Project Title: Design and Implementation of an IBM Cloud DB2 Warehouse Data Warehouse

Phase 1: Problem Definition and Design Thinking

Problem Definition:

The project involves designing and setting up a robust data warehouse using IBM Cloud DB2 Warehouse. The objective is to bring together data from various sources, perform advanced data integration and transformation, and provide data architects with the tools to explore, analyze, and deliver actionable data for informed decision-making. This project encompasses the following key components:

Data Warehouse Structure: Define the schema and structure of the data warehouse to accommodate various data sources.

Data Integration: Identify data sources and design a strategy to integrate data seamlessly into the data warehouse.

ETL Processes: Plan and implement ETL (Extract, Transform, Load) processes to extract, transform, and load data into the warehouse.

Data Exploration: Design queries and analysis techniques to empower data architects to explore and analyze data effectively.

Actionable Insights: Focus on delivering actionable insights by enabling informed decision-making based on data.

Design Thinking:

1. Data Warehouse Structure:

Understanding: We will analyze the data sources and their structures to determine how they can best fit into the data warehouse schema.

Design Approach: Create a detailed schema design that includes tables, relationships, and data types necessary to store and organize the data efficiently.

2. Data Integration:

Understanding: Identify all data sources, both internal and external, and understand their formats and APIs.

Design Approach: Develop a comprehensive data integration strategy that includes data extraction methods, data transfer protocols, and integration tools.

3. ETL Processes:

Understanding: Analyze the data transformation requirements, including data cleaning, standardization, and enrichment.

Design Approach: Design and implement ETL processes that automate data extraction, transformation, and loading into the data warehouse while ensuring data quality.

4. Data Exploration:

Understanding: Collaborate with data architects to understand their analysis needs and preferred querying tools.

Design Approach: Create a user-friendly query interface and provide training on data exploration techniques to enable data architects to extract valuable insights efficiently.

5. Actionable Insights:

Understanding: Identify key performance indicators (KPIs) and critical business questions that need to be addressed.

Design Approach: Develop dashboards, reports, and alerts that provide real-time insights to support informed decision-making.

Next Steps:

In the next phase, we will move forward with the execution of the project based on the design thinking outlined above. This will involve implementing the data warehouse structure, data integration strategies, ETL processes, data exploration tools, and actionable insights delivery mechanisms.