MAKERERE UNIVERSITY BUSINESS SCHOOL
COURSEWORK TWO FOR THE
DEGREE OF BACHELOR OF BUSINESS COMPUTING (BBC)
OF MAKERERE UNIVERSITY, ACADEMIC YEAR 2023/ 2024

COURSE NAME: Business Intelligence and Data warehousing
COURSE CODE: BUC2225 **YEAR OF STUDY**: Two **SEMESTER**: Two
DUE DATE: Saturday 13th April 2024

Project Description:

You've been tasked with developing a comprehensive data warehousing and business intelligence solution for Global Super Store to analyze performance and forecast future trends. The company operates in multiple regions and sells a variety of products through both physical stores and online channels. The objective of the project is to provide actionable insights to optimize business strategies, inventory management, and resource allocation.

Project Requirements:

Data Integration:

- Collect sales data from various sources including point-of-sale systems, online transactions, inventory databases, and customer relationship management (CRM) systems.
- Integrate and cleanse the data to ensure consistency, accuracy, and completeness. This involves handling data from disparate sources, resolving inconsistencies, and removing duplicates.

Data Warehousing:

- Design and implement a dimensional data model suitable for sales analysis. Utilize star schema or snowflake schema based on the requirements.
- Create a data warehouse to store historical sales data efficiently. Implement appropriate indexing, partitioning, and optimization techniques for improved performance.

ETL Processes:

- Develop Extract, Transform, Load (ETL) processes to populate the data warehouse with updated sales data on a regular basis. Transform and aggregate the data to

derive meaningful measures such as sales revenue, profit margins, product performance, customer demographics, and regional sales trends.

Business Intelligence and Reporting:

- Build interactive dashboards and reports using BI tools such as Tableau, Power BI, or similar.
- Visualize key performance indicators (KPIs) such as sales trends over time, product sales distribution, regional comparisons, and customer segmentation.
- Enable drill-down capabilities to explore data at different levels of granularity and analyze factors influencing sales performance.

Advanced Analytics and Forecasting:

- Apply advanced analytics techniques such as regression analysis, time series forecasting, and predictive modeling to forecast future sales trends.

Deliverables:

- Detailed project plan outlining the timeline, tasks, and resources required for each phase of the project.
- Data warehouse schema design documentation including entity-relationship diagrams, data flow diagrams, and schema definitions.
- ETL scripts and documentation describing the data extraction, transformation, and loading processes.
- BI dashboards and reports showcasing sales performance metrics and insights.
- Documentation on advanced analytics methodologies used for sales forecasting and the results obtained.
- Presentation to stakeholders demonstrating the project outcomes, key findings, and recommendations for improving sales performance.