

# Analyzing and Designing Complex Systems using GraphQL (Part II)

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This project is phase two of Analyzing and Designing Complex Systems using GraphQL capstone project sponsored by Bank of America. Phase two consisted of providing necessary features to the foundation developed by the 2024 capstone team. Deliverables such as data visualization, data governance and data quality control were all vital components that needed to be incorporated into the project's system architecture. Important goals such as a redesigned frontend and varied data sources were also pursued. As of March 2025, the project's system architecture has been refined into a quick and efficient data management platform. Data visualization achieved through Tableau and a third party GraphQL connector provided by CData, brings about an improved understanding of the data across all its sources. Data governance achieved through Auth0 combined with native tools in Hasura, brings uncompromising security to the data. Data quality control achieved using Grafana allows not only for the tracking of queries and data movement, but also visualizations of these metrics leading to more accurate and interpretable description of where data leaks or errors occurred. Additionally, a redesigning of the React Frontend was also completed with a more user friendly and attractive user interface meant to act as a central hub for not only the system but also the project itself. Finally with the addition of several varied databases showcasing the versatility of Hasura, all the goals the group set out to achieve were met tenfold.

Keywords: GraphQL, Auth0, Hasura, React

