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ETL Data Warehouse Implementation for Enhanced Analytics

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Abstract: *This paper details the design and implementation of a 3-Layer ETL Data Warehouse Architecture as a robust solution to address challenges in traditional data management, such as inconsistent data formats, delayed processing, and limited analytical accuracy. The system employs the Extract, Transform, Load (ETL) process to systematically collect, integrate, and organize data from diverse operational sources into a centralized, analytics-ready repository. Key implementation aspects include source-system extraction, cleansing, validation, and standardization within the staging and transformation layers, utilizing technologies such as Python, SQL, and MySQL. The resulting architecture ensures efficiency, reliability, security, and provides rapid access to clean, structured information for data-driven decision-making*

Keywords: ETL, Data Warehouse, Data Science, Data Engineering, 3-Layer Architecture

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