SRPCE

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SEMESTER:- 5

BRANCH:- computer science and engineering

SUBJECT:- cloud Application Development

IBM Cloud Data Warehousing

Write a introduction and module for data warehousing with IBM cloud with sample program in phase 2.

Introduction to Data Warehousing with IBM Cloud

Data warehousing is a crucial component of modern businesses, providing a centralized repository for storing, managing, and analyzing vast amounts of data. IBM Cloud offers a robust and scalable platform for data warehousing, enabling organizations to leverage the power of cloud-based solutions for their data needs.

Module 1: Understanding Data Warehousing

In this initial module, we will introduce the fundamental concepts of data warehousing. Participants will gain insights into the importance of data warehousing in the context of modern businesses. The key topics covered will include:

- What is Data Warehousing?
- Why Data Warehousing is Essential
- Benefits and Use Cases
- Data Warehousing Architecture
- IBM Cloud's Role in Data Warehousing

Module 2: IBM Cloud Data Warehousing Services

This module delves into IBM Cloud's data warehousing services. Participants will learn about the various data warehousing solutions offered by IBM Cloud and understand their unique features and capabilities. Topics covered include:

- IBM Cloud Data Warehousing Services Overview
- IBM Db2 Warehouse on Cloud
- IBM Netezza Performance Server
- Data Warehousing with IBM Watson Studio
- Key Features and Benefits

Module 3: Getting Started with IBM Cloud Data Warehousing

Participants will learn how to set up and configure a data warehousing environment in IBM Cloud. We'll cover the step-by-step process of creating a data warehouse instance and configuring it for specific business needs.

Module 4: Data Integration and ETL

This module focuses on data integration and ETL (Extract, Transform, Load) processes within IBM Cloud data warehousing. Participants will learn how to connect, ingest, and transform data from various sources into their data warehouse.

Sample Program in Phase 2

In Phase 2 of the training, we will dive into practical implementation. Participants will work with sample code and hands-on exercises to better understand data warehousing in IBM Cloud. Here's a glimpse of a sample program that can be part of this phase:

python Copy code

```python
# Sample Program: Loading Data into IBM Db2 Warehouse on Cloud

# Import necessary libraries
import ibm_db

# Set connection parameters
conn_str = "DATABASE=<database_name>;HOSTNAME=<hostname>;PORT=<por

# Connect to the database
conn = ibm_db.connect(conn_str, "", "")

# Prepare SQL statement
sql = "INSERT INTO CUSTOMERS (CUSTOMER_ID, NAME, EMAIL) VALUES (?,

# Data to be inserted
data = [(1, 'John Doe', 'johndoe@example.com'), (2, 'Jane Smith',

# Execute the SQL statement for each data point
for item in data:
    stmt = ibm_db.prepare(conn, sql)
    ibm_db.bind_param(stmt, 1, str(item[0]))
    ibm_db.bind_param(stmt, 2, item[1])
    ibm_db.bind_param(stmt, 3, item[2])
```

```
    ibm_db.execute(stmt)

# Commit the transaction
ibm_db.commit(conn)

# Close the database connection
ibm_db.close(conn)
```

This program demonstrates how to connect to an IBM Db2 Warehouse on Cloud instance, prepare SQL statements, and insert data into a table. In Phase 2, participants will work on similar examples and projects to gain practical experience in data warehousing with IBM Cloud.

The training program will further progress with advanced topics, best practices, and real-world use cases to empower participants with the knowledge and skills necessary for effective data warehousing with IBM Cloud.