Data Warehousing with IBM Cloud Db2 Warehouse

Project Overview

The project aims to design and implement a data warehouse using IBM Cloud Db2 Warehouse. The primary goal is to consolidate data from diverse sources, perform advanced data integration and transformation, and empower data architects with the tools required for data exploration, analysis, and decision-making support.

Project Phases:

Data Warehouse Structure Design:

Task 1: Define the schema and structure of the data warehouse.

Task 2: Choose appropriate data modeling techniques (e.g., star schema) based on business needs.

Task 3: Ensure scalability for future data growth.

Data Integration Strategy:

Task 1: Identify data sources (e.g., databases, APIs, flat files) to be integrated.

Task 2: Create a detailed mapping of source data to the data warehouse schema.

Task 3: Develop strategies for efficient data extraction.

ETL Process Implementation:

Task 1: Select ETL tools or frameworks that align with project requirements.

Task 2: Implement ETL processes to extract, transform, and load data into the data warehouse.

Task 3: Ensure data quality and consistency during transformation.

Data Exploration and Analysis Tools:

Task 1: Design queries and analysis techniques for data exploration.

Task 2: Provide data architects with tools and resources for analyzing data effectively.

Task 3: Establish data governance practices for data security and access control.

Actionable Insights and Decision Support:

Task 1: Focus on delivering actionable insights to stakeholders.

Task 2: Enable informed decision-making by providing timely and accurate data.

Task 3: Monitor data warehouse performance and optimize as needed.

Project Deliverables:

- Data warehouse schema and structure documentation.
- Data integration strategy and source-to-target mapping.
- ETL processes implemented and documented.
- Data exploration queries and analysis techniques.
- Actionable insights and decision support framework.

Project Team:

- Project Manager
- Data Architects
- Data Engineers
- Database Administrators
- Data Analysts

Key Stakeholders:

- Business Leaders
- Data Architects
- Data Analysts
- IT Department

Project Success Criteria:

- Successful deployment of the IBM Cloud Db2 Warehouse data warehouse.
- Integration of all identified data sources with high data quality.
- Availability of efficient ETL processes.
- Data architects empowered to explore and analyze data effectively.
- Stakeholders making informed decisions based on actionable insights.

Phase 1: Data Warehouse Structure Design

Task 1: Defined the schema and structure of the data warehouse.

Task 2: Chose the star schema data modeling technique to align with business needs.

Task 3: Ensured scalability for future data growth.

Phase 2: Data Integration Strategy

Task 1: Identified data sources including databases, APIs, and flat files.

Task 2: Created a detailed mapping of source data to the data warehouse schema.

Task 3: Developed strategies for efficient data extraction.

Phase 3: Development Part 1

Task 1: Started building the data warehouse using IBM Cloud Db2 Warehouse.

Task 2: Defined the schema and structure of the data warehouse tables.

Task 3: Designed a strategy to integrate data from sources such as CSV files and databases.

Phase 4: Development Part 2

Task 1: Implemented ETL processes to extract, transform, and load data into the data warehouse.

Task 2: Enabled data architects to explore and analyze data within Db2 Warehouse using SQL queries and analysis techniques.

Phase 5: Project Documentation & Submission

Documentation

- Outlined the project's objective, design thinking process, and development phases.
- Described the data warehouse structure, data integration strategies, ETL processes, and data exploration techniques.
- Explained how the data warehouse enables data architects to deliver actionable insights.

Submission

- Shared the GitHub repository link containing the project's code and files.
- Provided instructions on how to deploy and manage the data warehouse using IBM Cloud Db2 Warehouse.

Wrote a detailed README file explaining how to navigate the website, update content, and any dependencies.

This project plan provides a solid foundation for your IBM Cloud Db2 Warehouse data warehousing implementation. It's important to adjust the project timeline, tasks, and team composition as needed to align with your specific project requirements and constraints.