**Contact center metrics**

**Descriptive Analysis**

**Project Description:** Descriptive Analysis of Contact Center metrics of the City of Vancouver

**Project Title:** Understanding Contact center metrics of the city of Vancouver

**Objective:** This project's main objective is to provide a descriptive analysis of a Vancouver contact center's monthly call stats. With this study, I hope to highlight important aspects of monthly calls and spot patterns and produce knowledge that might enhance resource allocation and customer service operations.

**Dataset:** The dataset includes contact center data from the city of Vancouver over the past year, containing the following key features:

* Date: Date of the call
* Calls Offered: Number of calls received by day
* Calls Handled: Number of calls handled in a day
* Calls Abandoned: number of calls abandoned in a day
* Average Speed of Answer: Average speed it took to answer each call for the day
* Service Level: Ratings given by each caller
* BI\_ID: Unique identifier for each caller

**Methodology:**

1. **Data Collection and Preparation:**

* Data has been extracted from the <https://opendata.vancouver.ca/explore/dataset/3-1-1-contact-centre-metrics/information/>.
* Data has been prepared in Microsoft Excel

1. **Descriptive Statistics:**

Calculate the average number of calls handled each month.

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1. **Workflow:**
2. **Data Ingestion:**

In my case, I have uploaded my data into the standard s3 storage class. This specific class was chosen because this dataset will be accessed frequently. The first step of data Ingestion is to create the bucket and folders in S3. This is the directory path that is used to store the raw data:

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1. **Data Profiling:**

I created a new bucket, grp1-ccm-trf-cha, to store the transformed data of the project.

Path is Amazon S3/Buckets/grp1-ccm-trf-cha/data\_profiling/. To begin the data profiling process, I use AWS Glue DataBrew. I created the new dataset, grp1-ccm-dset-cha, to preview the data.

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1. **Data Cleaning:**

Before doing data cleaning, I created a new folder to store the data cleaning process. I made two folders in the data cleaning folder: System and User.

Path is: Amazon S3/Buckets/grp1-ccm-trf-cha/data\_cleaning/.

In the data cleaning step, I renamed all the columns that don’t adhere to the standards, and most importantly, I extracted months from the date column to create a new column, Month, and then deleted the date column. This step is done to calculate the average for each month.

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1. **Data Pipeline Design :**

The first step is creating the Visual ETL with the name grp1-ccm-etl-cha. export the data that has been cleaned from Amazon S3/Buckets/grp1-ccm-trf-cha/data\_cleaning/System. I dropped some columns which are extra and unnecessary. After that, I filtered the data by the months, and then I calculated the average for each month.

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1. **Insights and Findings:**

Average Calls by January: 1241

Average Calls by February: 983

Average Calls by March: 823

Average Calls by April: 955

Average Calls by May: 1007

Average Calls by June: 1073

Average Calls by July: 1059

Average Calls by August: 903

Average Calls by September: 818

Average Calls by October: 865

1. **Recommendations:**

* Optimize Resource Allocation
* Focus on Service Level Improvements
* Enhance Call Abandonment Management
* Evaluate Training and Performance
* Data-Driven Decision Making
* Regular Metrics Review
* Continuous Process Improvement

1. **Tools and Technologies:**

* Amazon AWS service used
* AWS S3
* AWS Glue
* AWS Glue Databrew
* AWS Cloudwatch
* AWS Cloudtrail
* Microsoft Excel has been used for data collection.
* Draw.io has been used for visualization

**Data Quality Control**

**Project Description:** Data Quality Control Initiative at University Canada West Registrar's Office.

**Project Title:** Implementation of Data Quality Control Measures at University Canada West Registrar's Office.

**Objective:** The major for consistent University aims to and Canada of creating systems reliable West. This is within (SIS); for This project, DQC will complete decision storage, a framework for appointing stewardship, and a framework for dictionaries. University, providing financial metrics to be corrective will enhance original (DQC) accuracy, making organization. as will design a and to for support. These include details of the management to make actions consistent—the language.

**Background**: Data quality problems, such as errors, duplicate information, and irregular formats, have emerged as UCW keeps growing its activities and data sources. Ineffective business plans, inefficiencies, and dangers to regulatory compliance might result from poor data quality. To lessen these problems, our initiative intends to implement strong data quality control procedures.

**Scope:** The project will focus on the following key areas:

Data Storage: AWS S3 has been used in the project to store all the data. Using a recording medium to store data on computers or other devices is known as data storage. File, block, and object storage are the three most common types of data storage, and each is best suited for a particular use case.

Data Profiling: AWS Glue and Glue Databrew have been used in this project to complete data profiling. The primary goal is to learn more about the data quality by reviewing and summarizing it and then assessing its state. Data engineers usually handle the task by applying various business rules and analytical methods.

Data Cleaning: Aws Glue has been used to clean the data. Data cleaning is known as finding and fixing mistakes and inconsistencies in data sets so they may be used for analysis. It is an essential step in data preprocessing to guarantee the quality and dependability of the data used for analysis or machine learning applications. A thorough data cleansing process gives you reliable statistics, helps you develop effective procedures, and gives you a better understanding of what is happening in your company.

Monitoring and Reporting: AWS Cloudwatch and Aws Cloudtrail have been used for monitoring and reporting in this project. "monitoring and reporting" refers to the methodical gathering of data and information to track the development, efficacy, and results of policies, programs, and initiatives. Monitoring and reporting make accountability, assessment, and well-informed decision-making possible.

**Methodology:**

1. **Current State Assessment:**

A raw bucket has been created in AWS S3.A screenshot of a computer

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1. **Data Profiling:** AWS Databrew has been used in this project to conduct dataprofiling and following result has been created.

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1. **Data Cleaning**: AWS Glue Databrew and AWS glue have been used to clean the raw data, which included renaming incorrect columns, removing duplicate value, correcting incorrect values.

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After that the clean data has been stored in transformed buckets in the S3.

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Monitoring and Reporting: AWS Cloudwatch and AWS Cloudtrail has been used to monitor and reporting all the activities with the dataset.A screenshot of a computer

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1. **Tools and Technologies:**

Amazon AWS service used

AWS S3

AWS Glue

AWS Glue Databrew

AWS Cloudwatch

AWS Cloudtrail

Microsoft Excel has been used for data collection.

Draw.io has been used for visualization