



Survey Responses

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OUTLINE



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EXECUTIVE SUMMARY



- •Most Common Languages worked with were Bash and other shells, C#, HTTP/CSS, C, Assembly and Java.
- •Most Common Databases worked with were Firebase, MS SQL Server, MongoDB, MariaDB, and MySQL
- •Most Common Areas Desired to work with
 - Languages – JavaScript, HTML/CSS, Python, SQL
 - Databases – PostgreSQL, MongoDB, Redis, MySQL
 - Platforms – Linux, Docker, AWS, Windows, Android
- •Education Levels - Most Masters Degrees were achieved between ages 21-26.

INTRODUCTION



- This study uses data collected and cleaned from a survey conducted by Stack Overflow. It is intended to show management what trends are for future Languages, Databases, Platforms, and Web Frames, as the respondents answered they would like to learn. The graphs and charts below show the data in readable and summarized form. The data includes Demographics and the following for both Current work and Desired Future Learning for: Most Common Languages worked with were Bash and other shells, C#, HTML/CSS, C, Assembly, and Java.
- Most Common Databases worked with were Firebase, MS SQL Server, MongoDB, MariaDB, and MySQL
- Most Common Areas Desired to work with
- Languages – JavaScript, HTML/CSS, Python, SQL
- Databases – PostgreSQL, MongoDB, Redis, MySQL
- Platforms – Linux, Docker, AWS, Windows, Android
- Web Frames – React.js, Vue.js, Angular.js, Asp.net, and jQuery
- Education Levels - People who had Masters Degrees got them mostly between ages 21-26

METHODOLOGY



- Data was collected from StackOverflow Survey about Current and Future Languages, Databases, Platforms, Demographics, etc.
- Data was uploaded to IBM Cognos Analytics.
- Bar charts and other graphs or plots show the data.
- Additional data was analyzed for Job Posting by Location
- Additional data was analyzed for Languages by Salary

RESULTS

The most common languages that are already known are:

Bash or other shell, C# and HTML / CSS, and C, followed by Assembly and Java. If Java and JavaScript are combined, they would rank 4th, just below C.

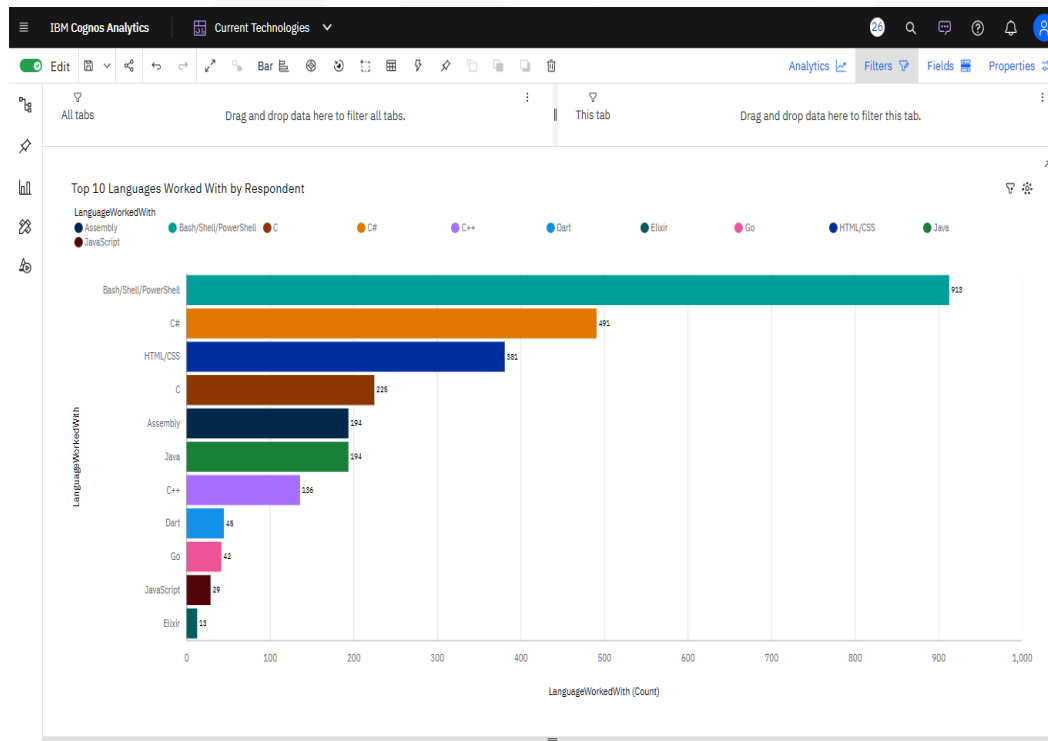
The most common databases already worked with are Firebase, MS SQL Server, MongoDB, MariaDB and MySQL. If MS SQL Server and MySQL are combined, they would take first place.

Desired languages are JavaScript, HTML / CSS, Python, SQL and TypeScript. Desired databases are close, but at the top are PostgreSQL, MongoDB, Redis, MySQL and Elasticsearch.

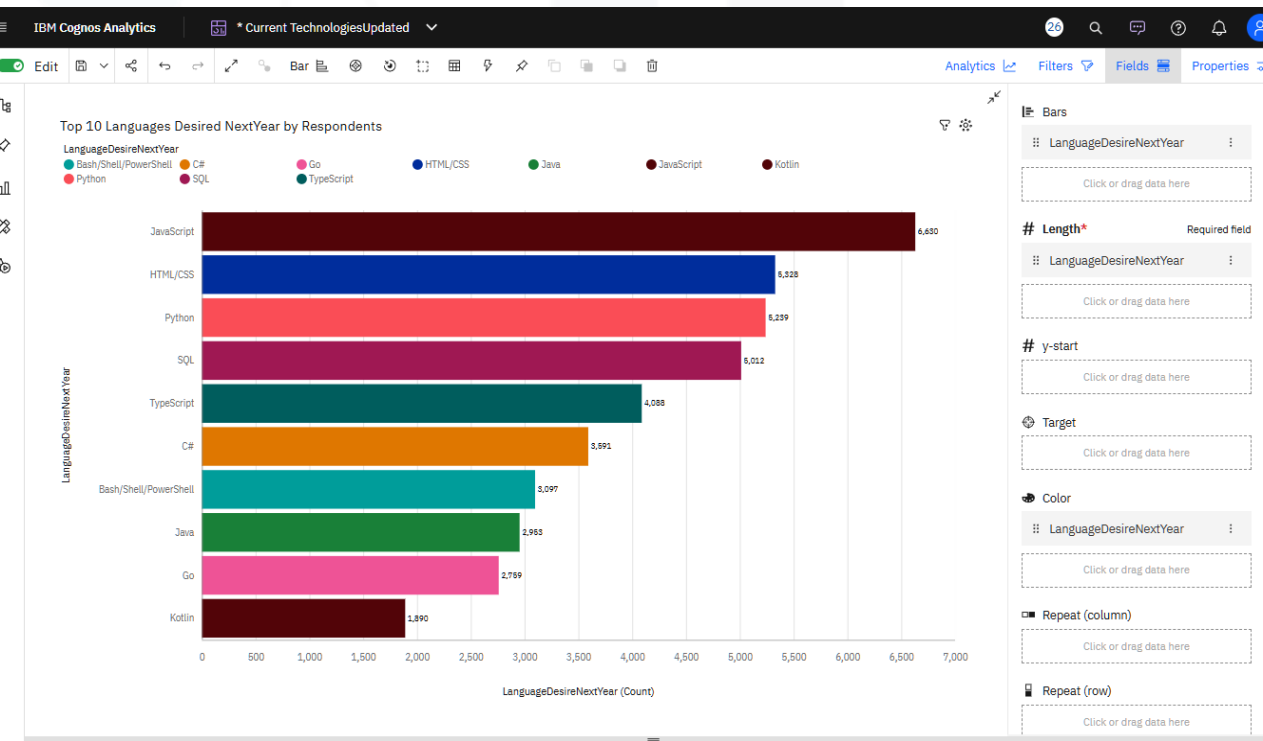
The most popular platforms to work on are Linux, Docker, AWS, Windows, and Android.

PROGRAMMING LANGUAGE TRENDS

Current Year



Next Year



PROGRAMMING LANGUAGE TRENDS - FINDINGS & IMPLICATIONS

Users are interested in learning JavaScript.

- Bash and other shell languages have dropped to rank 7.
- HTML and CSS remain high on the list of languages.
- Python is becoming more popular, at rank 3.

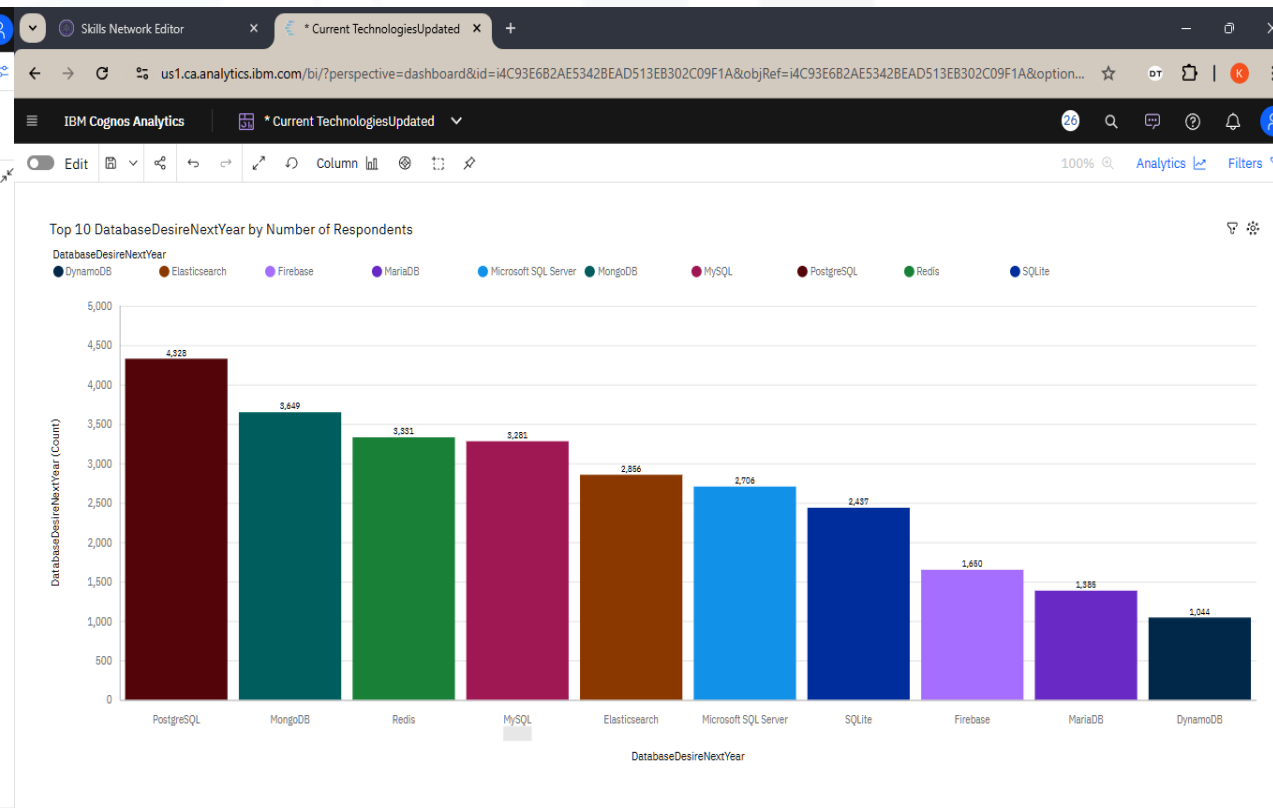
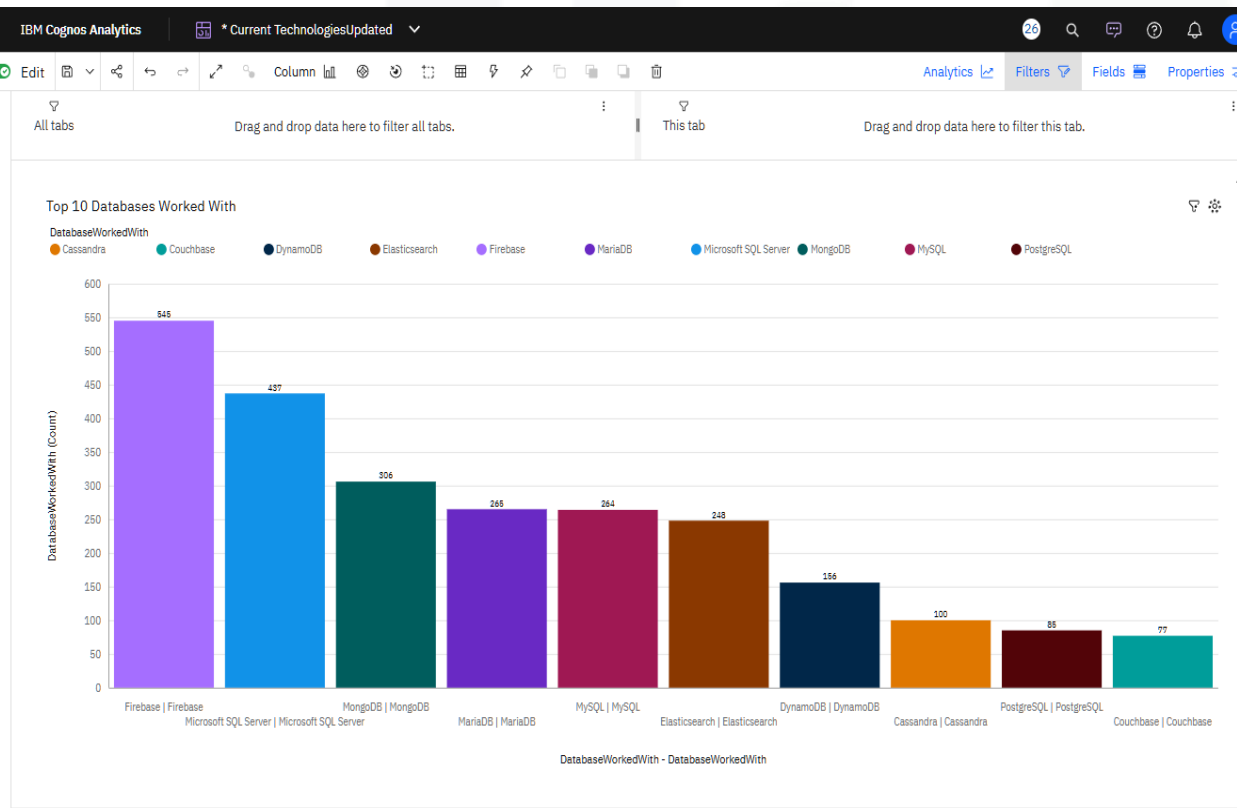
To attract excellent people, training in JavaScript could be offered as an incentive.

- Shell scripts could be converted to JavaScript or Python to remain competitive.
- HTML and CSS programs can remain unchanged.
- Python could replace some shell scripts and is more secure.

DATABASE TRENDS

Current Year

Next Year



DATABASE TRENDS - FINDINGS & IMPLICATIONS

While Firebase and MS SQL Server were clearly most used last year, this year other DBs are seen as having an advantage.

- PostgreSQL is desired
- MongoDB, Redis, and MySQL are also desired, but there is not too much difference.

It would be good for products using Firebase or MS SQL Server to support PostgreSQL also.

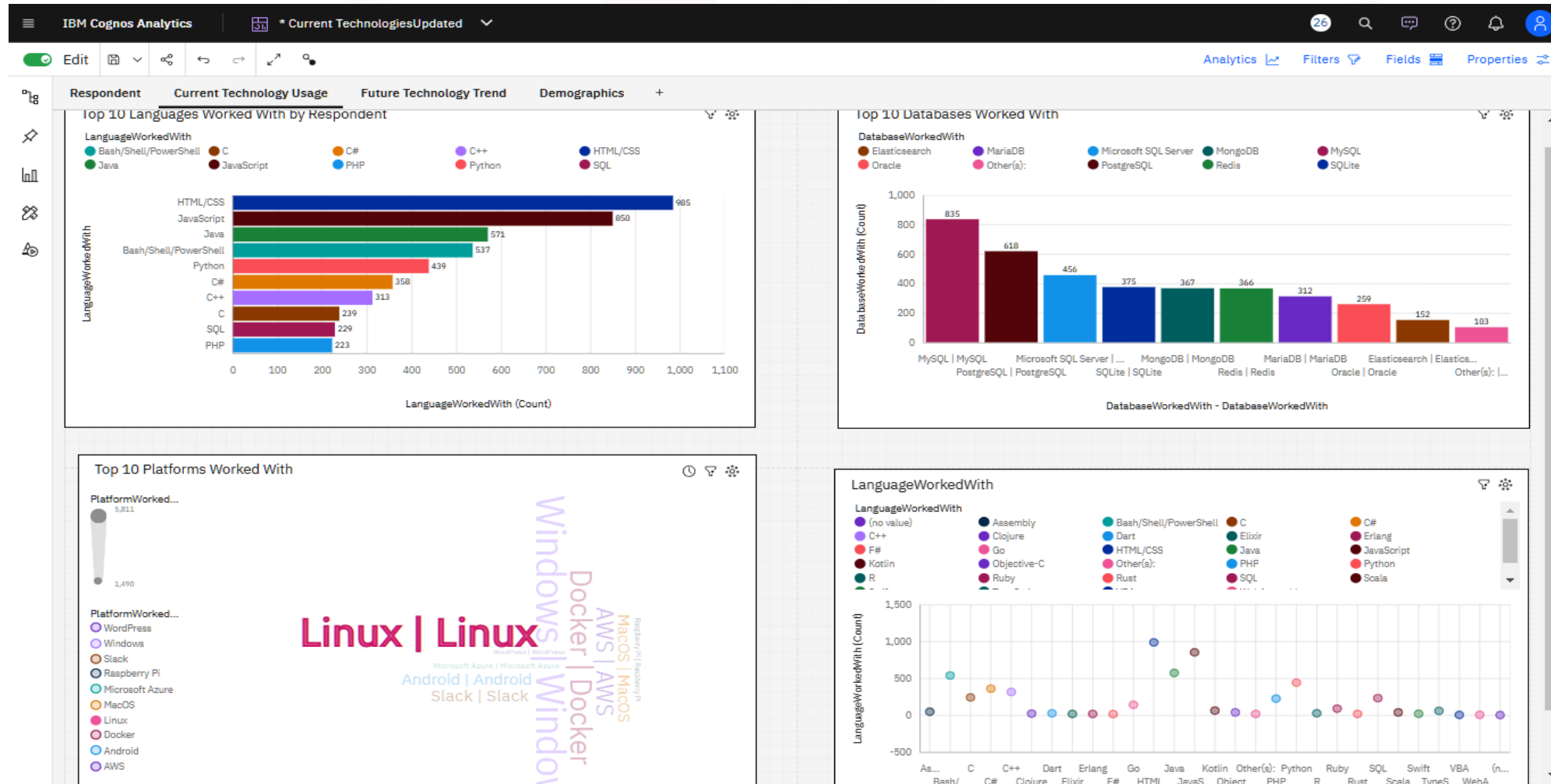
- Most responders chose PostgreSQL or MongoDB as a desired DB.
- However, about 7 databases are found as possibly popular in the future.

DASHBOARD

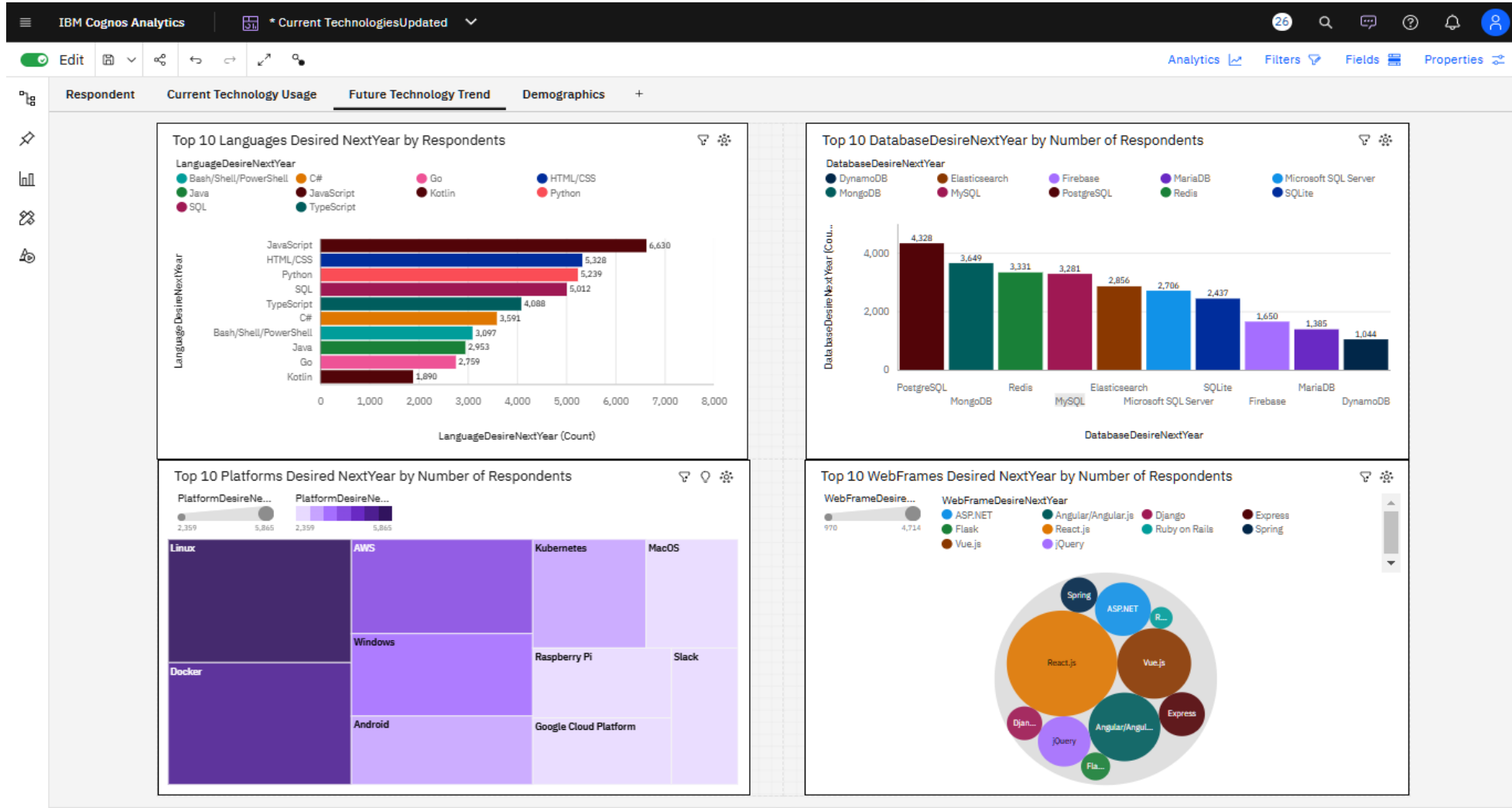


[Cognos Program with Graphs and Charts](#)

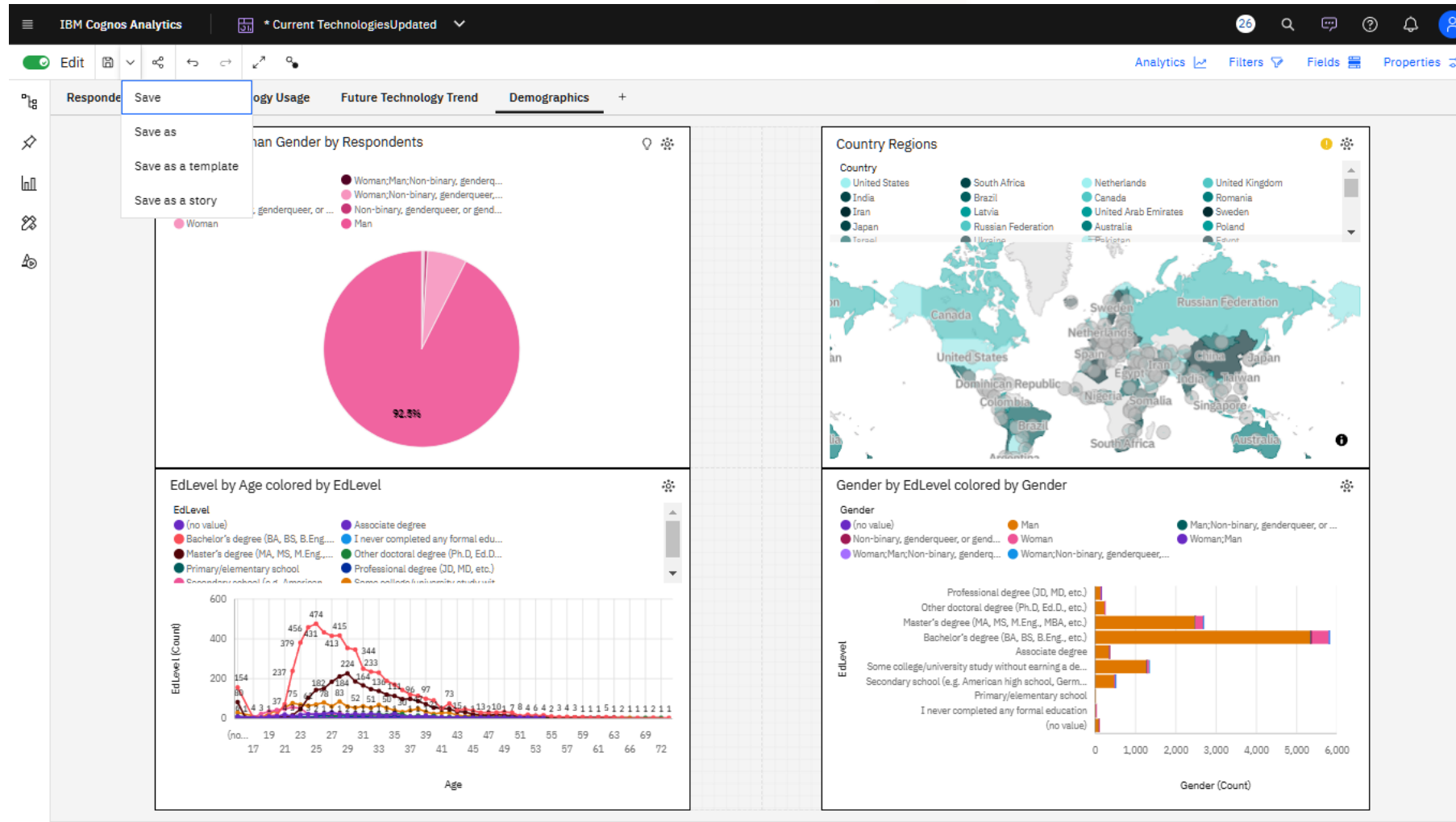
DASHBOARD TAB 1



DASHBOARD TAB 2



DASHBOARD TAB 3



DISCUSSION



- Would it be worth it for the product to support the future languages and databases that respondents say they would like to learn?
- Would it be worth it to provide such training for them?

OVERALL FINDINGS & IMPLICATIONS

Respondents are eager to learn new languages and databases.

- JavaScript is the number 1 language people want to learn.
- PostgreSQL is the number 1 database people want to learn.

If responses reflect which languages and databases are popular next year, then it is worth it to further study the pros and cons of the favored languages and databases.

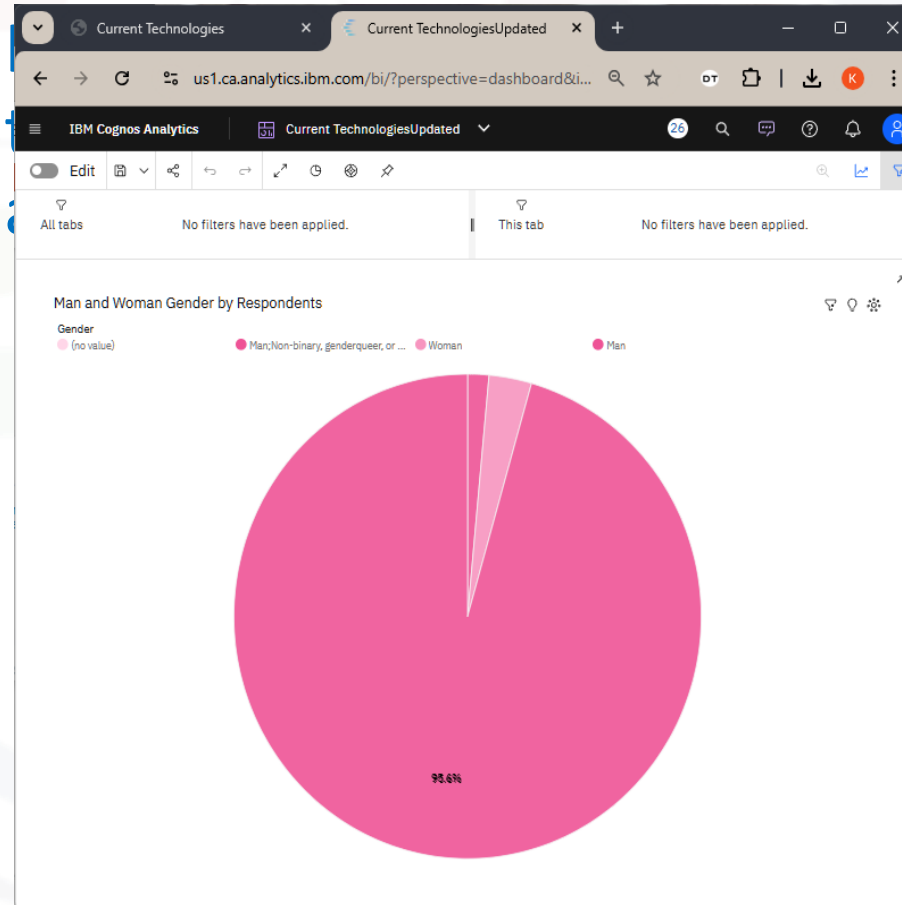
- It's possible that JavaScript is the best language for web or other developers.
- It's possible that PostgreSQL is a great database for future applications.
- It's worth further study to see if there are correlations with current job and job in search of.

CONCLUSION



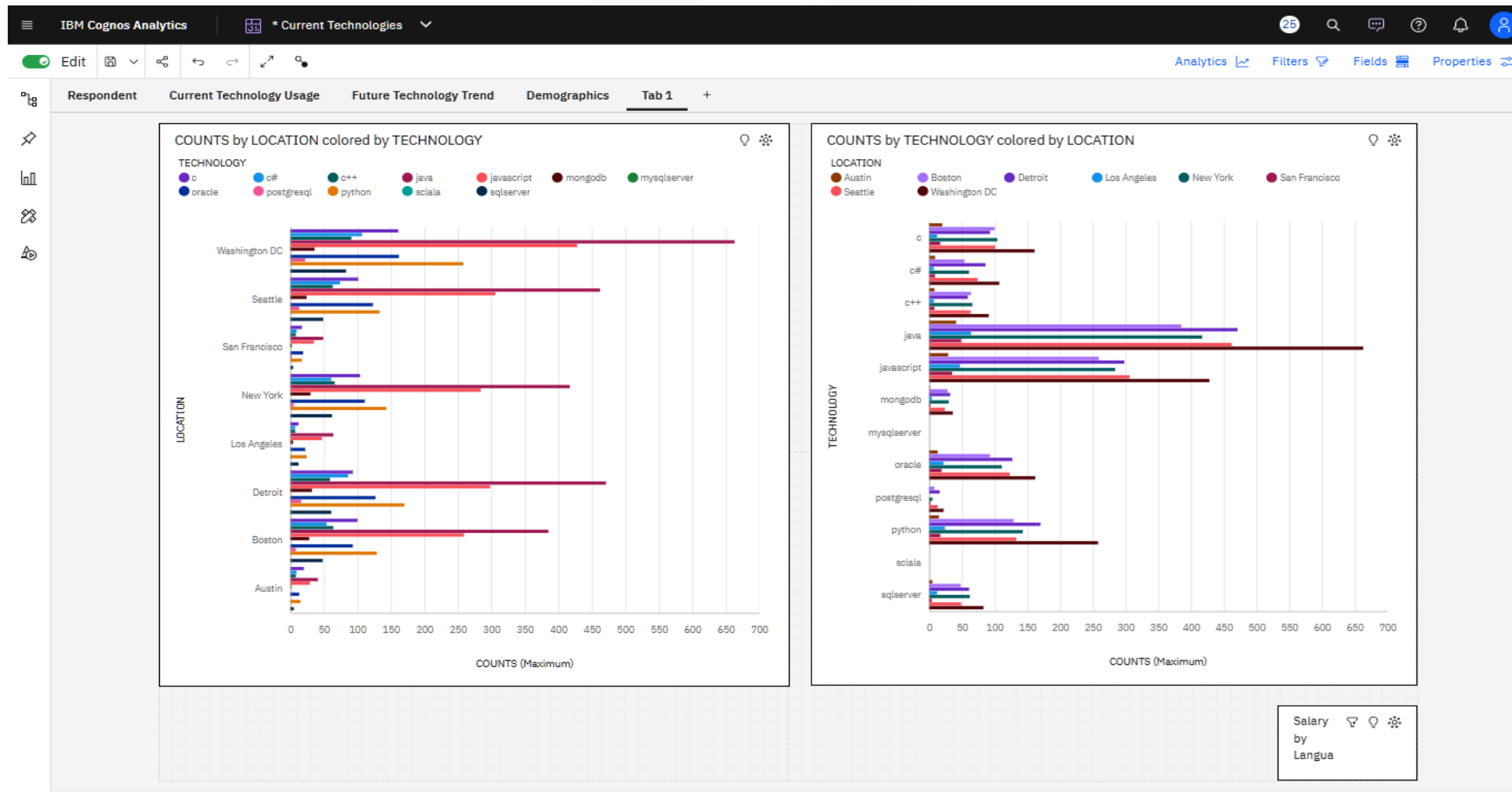
- A study is recommended to determine correlations, if any, between respondents' current jobs and demographics and what interests them in the next year.
- A study is recommended to learn pros and cons of the most desired languages and databases.

APPENDIX

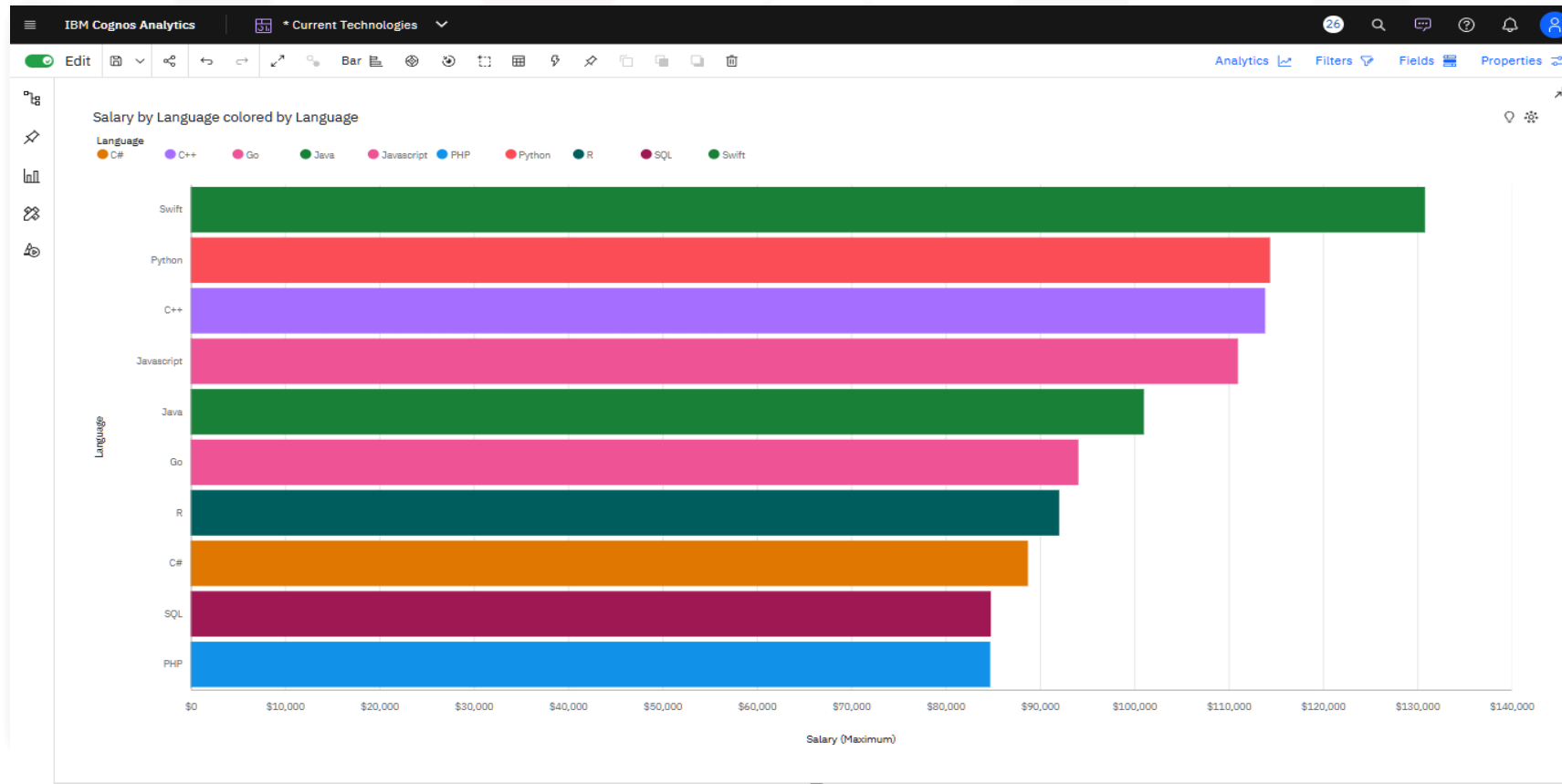


charts, or
during the

JOB POSTINGS



POPULAR LANGUAGES





Appendix

- 1. The Cognos project illustrates both Location by Technology counts but also Technology by Location. It is above.
- 2. A pivot table in Excel is used to show totals for Job Postings:
- <https://github.com/kristajan/IBMDACapstoneProject/blob/be83c401d481e240450fc98e7aa3cba95ea5ace5/job-postingsPT.xlsx>



Pivot Table in Excel

The screenshot shows an Excel window with a PivotTable summarizing job postings by location and technology. The PivotTable is located in the range A3:M16. The PivotTable Fields task pane is open on the right, showing the source data and the current field arrangement.

PivotTable Fields Task Pane:

- Choose fields to add to report: LOCATION, TECHNOLOGY, COUNTS
- Drag fields between areas below:
 - Filters: (empty)
 - Columns: (empty)
 - Rows: LOCATION, TECHNOLOGY
 - Values: Sum of COUNTS
- Defer Layout Update: ☐
- Update: [button]

PivotTable Data:

Row Labels	Sum of COUNTS
Austin	141
c	20
c#	9
c++	8
java	41
javascript	29
mongodb	1
mysqlserver	0
oracle	13
postgresql	0
python	15
sclala	0
sqlserver	5
Boston	1168
c	100
c#	54
c++	64
java	385
javascript	259
mongodb	28
mysqlserver	0
oracle	93
postgresql	8
python	129
sclala	0
sqlserver	48