

EXECUTIVE SUMMARY

Business Intelligence Pipeline for Melodica Media Corp.

Melodica Media Corp., a leading multinational headquartered in California, has embarked on a strategic initiative to enhance its decision-making processes through the development of a robust Business Intelligence (BI) pipeline. Our dedicated BI team, entrusted with this mission, has successfully crafted a comprehensive pipeline comprising a Data Warehouse (DW) with a Star Schema, code scripts for creating the databases and updating them, an alternative automation solution in SSIS for the latter, an SSAS package for filtering some data, and a dynamic Power BI report for sales analysis.

Components of the BI Pipeline:

- 1. SQL Scripts for Staging Area:**
 - An intermediate staging area has been established to create the Staging Area database and to facilitate seamless data processing. It incorporates Slowly Changing Dimension (SCD) Type 2 for the customer table, ensuring the retention of historical values for comprehensive customer data analysis. A Schema for the Staging Area is also provided if needed.
- 2. SQL Scripts for Incremental Loading for the Staging Area and Maintenance:**
 - The BI pipeline features robust scripts for incremental loading, seamlessly updating the staging area and subsequently loading new data into the Data Warehouse. Continuous maintenance processes have been implemented to uphold data integrity and ensure optimal performance. The implementation of incremental loading for the fact table enables real-time updates and captures new data efficiently.
- 3. SSIS Solution:**
 - SQL Server Integration Services packages encapsulated in Visual Studio solution to facilitate the development and maintenance of a Data Warehouse (DW) and Staging Area.
- 4. SQL Scripts and a database document for Data Warehouse (Star Schema):**
 - Leveraging data from the provided Online Transaction Processing (OLTP) database, our team has meticulously designed and implemented a Data Warehouse with a Star Schema. This schema optimizes analytical queries for efficient sales analysis.
- 5. SSAS Solution:**
 - SQL Server Analysis Services Tabular model and DAX measures, a component of the project which adjusts the metrics and dimensions given by the DW database, positioning the organization to glean actionable insights from its data. The focus on performance optimization and user-friendly design underscores our commitment to delivering a sophisticated analytical environment tailored to the unique needs of the business.
- 6. Power BI Report for Sales Analysis:**
 - To empower Melodica with actionable information, a dynamic Power BI report has been developed. This report draws data through a live connection with the Tabular model based on the Data Warehouse. The interactive interface facilitates comprehensive sales analysis and supports strategic decision-making. It comprises a variety of graphs, charts and dashboards which illustrate visually captivating key insights.

Conclusion: In conclusion, our BI team's collaborative efforts have resulted in the successful implementation of a comprehensive Business Intelligence pipeline for Melodica Media Corp. The Data Warehouse, Staging Area, and Power BI report collectively form a powerful infrastructure for track sales analysis, providing Melodica with the tools needed to make informed decisions and drive strategic growth in the dynamic online music market.