



Languages, Databases & Demographics: Our Journey Forward

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OUTLINE



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EXECUTIVE SUMMARY



- **Methodology:**
 - Survey with 20,000+ participants.
 - Data cleaned and anonymized.
- **Ranked Voting System:**
 - 100 votes allocated, max 10 per feature.
 - Captures nuanced user preferences.
- **Job Postings & Trends:**
 - Tracks industry demand for languages/databases.
 - Highlights geographic and industry-specific trends.
- **Survey Focus Shift:**
 - From languages/databases to feature preferences.

KAGGLE SURVEY METHODOLOGY



- Overview:** Conducted by Kaggle to gather insights from global data science professionals.
- Audience:** Data scientists, academics, and students across various experience levels.
- Distribution:** Promoted via Kaggle, social media, and email to over 5 million users.
- Duration:** Open for a few weeks with multiple reminders sent.
- Data Collection:** Anonymous responses on demographics, tools, and practices.
- Response Rate:** Over 20,000 participants from diverse regions.
- Processing:** Data cleaned and anonymized; publicly available for research.
- Reporting:** Results shared with the community in detailed reports.

INTRODUCTION PROPOSED SURVEY MODS



•Kaggle's Previous Focus

- *Languages and Databases:* Survey centered on the tools and technologies used.
- *Pros:*
 - Clear understanding of popular languages and databases.
 - Useful for benchmarking tool usage trends.
- *Cons:*
 - Limited insight into user needs and feature preferences.
 - Overemphasis on technology rather than user experience.

•Proposed Focus on Features

- *Shift to Features:* Survey now emphasizes desired features and user needs.
- *Pros:*
 - Better alignment with user needs and expectations.
 - Facilitates the development of more user-centric tools.
- *Cons:*
 - Potential for less emphasis on technological trends.
 - Requires careful interpretation of feature requests to avoid bias.

RANKED VOTING



RANKED VOTING SYSTEM WITH BUDGET

- **Voting Budget:**

- Each voter is allocated 100 votes.

- **Distribution:**

- Voters can allocate up to 10 votes per feature.
- Must allocate all 100 votes across their selected features.

- **Purpose:**

- Allows voters to express varying levels of preference.
- Ensures comprehensive input by requiring full vote allocation.

- **Benefits:**

- *Flexibility:* Voters can strongly support multiple features.
- *Precision:* Captures nuanced preferences and priorities.

RESULTS



TBD

PROGRAMMING LANGUAGE TRENDS

Current Year

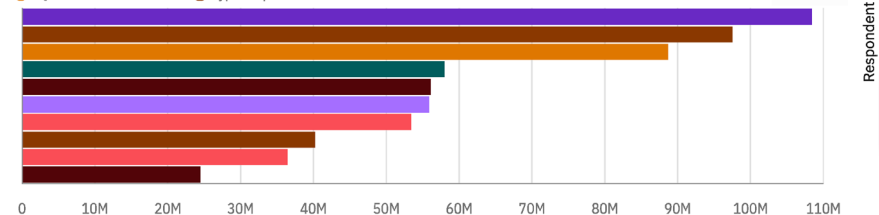
Next Year

CURRENT TECHNOLOGY USAGE

Top 10 LanguageWorkedWith

TOP 10 LANGUAGES WORKED WITH

Legend: Bash/Shell/PowerShell, C#, C++, HTML/CSS, Java, JavaScript, PHP, Python, SQL, TypeScript



Top 10 WebFramesWorkedWith

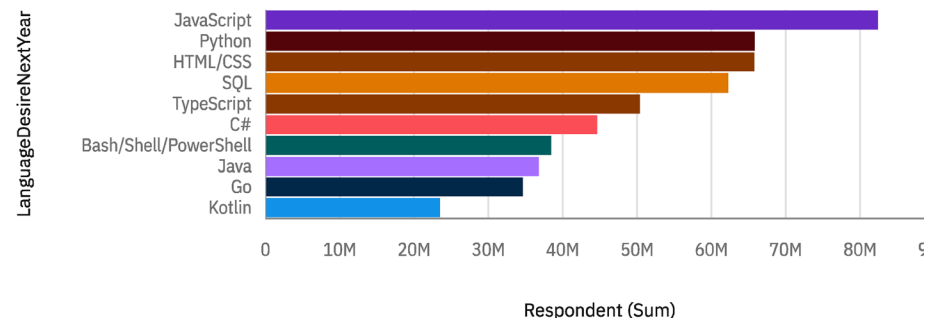
Platform

FUTURE TECHNOLOGY TRENDS

Top 10 LanguageDesireNextYear

LanguageDesireNextYear

Legend: Bash/Shell/PowerShell, C#, Go, HTML/CSS, Java, JavaScript, Kotlin, Python, SQL, TypeScript



PROGRAMMING LANGUAGE TRENDS - FINDINGS & IMPLICATIONS

Findings

Top 10 Language Desired Next Year

- C# Relative Rank Moved Up
- C Appears On List
- C++ Relative Rank Moved Up
- Go, Dart and Assembly Appear on List

Implications

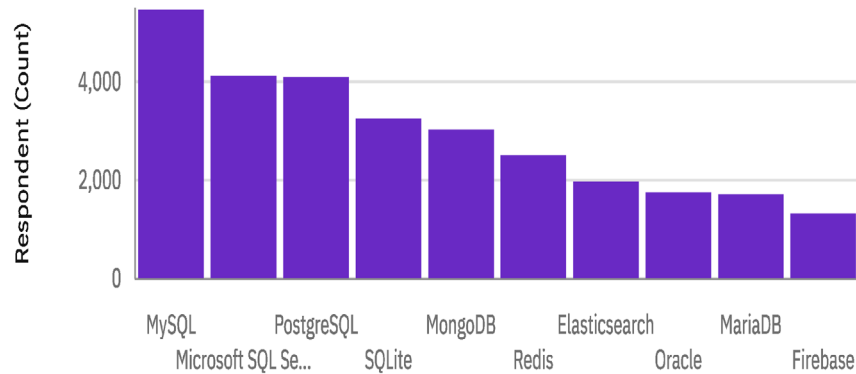
- Language Wants & Needs Change
- Need to Find Out What is Driving the Changes
- Need to Find Out If Changes are Warranted and Practical

DATABASE TRENDS

Current Year

Top 10 Database Worked With

2

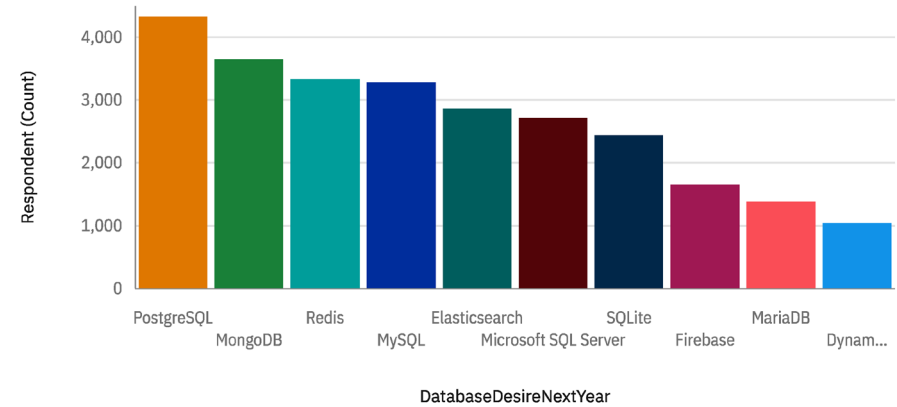


Top 10 Databases Worked With

Next Year

Top 10 Database Desire Next Year

5



Database Desire Next Year

DATABASE TRENDS - FINDINGS & IMPLICATIONS

Findings

Top 10 on Databases
DesiredNextYear

- MySQL Moved From Top to Bottom of List
- ElasticSearch Moved From Bottom to Top
- Cassandra and Couchbase Appear on List

Implications

- Database Wants and Needs are Changing
- Need to Figure Out What is Driving Change
- Need to Determine if Change is Practical

DASHBOARDS HERE



- <https://github.com/amenel030350/Dashboard-Submission/commit/6cba11b4bdb414a10f5f2688fe306e8d5ae37ab4>

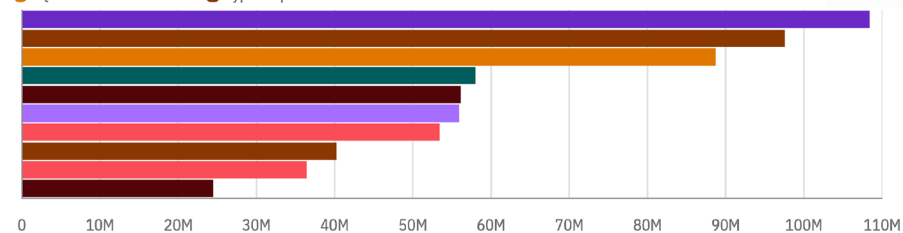
DASHBOARD TAB 1

CURRENT TECHNOLOGY USAGE

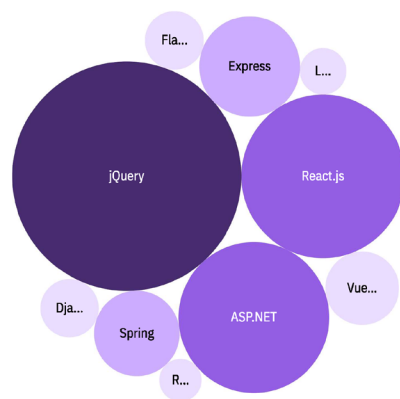
Top 10 LanguageWorkedWith

TOP 10 LANGUAGES WORKED WITH

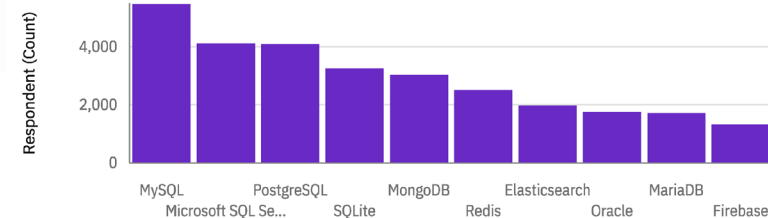
● Bash/Shell/PowerShell ● C# ● C++ ● HTML/CSS
● Java ● JavaScript ● PHP ● Python
● SQL ● TypeScript



Top 10 WebFramesWorkedWith



1 Top 10 DatabaseWorkedWith



Top 10 Databases Worked With

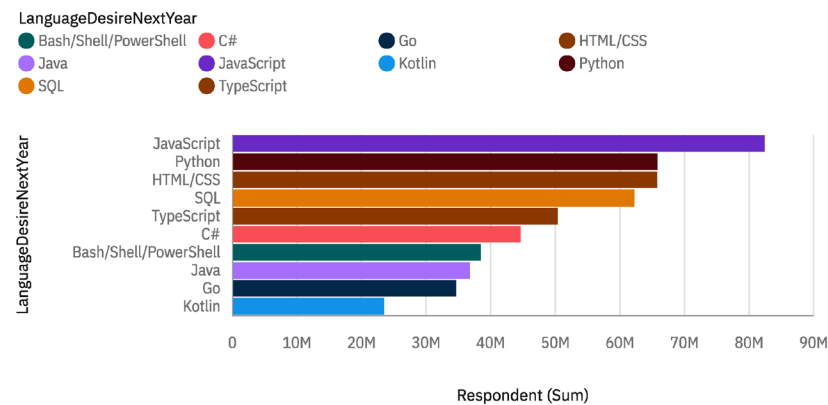
3 PlatformWorkedWith



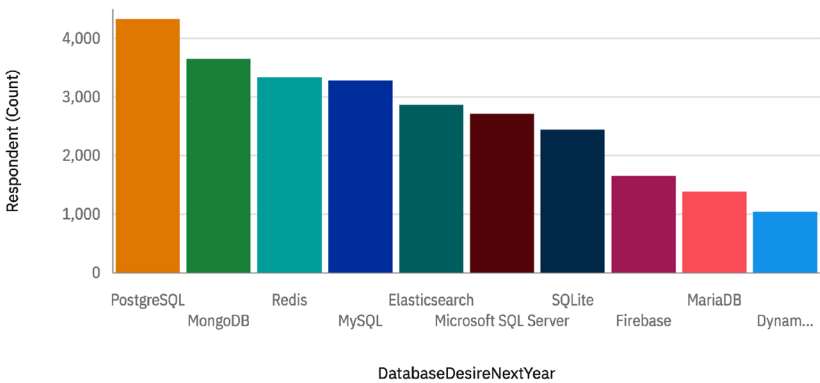
DASHBOARD TAB 2

FUTURE TECHNOLOGY TRENDS

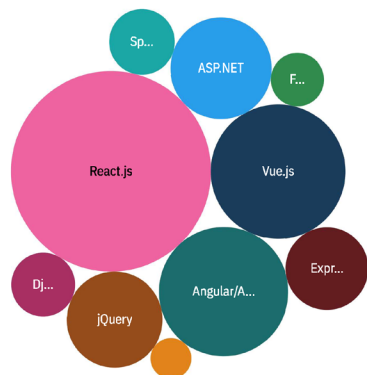
Top 10 LanguageDesireNextYear



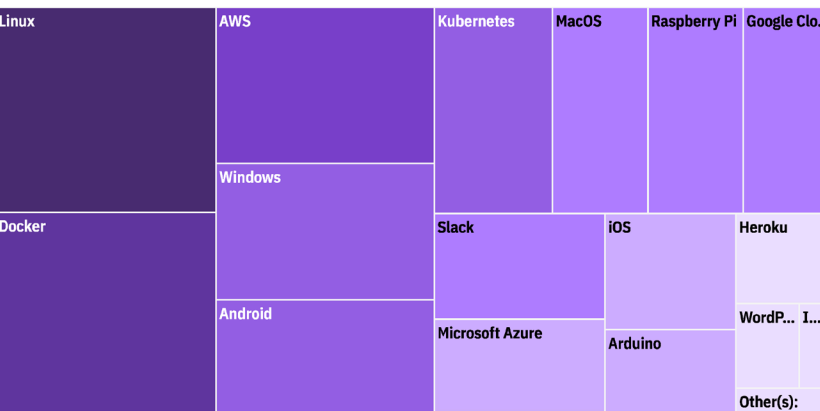
4 Top 10 DatabaseDesireNextYear



Top 10 WebFrameDesiredNextYear



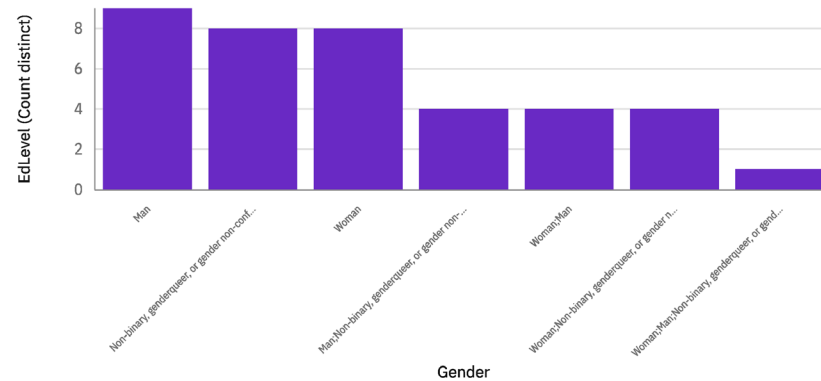
6 PlatformDesireNextYear



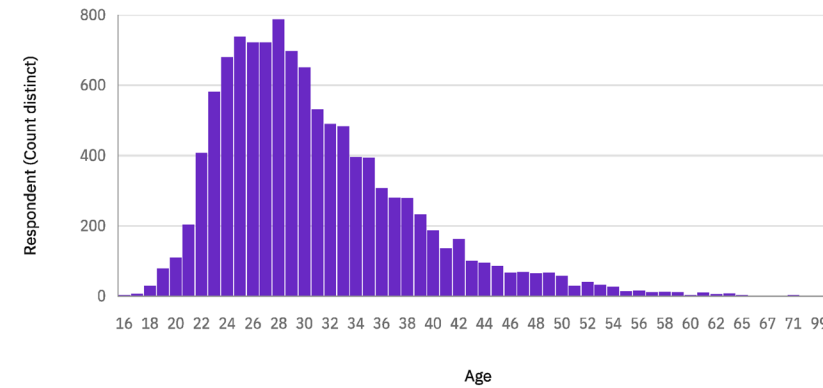
DASHBOARD TAB 3

DEMOGRAPHICS

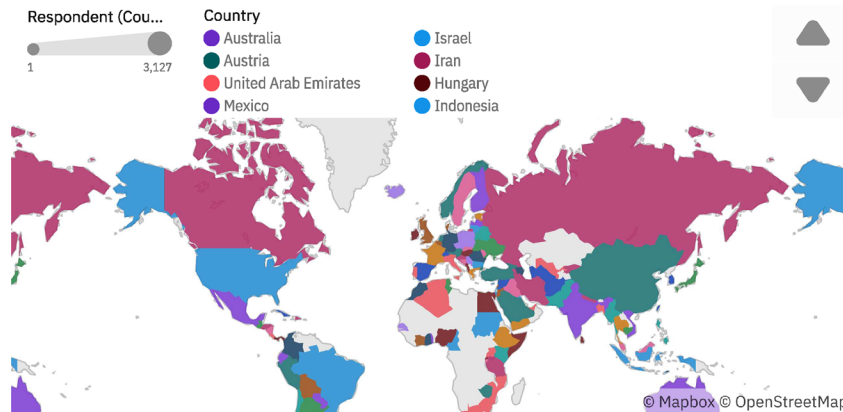
EdLevel by Gender



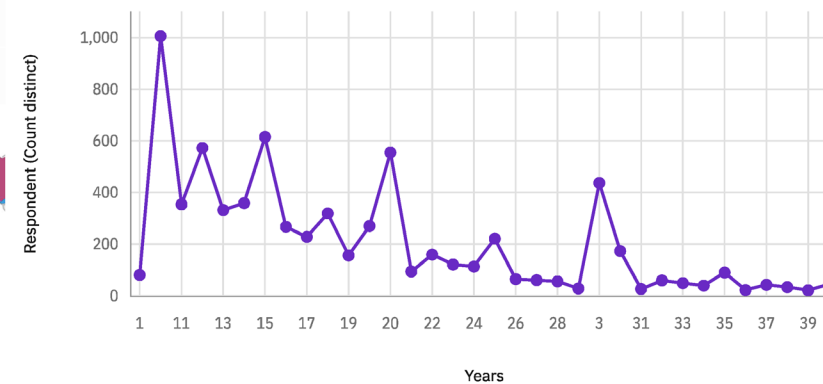
8 Respondents by Age



Respondents by Country



Respondent by YearsCode



DISCUSSION



TBD

OVERALL FINDINGS & IMPLICATIONS

- **Programming Language Trends:**

- **Findings:** Shifts in desired languages, with C#, C, and C++ rising in rank; new entrants like Go, Dart, and Assembly.
- **Implications:** The evolving needs suggest a dynamic shift in industry requirements, indicating the need to stay updated with newer languages.

- **Database Trends:**

- **Findings:** Notable changes include MySQL dropping in popularity and ElasticSearch rising; new entries like Cassandra and Couchbase.
- **Implications:** As database preferences shift, companies need to reassess their database strategies to align with current trends.

- **Job Posting Analysis:**

- **Findings:** Varying demand across regions and industries for specific languages and databases.
- **Implications:** Understanding these trends can guide job seekers and companies in focusing on in-demand skills and technologies.

CONCLUSION



- **Methodology Strength:**
 - High participation and comprehensive data cleaning ensure reliable findings.
- **Survey Evolution:**
 - Shift from language/database focus to feature-based insights reflects changing industry needs.
- **Ranked Voting Impact:**
 - Enhanced feature prioritization through flexible voting system captures user preferences more accurately.
- **Industry Trends:**
 - Analysis of job postings and database trends highlights dynamic shifts in technology demand.

APPENDIX



- Include any relevant additional charts, or tables that you may have created during the analysis phase.

JOB POSTINGS TRACK OVER TIME

- **Trend Analysis:** Track the frequency of mentions over time to spot rising or declining demand.
- **Regional Insights:** Identify geographic hotspots for specific skills.
- **Industry Focus:** Determine which industries prefer certain languages and databases.
- **Data Collection:** Aggregate job postings mentioning specific languages and databases.
- **Skill Combinations:** Spot common pairings of languages and databases in job postings.
- **Visualization:** Use charts to show changes in demand and technology adoption.
- **Forecasting:** Predict future demand based on historical trends.

POPULAR LANGUAGES

In Module 1 you have collected the job postings data using web scraping in a file named “popular-languages.csv”. Present that data using a bar chart here. Order the bar chart in the descending order of salary.