

Operation Analytics and Investigating Metric Spike Project

Project Description:

Operational Analytics is a crucial process that involves analysing a company's end-to-end operations. This analysis helps identify areas for improvement within the company.

One of the key aspects of Operational Analytics is investigating metric spikes. This involves understanding and explaining sudden changes in key metrics, such as a dip in daily user engagement or a drop in sales.

Your task will be to derive insights from this data to answer questions posed by different departments within the company. Your goal is to use your advanced SQL skills to analyse the data and provide valuable insights that can help improve the company's operations and understand sudden changes in key metrics.

Approach:

I went through the datasets provided by the Trainity Job Data and Investigation Metric Spike and understood that there were datasets each having tables and tasks for its own analysis. Further, I understood the columns and their respective constraints to do the analysis. I was given a set of questions to solve as part of the analysis. By using the MySQL Workbench, I did solve the SQL queries and provided the result as expected.

Tech-Stack Used:

MySQL Workbench – To answer the queries with the help of SQL language in the tool.

Microsoft Word – To prepare the reports for presenting to the leadership team.

Insights:

With the help of the SQL queries, I found out many insights for the case studies –

Case Study 1 (Job Data Analysis):

- Found the number of jobs reviewed per hour for each day in November 2020.

- Found the 7-day rolling average of throughput (number of events per second).
It is better to calculate the 7-day rolling average than daily metrics because we can find the averages for the past 6 days and the current day and conclude the insights. And it can be checked how the product was sold over a period of time.
- Calculated the percentage share of each language over the last 30 days.
- Checked if there are any duplicate rows in the table.

Case Study 2 (Investigating Metric Spike):

- Found the weekly user with the event type as engagement.
- Calculated the user growth of the product by using the sub-queries.
- Calculated the weekly retention of users based on their sign-up cohort by joining the user and event table.
- Found the weekly engagement per device from the events table.
- Calculated the email engagement metrics in the email events table.

Result:

Through this project I was able to understand my SQL skills and how to use Advanced SQL functions like Sub-Queries, Windows function to find the answer for the queries being addressed by the business stake holders. Have made some analysis for the Job Data and the Metric Spike. Have made me think how the business might think from their point of view and how they can find this Analysis helpful in growing insights from the raw dataset.

I have achieved the end result and I think I have contributed my full support into the Analysis. I hope this project helps the Analysis and it achieves what it was tend to achieve.