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A Demonstration of Several Analytic Uses Cases with OHDSI Component Deployed on Google BigQuery

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Abstract

The Observational Health Data Sciences and Informatics (OHDSI) software supports multiple open source and commercial database systems. However, until recently, Google Big Query--a storage mechanism designed for large dataset analytics that is part of Google Cloud, a commercial platform as a service (PAAS) --was not one of them. In this demonstration, we step through several analytic use cases (including data characterization and summarization, cohort definition, cohort generation and population effect estimation) using core OHDSI components (Achilles, WebAPI and Atlas) that have been enhanced to interoperate with BigQuery (and other Google Cloud components). This demonstration of interoperability with BigQuery (and other Google Cloud components) not only expands the set of data storage systems supported by OHDSI software but also advances and supports efforts to adopt OHDSI standards and software by initiatives and projects that already use or intend to use BigQuery (and other Google Cloud components), such as All of Us, a high profile precision medicine initiative.