TITLE:DATA WAREHOUSING WITH IBM CLOUD Db2 WAREHOUSE

Project Overview:

The project is a student information system that aims to streamline the process of managing and accessing student details within the college. It is designed to handle data for five different departments, with each department having five students.

Key Features:

Departmental Structure:

The system is organized into five departments, representing different academic disciplines within the college.

Student Information:

For each department, there are twenty students, resulting in a total of 5 departments * 20 students = 100 students in the system. (We can modify the count of the student)

Data Collection:

The project involves the collection of various student details, including but not limited to:

- Full Name
- Register Number (a unique identifier for each student)
- Department
- Academic Information (courses, grades)
- Contact Information

We can add extra information about the student

User Interface:

The system provides a user-friendly interface for entering a student's register number. This serves as a key to accessing the student's entire profile.

Data Retrieval:

When a register number is entered into the system, the project's backend logic retrieves the corresponding student's details from the database.

Comprehensive Display:

The system displays a comprehensive set of details about the student, offering a holistic view of their academic and personal information.

Secure Access:

Access to student details is secured, ensuring that only authorized individuals, such as faculty or administrative staff, can retrieve and view the information.

Using IBM cloud

- Sign up for IBM Cloud: If you don't have an IBM Cloud account, sign up for one
- For this data warehousing project we are using IBM cloud db2 warehouse.

Why IBM cloud db2 warehouse is used for:

Data Integration and Consolidation:

Db2 Warehouse can integrate data from various sources, allowing the consolidation of student details from different departments into a centralized repository. This is important for creating a unified view of student information.

Scalability:

Db2 Warehouse is designed to handle large volumes of data and is scalable to accommodate increasing data requirements. This is beneficial in a college setting where data may grow over time as more students are enrolled.

Ease of Use:

Db2 Warehouse offers user-friendly interfaces for data management and querying. This is important for users, such as faculty or administrative staff, who need to interact with the system to retrieve student details.

Integration with IBM Cloud Services:

If the college is using other IBM Cloud services, Db2 Warehouse can seamlessly integrate with them. This could include services for analytics, machine learning, or additional data processing.

Reliability and Availability:

Db2 Warehouse is designed for high availability and reliability. This ensures that the system is accessible when needed, especially during critical times such as examination periods or grading sessions.

AI & ADS (Artificial Intelligence & Advanced Analytics):

Artificial Intelligence and Advanced Analytics play a significant role in enhancing data warehousing projects. AI can be employed for data analysis, predictive modeling, and pattern recognition. It can help in extracting valuable insights from large datasets, improving decision-making processes, and optimizing data warehouse performance.

DAC (Data Acquisition and Control):

Data Acquisition and Control systems are crucial for collecting and managing data from various sources. In a data warehousing project, DAC systems help in the extraction of data from diverse operational systems, transforming it into a suitable format, and loading it into the data warehouse. It ensures that the data is accurate, consistent, and timely.

IOT (Internet of Things):

While IoT is not directly used in data warehousing, it is possible that data from IoT devices might be integrated into data warehousing systems for analysis, especially when dealing with large volumes of data generated by IoT devices.

CAD (Computer-Aided Design):

CAD is primarily used in the field of engineering and design and is not directly related to data warehousing. However, if a data warehousing system is employed in an engineering or manufacturing context, CAD data might be stored within the data warehouse.