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| PERFORMANCE ASSESSMENT OF ADVANCED DATA ACQUISITION  D211    D208  BY KOFFI M. GANU |
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**Introduction**

People often say in business: “It takes a month to find a customer but a second to lose one.” The primary goal of any company is to maintain its customers as long as possible. It is with this in mind that, especially with the advent of the use of data, these companies hire data specialists (Data analysts, Data scientists) for strategies and recommendations for the improvement of their company’s services. In the rest of our project, we will, on the one hand, create an interactive tableau dashboard to support executive decision-making and, on the other hand, provide a link to our storytelling with data.

**PART I**

A1-

The datasets used to create our dashboard are:

* Churn\_clean
* WA-Fn-UseC. Telco-customer\_churn

The two datasets will be submitted together with our submitted document.

A2-

Getting access to my Tableau dashboard is easy. You will follow the link for my dashboard, and if you have a Tableau reader or Tableau software, it will be open, and you will get access through it.

A3-

Here, we will give instructions to navigate through our dashboard. First, we want to let you know that our dashboard tried to explain how the churn rate is influenced by customer age group, gender, contract, and payment method. Our dashboard contains:

* Two key performance indicators from both datasets.
* Four different data representations: churn count by payment method, churn count by state, churn count by contract and monthly charge, and churn by gender.
* Two filters: payment method and contract.

After the description of our dashboard, to see how the payment method influences all the key performance indicators, you need to navigate through the filters, and you will see the change in all data representation and the key performance indicator.

A4-

This part will show the SQL code connecting the dimension tables to the fact table. Also, the ERD will be submitted with our submitted document.

* SQL CODE JOINING CONTRACT TABLE TO CUSTOMER TABLE

SELECT “contract”. “contract\_id” AS “contract\_id (contract)”,

CAST (“contract”. “duration” AS TEXT) AS “duration

FROM “public”. “contract” “contract”

* SQL CODE JOINING JOB TABLE TO CUSTOMER TABLE

SELECT “job”. “job\_id” AS “job\_id (job)”,

CAST (“job”. “job\_title” AS TEXT) AS “job\_title”

FROM “public”. “job” “job”

* SQL CODE JOINING LOCATION TABLE TO CUSTOMER TABLE

SELECT CAST (“location”. “city” AS TEXT) AS “city”,

CAST (“location”. “country” AS TEXT) AS “country”,

“location”. “location\_id” AS “location\_id (location)”, “location”. “zip”

FROM “public”. “location” “location”

* SQL CODE JOINING PAYMENT TABLE TO CUSTOMER TABLE

SELECT “payment”. “payment\_id” AS “payment\_id (payment)”

CAST (“payment”. “payment\_type” AS TEXT)

AS “payment\_type”

FROM “public”. “payment” “payment”

**PART II/**

[Wednesday, June 21, 2023 at 12:13:55 AM (panopto.com)](https://wgu.hosted.panopto.com/Panopto/Pages/Viewer.aspx?id=133dfd51-fbf5-4cff-a7c0-b028005d86e1)

**PART III/**

C1-

Telecommunication companies often face high churn rates, which refer to the rate at which customers switch to a different service provider or terminate their subscriptions. From this perspective, we created this dashboard to highlight how different factors influenced churn in the telecom industries. We have chosen the telco-customer-churn data set because this data set confirms all the results given by the churn\_clean data set and has almost the same variable as the primary data set.

The additional data set enhances the insights from the provided data set because both data sets have almost the same variables and data except for some demographic and geographic variables. It is, therefore, undoubtedly that we chose this data set to confirm our result.

C2-

We have chosen to work with Tableau as a business intelligence tool for many reasons. First, Tableau has powerful data visualization capabilities. Indeed, it provides a wide range of chart types, interactive features, and customization options, allowing users to create visually appealing and meaningful visualizations. On the other hand, Tableau has an intuitive interface. This is because it uses a drag-and-drop approach and makes it accessible to technical and non-technical users so users can quickly build interactive dashboards and reports without coding knowledge. Finally, Tableau provides analytics capabilities allowing users to perform complex calculations and create a calculated field, and Tableau supports integration with various data sources, including databases, spreadsheets, and cloud services.

C3-

To clean and prepare the data for analysis, we have followed these steps:

* Use data profiling techniques to gain insight into the data quality and potential issues like missing values and outliers.
* Handle missing values by either imputing them with an appropriate value.
* Perform data integration by following the database schema. Or perform any data aggregation to align with the analysis requirement.
* Transform the data as needed to make it suitable for analysis. This may involve creating calculated fields and aggregation data at different levels.

C4-

To create our dashboard, we have followed these steps.

* Identify the key metrics and insights the dashboard should convey to our audience.
* Identify the data sources.
* Data preparation.
* Select data visualization.
* Enhance the user experience by incorporating filters, drill-down options, and parameters to allow users to explore the data and customize their views.

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C5-

Churn refers to the rate customers discontinue their relationship with a company or stop using its services. Analyzing churn data provides insights into why customers leave and help identify indicators that can inform executive decision-making. By analyzing the data set provided and the additional data set, we concluded that the customer churn may lead to a contract type. Indeed, the rate of the customers with a month-to-month is high, and the customers with at least one year of the contract stay longer with their service provider. Also, by the representation “churn rate by state,” we see that Texas has a high customer churn rate. Finally, our dashboard shows that the churn rate by payment method is almost the same except for the rate of customers who choose the electronic check as a payment method. After these observations, we will say that our dashboard will support decision-making effectively by recommending the executive to:

* Sign at least one year contract with a new customer so they can reduce their monthly payment,
* assist Texas customers with a discount to afford their monthly payment.

C6-

The accuracy and reliability of the data for analysis can significantly impact the results. If the data contains errors, inconstancies, or missing values, it can lead to biased or incorrect conclusions.

Data analysis often relies on a sample of the population rather than the entire population.

D-

We acquired additional data from [www.kaggle.com](http://www.kaggle.com) but have not used any third-party code.

E-

No in-text references were used.

F-

Professional communication in the presentation of the submission was used.

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