STACK OVERFLOW DEVELOPER SURVEY

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OUTLINE

❖ Executive Summary

❖ Introduction

❖ Methodology

❖ Results
  ➢ Visualization – Charts
  ➢ Dashboard

❖ Discussion
  ➢ Findings & Implications

❖ Conclusion

❖ Appendix

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EXECUTIVE SUMMARY

❖ Data contextualization and analysis goal.

❖ Methodology description.
  ➢ Data gathering.
  ➢ Data analysis.
  ➢ Data visualizations.

❖ Results presentation supported with graphs and trends.

❖ Discussion of overall findings and implications regarding the results previously exposed.

❖ Final conclusions of the carried out research.

INTRODUCTION

- ❖ Stack Overflow's annual Developer Survey is the largest and most comprehensive survey of people who code around the world.
- ❖ Results don't represent everyone in the developer community evenly.
- ❖ Nearly 90,000 developers.
- ❖ Trends to predict where the developers are going.
- ❖ Characterization of developers around the globe.

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METHODOLOGY
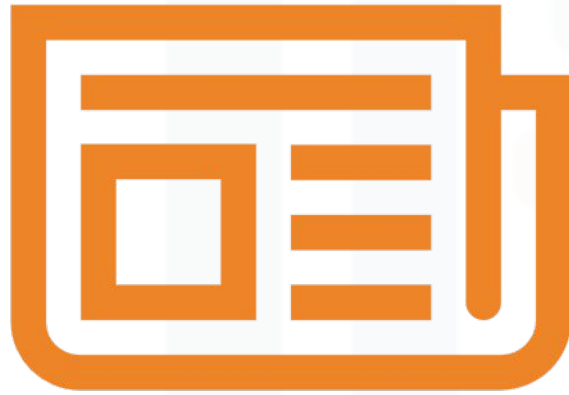
❖ Collect survey data & explore its content
  ➢ Web Scraping.
  ➢ APIs.
  ➢ Request library.
❖ Data Wrangling
❖ Exploratory data analysis
  ➢ Analyzing data distribution.
  ➢ Handling outliers.
  ➢ Correlations.
❖ Data Visualization
  ➢ Highlight distribution of data, relationships, the composition and comparison of data.
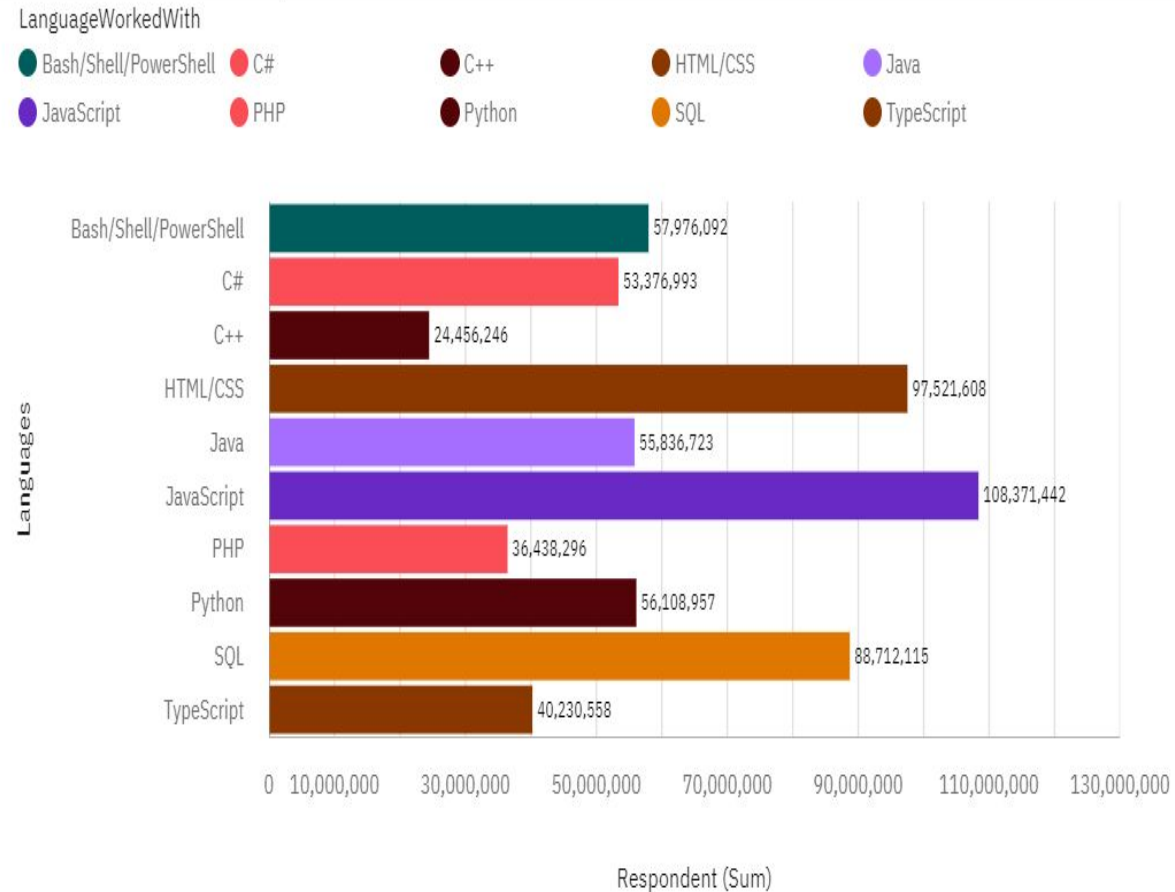❖ Data Visualization

RESULTS

	Respondent	LanguageWorkedWith	LanguageDesireNextYear	DatabaseWorkedWith	DatabaseDesireNextYear	PlatformWorkedWith
0	4	C	C	MySQL	MySQL	Linux
1	4	C++	C#	SQLite	SQLite	Windows
2	4	C#	JavaScript	NaN	NaN	NaN
3	4	Python	SQL	NaN	NaN	NaN
4	4	SQL	NaN	NaN	NaN	NaN
...	...	...	...	...	...	...
74584	25142	Go	Python	NaN	NaN	NaN
74585	25142	HTML/CSS	R	NaN	NaN	NaN
74586	25142	PHP	NaN	NaN	NaN	NaN
74587	25142	Python	NaN	NaN	NaN	NaN
74588	25142	R	NaN	NaN	NaN	NaN

PROGRAMMING LANGUAGE TRENDS

Current Year   Next Year

LanguageWorkedWith

- Bash/Shell/PowerShell
- C#
- C++
- HTML/CSS
- Java
- JavaScript
- PHP
- Python
- SQL
- TypeScript

Language	Respondent (Sum)
Bash/Shell/PowerShell	57,976,092
C#	53,376,993
C++	24,456,246
HTML/CSS	97,521,608
Java	55,836,723
JavaScript	108,371,442
PHP	36,438,296
Python	56,108,957
SQL	88,712,115
TypeScript	40,230,558

Top 10 Desired Languages to Learn Next Year

LanguageDesireNextYear

- Bash/Shell/PowerShell
- C#
- Go
- HTML/CSS
- Java
- JavaScript
- Kotlin
- Python
- SQL
- TypeScript

Language	Respondent (Sum)
Bash/Shell/PowerShell	38,409,434
C#	44,603,822
Go	34,588,729
HTML/CSS	65,736,854
Java	36,736,341
JavaScript	82,435,603
Kotlin	23,464,961
Python	65,819,056
SQL	62,270,210
TypeScript	50,369,647

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PROGRAMMING LANGUAGE TRENDS - FINDINGS & IMPLICATIONS

Findings:

❖ JavaScript seems to keep as leading language
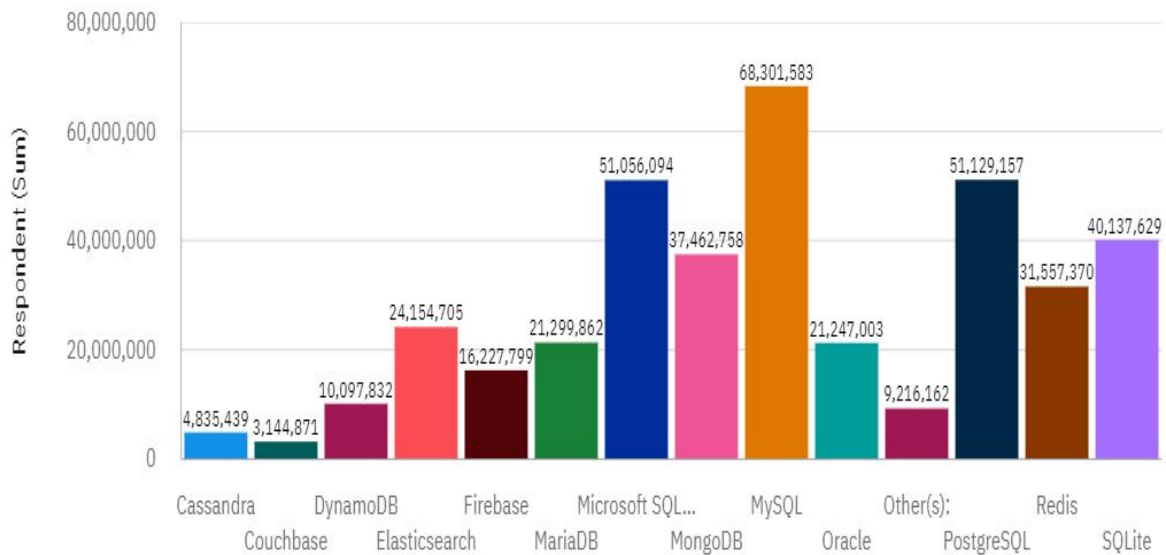❖ Python fastest-growing.
❖ Great interest in TypeScript

Implications:

❖ Web developments and Web developers are still in high demands
❖ JavaScript and TypeScript are crucial to learn for developers
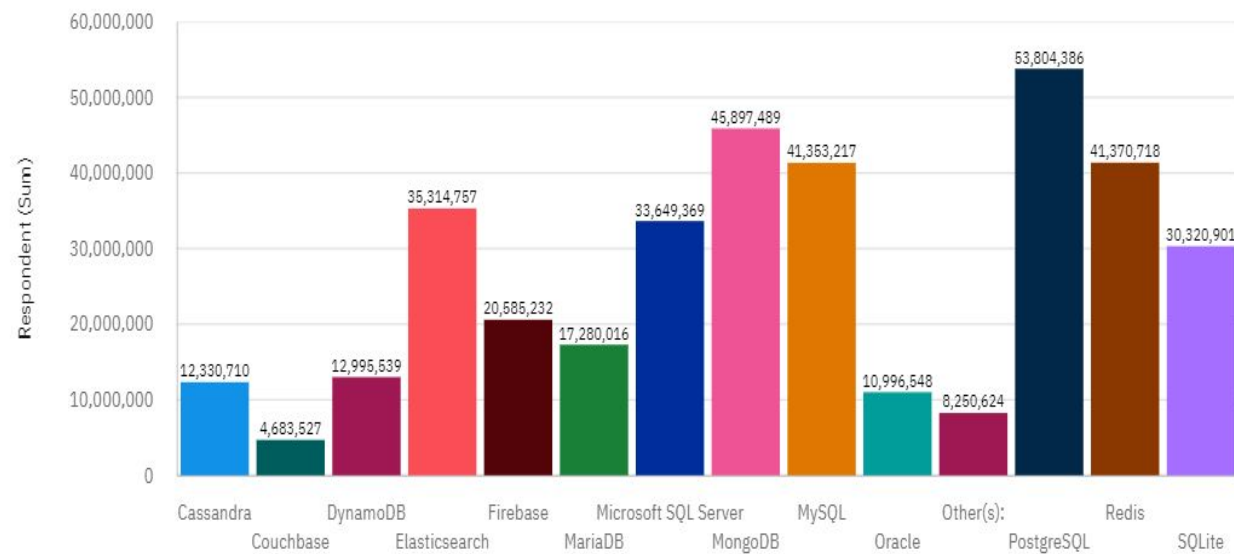❖ Python is the new trending language, especially popular in AI fields

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DATABASE TRENDS

Current Year

Next Year

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DATABASE TRENDS - FINDINGS & IMPLICATIONS

Findings:

❖ MySQL as most used database.

❖ Lack of interest in Couchbase and Cassandra.

❖ Increasing interest in PostgreSQL and MongoDB.

Implications:

❖ Couchbase and Cassandra are losing ground in the market.

❖ PostgreSQL and MongoDB establishment in the market.

❖ Software development and Big Data technology still requires SQL

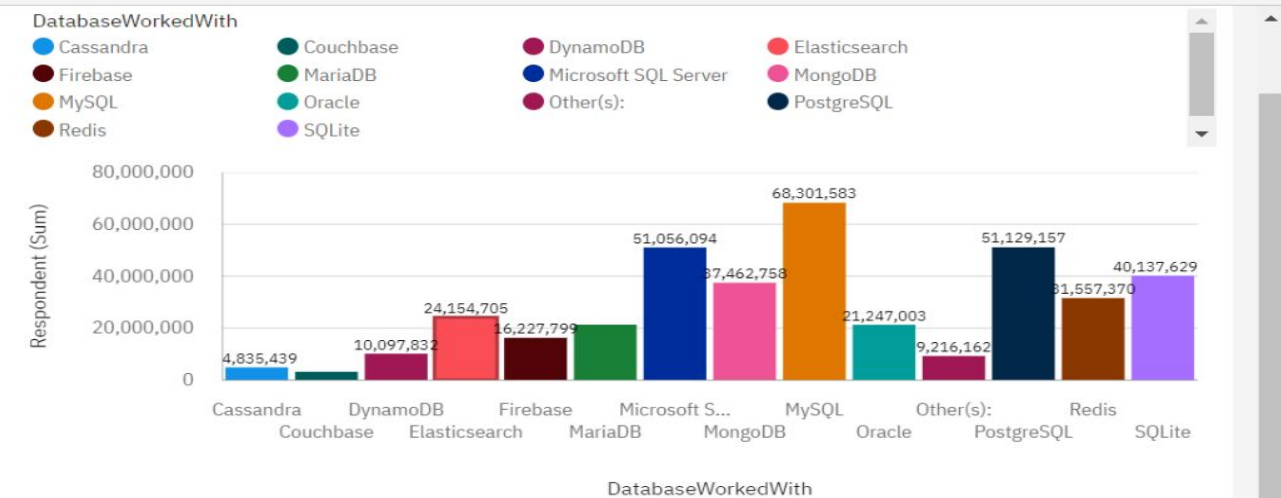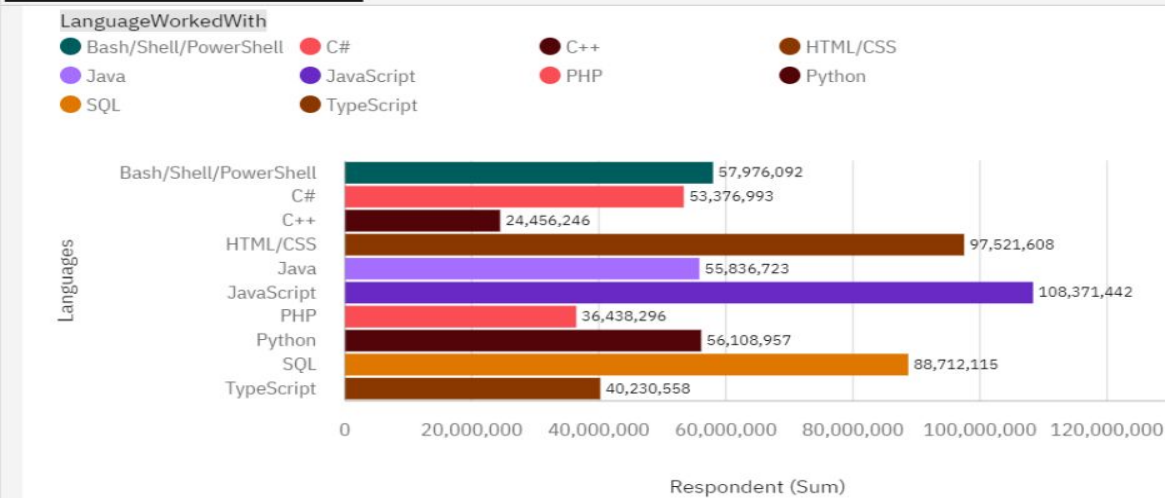❖ NoSQL databases will make an impact for relational databases

DASHBOARD

The permanent link of the read-only view of the Cognos dashboard:
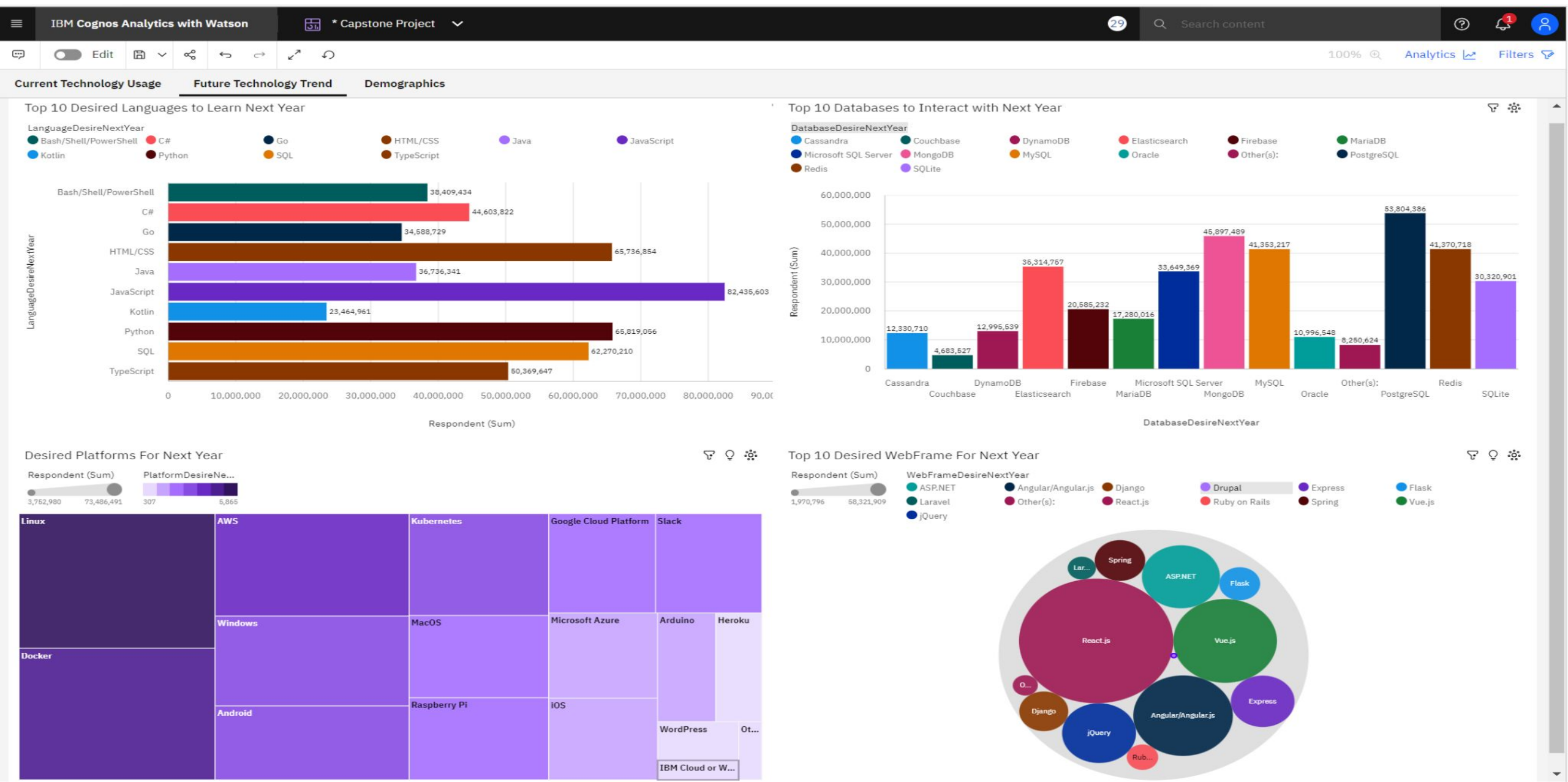
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https://us1.ca.analytics.ibm.com/bi/?pers
pective=dashboard&pathRef=.my_folders%2FC
apstone%2BProject&action=view&mode=dashbo
ard&subView=model0000018770ab41e0_0000000
2
```

DASHBOARD TAB 1
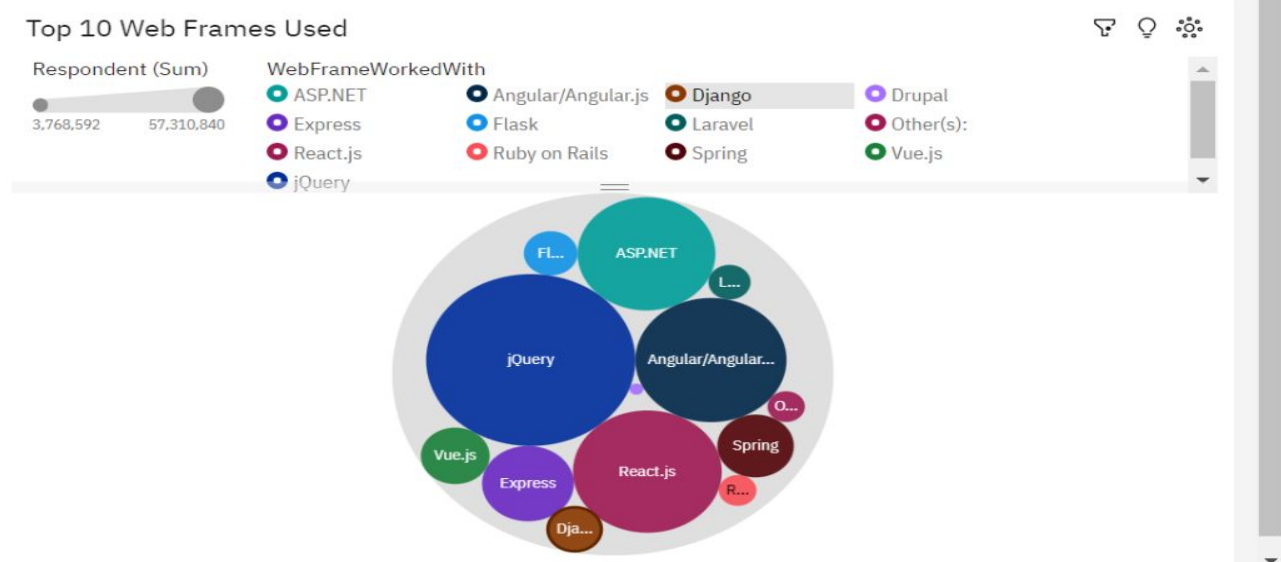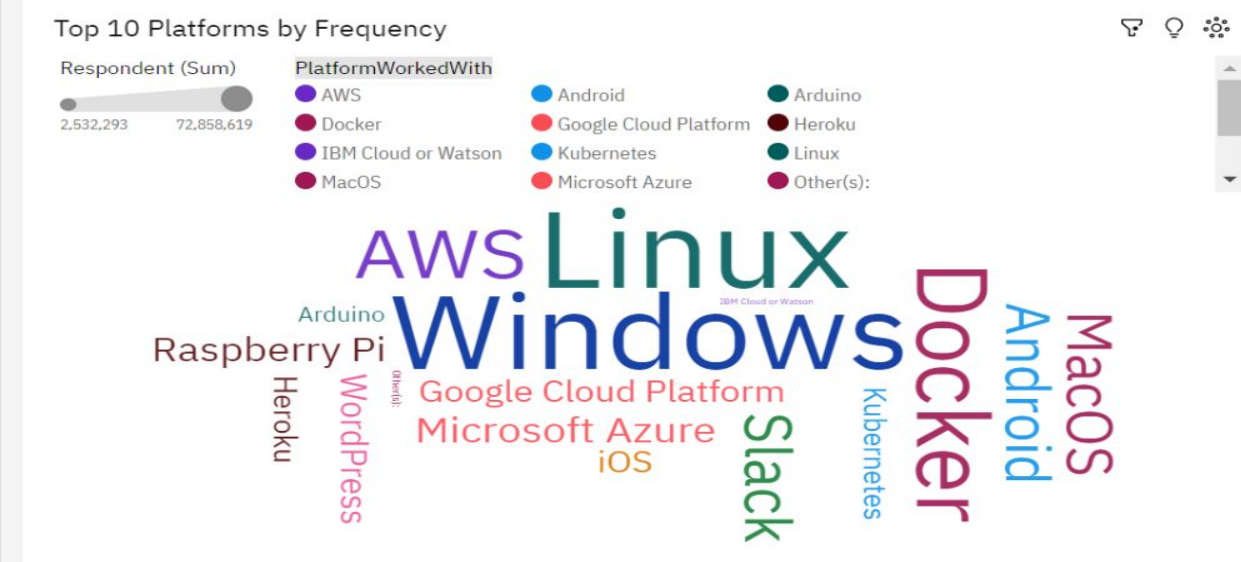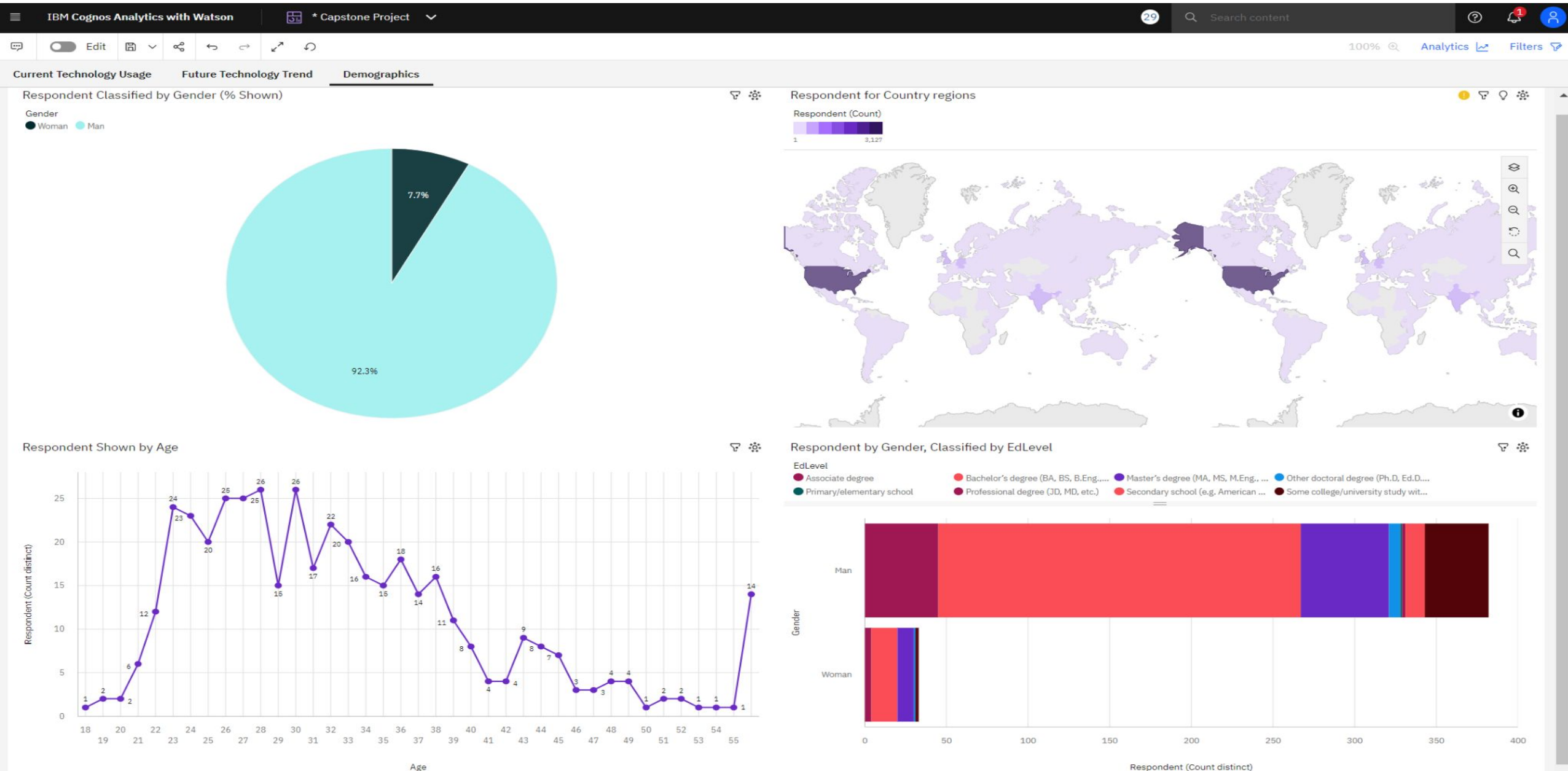
DASHBOARD TAB 2
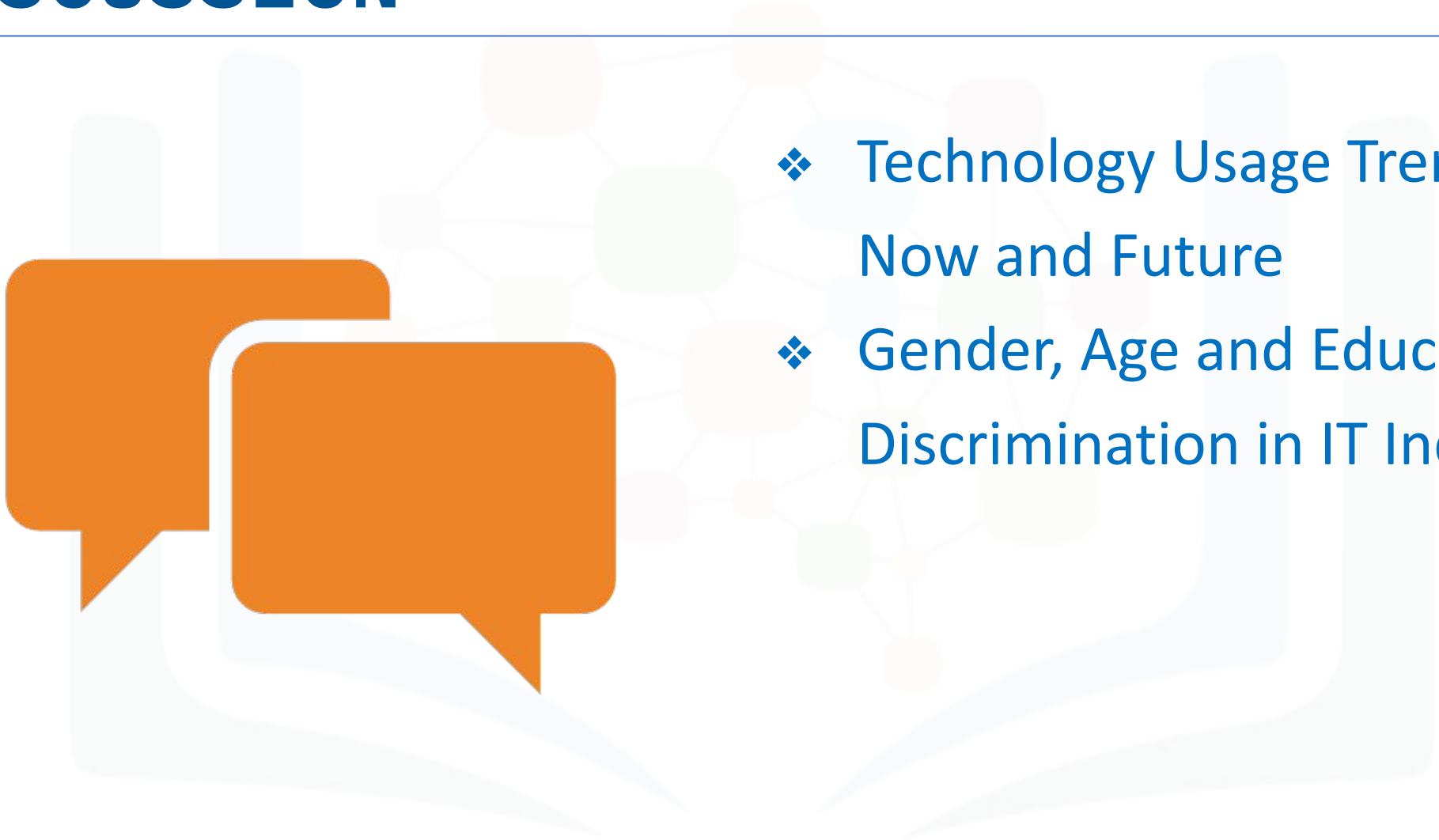
DASHBOARD TAB 3

DISCUSSION

❖ Technology Usage Trend Now and Future

❖ Gender, Age and Education Discrimination in IT Industry

OVERALL FINDINGS & IMPLICATIONS

Findings

- JavaScript widely used and TypeScript getting popular.

- Over 90% young male developers.

- Developers mostly located in developed countries

Implications

- JavaScript and TypeScript web frames gaining followers.

- Global polarization of developers location and gender

- Young developers without postgrad studies on its majority

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CONCLUSION

❖ Developers are people with very marked characteristics.

❖ A good idea of popularity trends of different tools, platforms and languages can be obtained.

❖ There is a job to be done to spread accessibility of this labor market to countries in development.
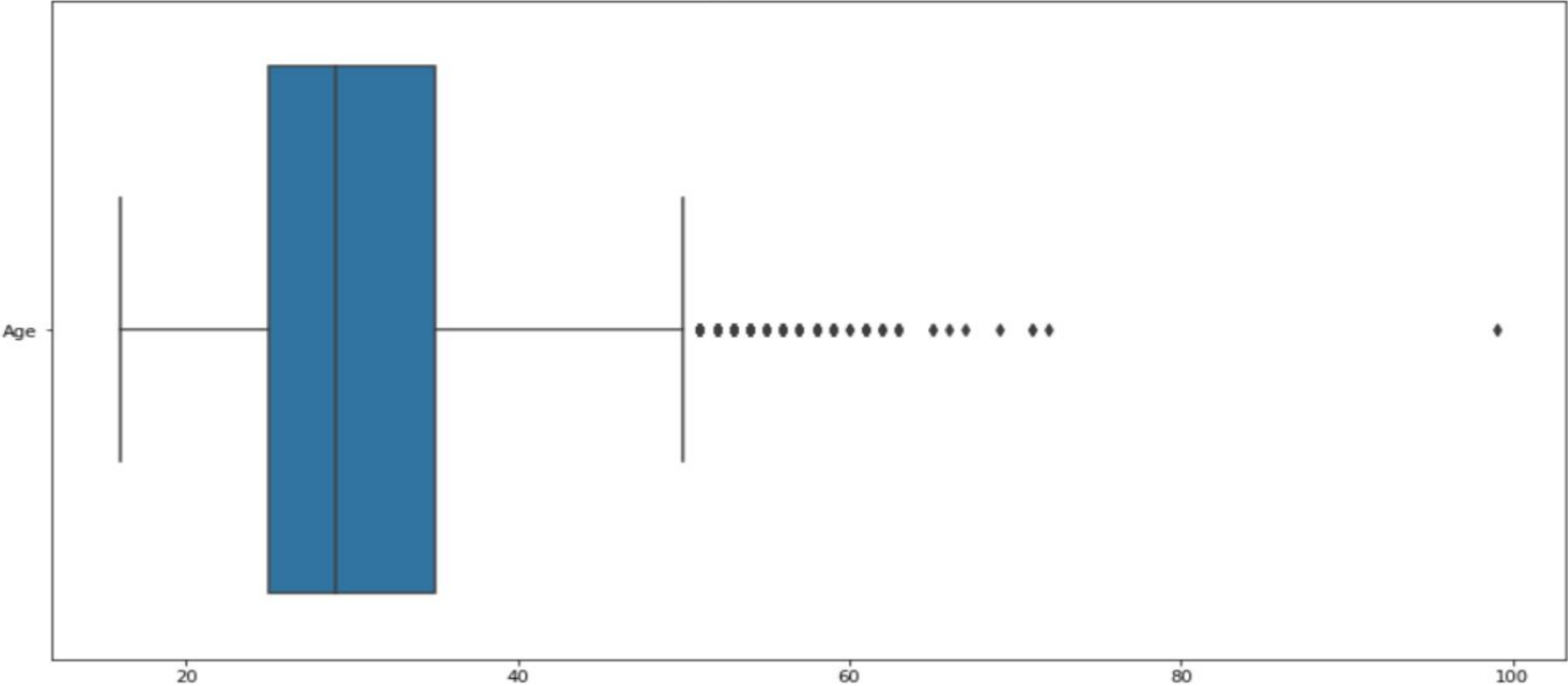
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APPENDIX

❖ IBM Cognos Dashboard Embedded (CDE) is an AI-fueled business intelligence service that supports the entire data analytics cycle, from discovery to operationalization. It provides users with data discovery capabilities to visually explore and interact with their data to identify the key insights for improving data driven decisions. Users can perform data discovery and then quickly assemble that information into interactive, visually appealing dashboards; all without the need of formal training

AGE DISTRIBUTION BOX PLOT

Age Distribution

JOB POSTINGS

POPULAR LANGUAGES

Average Annual Salary by Popular Languages

Language: C# ● C++ ● Go ● Java ● Javascript ● PHP ● Python ● R ● SQL ● Swift

Language	Average Annual Salary
Swift	130,801
Python	114,383
C++	113,865
Javascript	110,981
Java	101,013
Go	94,082
R	92,037
C#	88,726
SQL	84,793
PHP	84,727

Average Annual Salary (Average)

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