# SRPCE

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**NAME:-** Vijay.N

**ROLL.NO:-** 36

**REG.NO:-** 422021104036

**SEMESTER:-** 5

**DEPARTMENT:-** B.E CSE

**SUBJECT:-** Cloud Application Development

# IBM Cloud Database Analytics

Write a introduction and module and functions for big data analytics IBM cloud database with sample program

Introduction:

Big Data Analytics is a critical component of modern data-driven organizations. IBM Cloud offers a robust and scalable database platform that can be harnessed for Big Data Analytics. In this guide, we will explore the tools and techniques for conducting Big Data Analytics on IBM Cloud databases. We'll discuss how to set up the environment and provide sample code to help you get started.

Module 1: Setting Up IBM Cloud Database for Big Data Analytics

To get started with Big Data Analytics on IBM Cloud, you need to set up your database environment. This module covers the essential steps:

1. **Creating an IBM Cloud Account**: If you don't have an IBM Cloud account, you'll need to sign up for one.
2. **Provisioning a Database Service**: Choose the appropriate database service on IBM Cloud, such as Db2, Compose for MongoDB, or IBM Db2 Warehouse. Provision your database with the desired configuration.
3. **Accessing the Database**: Once your database is provisioned, you'll need to access it. IBM Cloud provides connection strings and credentials for this purpose.

Module 2: Big Data Analytics Functions and Sample Program

In this module, we will discuss key functions and provide a sample program for conducting Big Data Analytics on your IBM Cloud database.

## Function 1: Data Retrieval

python Copy code

```
import ibm_db
```

```
# Replace with your IBM Cloud database credentials
conn_str = "DATABASE=<database_name>;HOSTNAME=<hostname>;PORT=<po

conn = ibm_db.connect(conn_str, "", "")
if conn:
    sql = "SELECT * FROM your_table"
    stmt = ibm_db.exec_immediate(conn, sql)
    while ibm_db.fetch_row(stmt):
        data = ibm_db.result(stmt, "COLUMN_NAME")
        print(data)
    ibm_db.close(conn)
```

## Function 2: Data Analysis

python Copy code

```
import pandas as pd

# Connect to the IBM Cloud database as shown in Function 1
conn = ibm_db.connect(conn_str, "", "")
if conn:
    sql = "SELECT * FROM your_table"
    df = pd.read_sql(sql, conn)
    # Perform data analysis with pandas
    print(df.head())
    ibm_db.close(conn)
```

## Function 3: Data Visualization

python Copy code

```
import matplotlib.pyplot as plt

# Use data retrieved in Function 1 or analyzed in Function 2
# Example data visualization with matplotlib
plt.bar(df['Category'], df['Sales'])
```

```
plt.xlabel('Category')
plt.ylabel('Sales')
plt.title('Sales by Category')
plt.show()
```

This sample code demonstrates how to connect to your IBM Cloud database, retrieve data, perform analysis, and create visualizations. Make sure to replace placeholders with your actual database and table details.

With these functions and sample code, you can start your Big Data Analytics journey on IBM Cloud databases. The platform provides a powerful and scalable infrastructure for processing and analyzing large datasets, enabling you to derive valuable insights from your data.