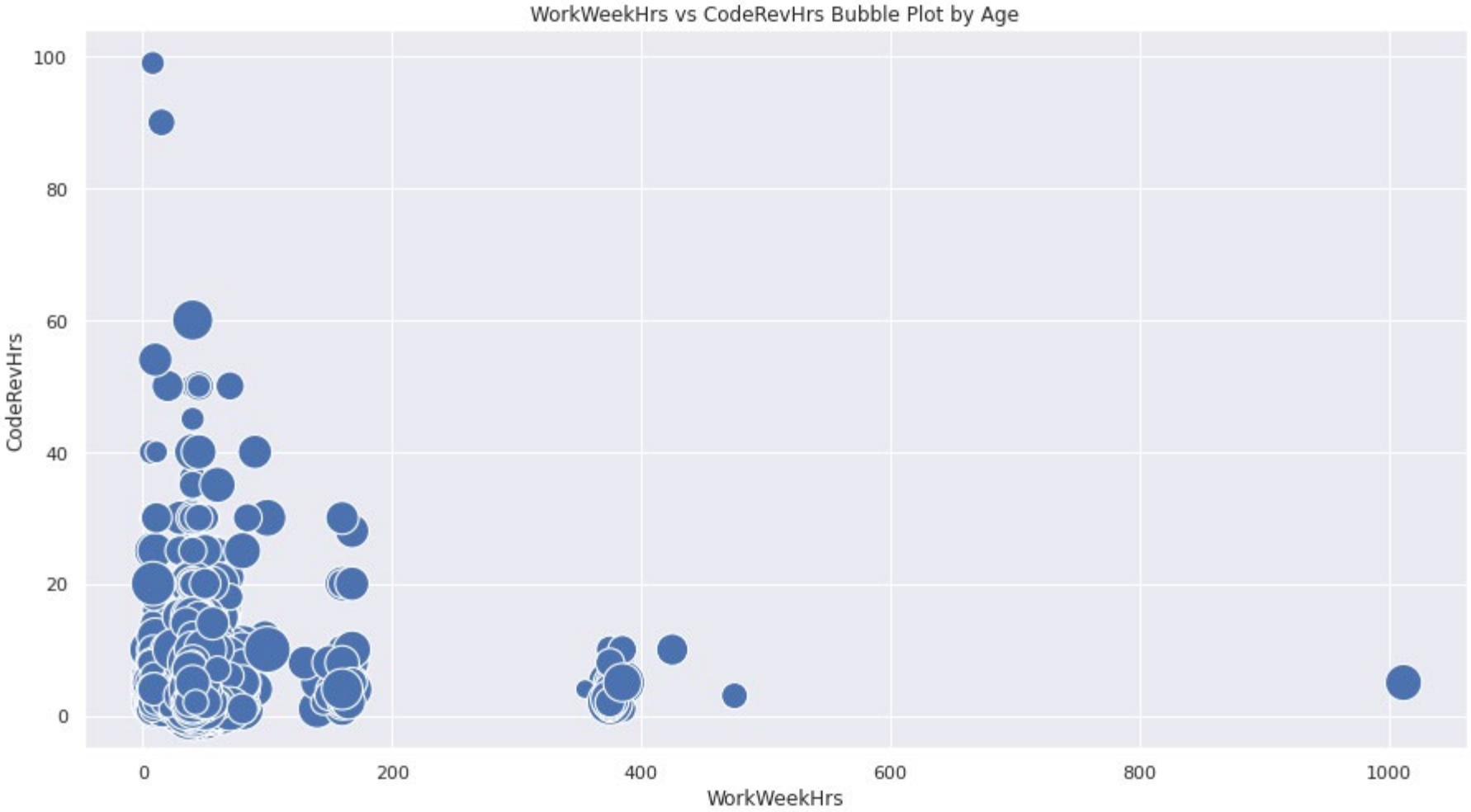




	Respondent	CompTotal	ConvertedComp	WorkWeekHrs	CodeRevHrs	Age
Respondent	1.000000	-0.013490	0.002181	-0.015314	0.004621	0.004041
CompTotal	-0.013490	1.000000	0.001037	0.003510	0.007063	0.006970
ConvertedComp	0.002181	0.001037	1.000000	0.021143	-0.033865	0.105386
WorkWeekHrs	-0.015314	0.003510	0.021143	1.000000	0.026517	0.036518
CodeRevHrs	0.004621	0.007063	-0.033865	0.026517	1.000000	-0.020469
Age	0.004041	0.006970	0.105386	0.036518	-0.020469	1.000000

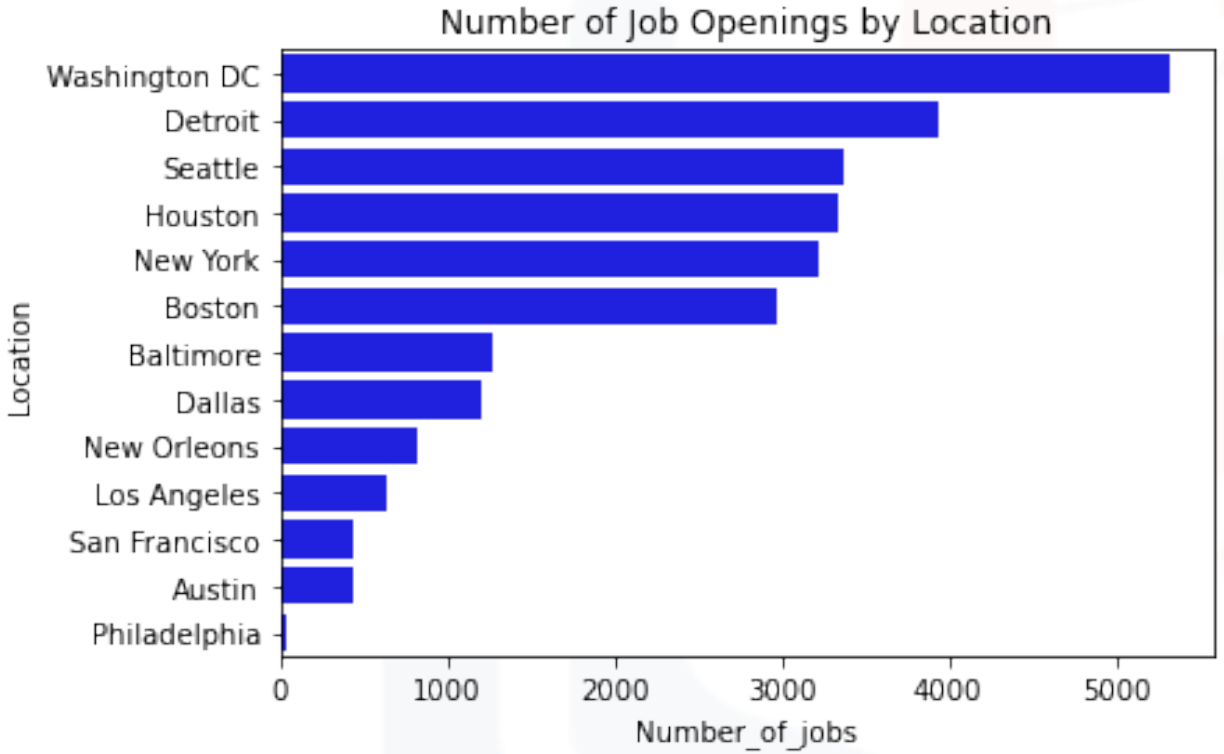
- Correlation analysis of data indicates that age is somewhat positively correlated to compensation pay

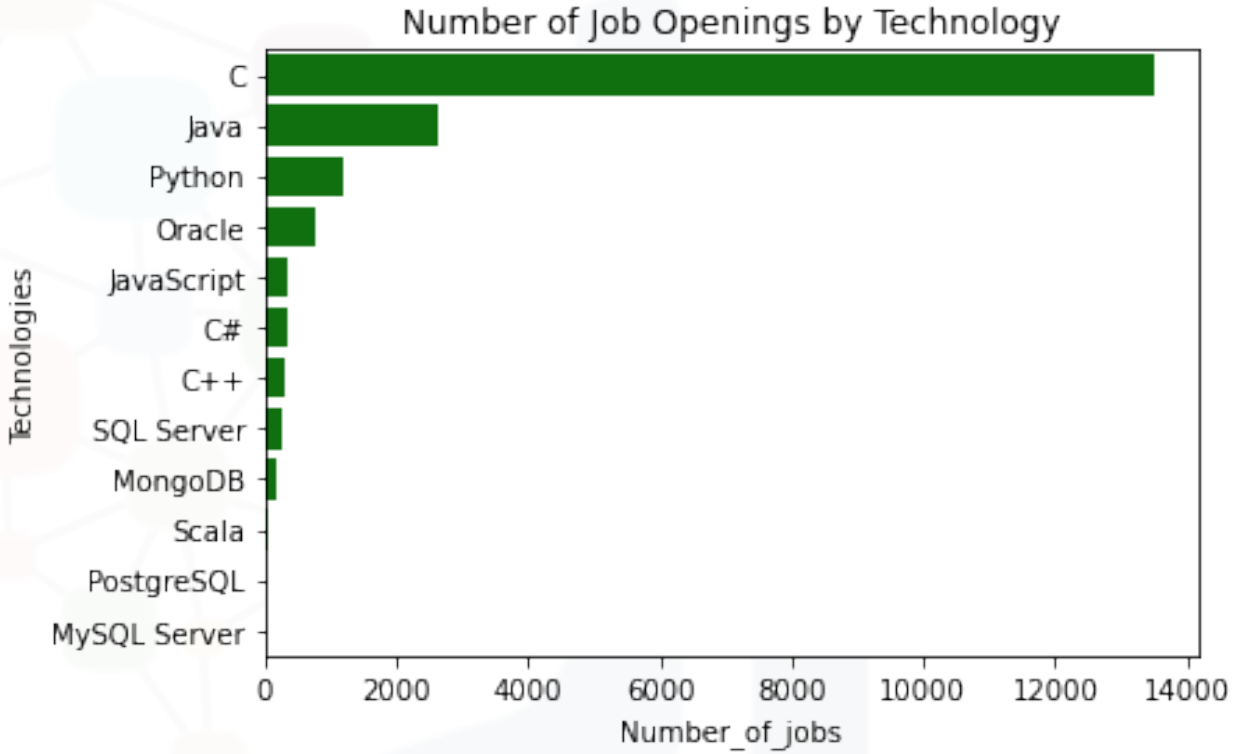
WORK WEEK HRS VS CODE REVISION HRS



- Correlation analysis indicates that work week hours and code revision hours are somewhat negatively correlated
- Respondents have longer work hours tend to spend less code revision hours, and vice versa

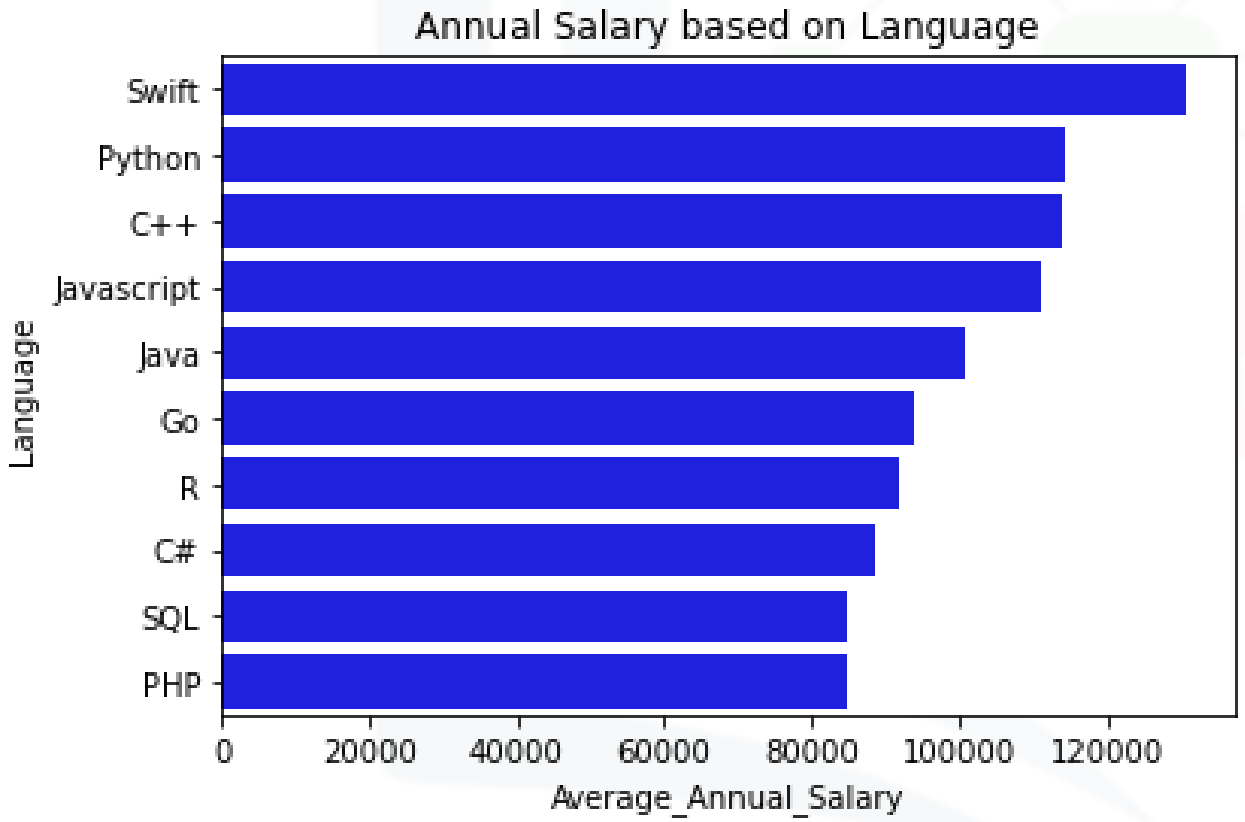
GITHUB JOB POSTINGS





- DC offers most job openings, followed by Detroit, Seattle, Houston, and NYC
- C is most sought skill in job openings, followed by Java, Python, Oracle, JavaScript

POPULAR LANGUAGES BY SALARY



- Despite not as popular as Python, JavaScript, and SQL, Swift yields highest salary
- JavaScript is most popular language, but yields only 4th most salary