

SRPCE

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**NAME:-** A.Pandian

**ROLL NO:-** 23

**REG NO:-** 422021104023

**SEMESTER:-** 5

**BRANCH:-** computer science and engineering

**SUBJECT:-** cloud Application Development



# IBM Cloud Data Warehousing

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Write a introduction and module and functions and program Data warehousing with IBM cloud application phase 5



## Introduction:

Data warehousing is a critical component of modern businesses, enabling efficient data storage, retrieval, and analysis. In this module, we will explore the implementation of data warehousing using the IBM Cloud platform, specifically in the context of Phase 5 of a data warehousing project.

## Module and Functions:

### 1. Data Extraction:

- **Function:** Extract data from various source systems.
- **Program:** Develop ETL (Extract, Transform, Load) processes to gather data from databases, APIs, and other sources into the data warehouse.

### 2. Data Transformation:

- **Function:** Clean, structure, and format data for analytical purposes.
- **Program:** Implement data transformation scripts and workflows to ensure data consistency and quality.

### 3. Data Loading:

- **Function:** Load transformed data into the data warehouse.
- **Program:** Use IBM Cloud services to load data into the data warehouse efficiently.

### 4. Data Modeling:

- **Function:** Design the data model for the warehouse, including dimensions and facts.
- **Program:** Develop the schema for the data warehouse using tools provided by IBM Cloud.

### 5. Data Security and Access Control:

- **Function:** Secure the data and manage user access.
- **Program:** Implement security measures and user access controls to protect sensitive

data in the warehouse.

#### 6. Data Backup and Recovery:


- **Function:** Ensure data resilience and disaster recovery.
- **Program:** Set up regular data backups and establish recovery procedures in case of data loss.

#### 7. Data Integration:

- **Function:** Integrate data from different data sources.
- **Program:** Develop integrations to bring in data from various platforms and applications, ensuring a comprehensive view of business data.

Program - Data Warehousing with IBM Cloud (Phase 5):

python

 Copy code

```
# Import necessary libraries and modules

# Data Extraction
def extract_data():
    # Code to extract data from source systems

# Data Transformation
def transform_data():
    # Code to clean, structure, and format data

# Data Loading
def load_data():
    # Code to load data into the data warehouse

# Data Modeling
def create_data_model():
    # Code to design and create the data model

# Data Security and Access Control
def secure_data():
    # Code to implement security measures and access controls

# Data Backup and Recovery
def backup_and_recovery():
```



```
# Code to set up data backups and recovery procedures

# Data Integration
def integrate_data():
    # Code to integrate data from different sources

# Main program execution
if __name__ == "__main__":
    # Execute the functions in the appropriate order for Phase 5
    extract_data()
    transform_data()
    load_data()
    create_data_model()
    secure_data()
    backup_and_recovery()
    integrate_data()
```

This program outlines the essential functions and processes involved in implementing data warehousing with the IBM Cloud application during Phase 5 of the project. It's important to adapt and customize the functions and code to suit the specific requirements of your data warehousing project.