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Advanced-Data Acquisition – D211

Masters Data Analytics

Part 1: Interactive Data Dashboard

A. Dashboard link:

Executive Dashboard - Telecom Churn

1. Datasets:

- Churn_dataset.csv (uploaded)
- WA Fn-UseC –Telco-Customer-Churn.csv (uploaded) and link WA_Fn-UseC_-Telco-Customer-Churn | Kaggle

Steps used to clean the data include:

- View tables in pgAdmin: customer, job, payment, contract, location
- Access Postgres - pgAdmin from Tableau with credentials:

  Server: localhost

  Port: 5432

  Database: churn

  Username: postgres

  Password: Passw0rd!
- Create custom SQL to join five tables from pgAdmin (customer, job, payment, contract, location). Please see Part 1.4 Supporting codes.

- View summary and statistics of the dataset
- Download the additional data set: WA Fn-UseC –Telco-Customer-Churn.csv (uploaded) and link WA_Fn-UseC_-Telco-Customer-Churn | Kaggle
- Upload the additional data to Tableau
- Create new calculated fields. Please see Part 1.4 supporting codes.
- Create all reporting tabs with Filters on Gender and State
- Create the dashboard by combining tabs
- Create the story
- Save the combined dataset as WA Fn-UseC –Telco-Customer-Churn.customer.csv (uploaded)

2. Installation:

The dashboard has been uploaded to Tableau Public. No need to install anything. Click on the link below to view the dashboard.

Executive Dashboard - Telecom Churn

3. Navigate the dashboard:

Select the category menu

- Select State from the dropdown and click apply to view the specified State in all dashboards from the State dropdown menu.
- From the “Revenue by State” heat-map, click on a state to view specified state information in all other charts.
- We can also select the group of States to click on the dropdown list or Ctrl-click on the heat-map.

- View male elements from the Gender checklist by selecting the “male” gender icon in the gender menu; view numbers of female accounts by choosing the “female” gender icon in the gender menu.
- We can also select the group of Gender click on the checklist.
- View the tooltip information; move the mouse to the area you want to view.

4. Supporting codes:

4.1 Accessing Postgres from Tableau. Credentials:

Server: localhost

Port: 5432

Database: churn

Username: postgres

Password: Passw0rd!

4.2 Custom SQL:

```
SELECT CAST("customer"."customer_id" AS TEXT) AS "customer_id",
"customer"."lat" AS "lat",
"customer"."lng" AS "lng",
"customer"."population" AS "population",
"customer"."children" AS "children",
"customer"."age" AS "age",
"customer"."income" AS "income",
CAST("customer"."marital" AS TEXT) AS "marital",
CAST("customer"."churn" AS TEXT) AS "churn",
CAST("customer"."gender" AS TEXT) AS "gender",
```

```
"customer"."tenure" AS "tenure",
"customer"."monthly_charge" AS "monthly_charge",
"customer"."bandwidth_gp_year" AS "bandwidth_gp_year",
"customer"."outage_sec_week" AS "outage_sec_week",
"customer"."email" AS "email",
"customer"."contacts" AS "contacts",
"customer"."yearly_equip_faiure" AS "yearly_equip_faiure",
CAST("customer"."techie" AS TEXT) AS "techie",
CAST("customer"."port_modem" AS TEXT) AS "port_modem",
CAST("customer"."tablet" AS TEXT) AS "tablet",
"customer"."job_id" AS "job_id",
"customer"."payment_id" AS "payment_id",
"customer"."contract_id" AS "contract_id",
"customer"."location_id" AS "location_id",
"contract"."contract_id" AS "contract_id (contract)",
CAST("contract"."duration" AS TEXT) AS "duration",
"job"."job_id" AS "job_id (job)",
CAST("job"."job_title" AS TEXT) AS "job_title",
"location"."location_id" AS "location_id (location)",
"location"."zip" AS "zip",
CAST("location"."city" AS TEXT) AS "city",
CAST("location"."state" AS TEXT) AS "state",
CAST("location"."county" AS TEXT) AS "county",
```

```
"payment"."payment_id" AS "payment_id (payment)",
CAST("payment"."payment_type" AS TEXT) AS "payment_type"
FROM "public"."customer" "customer"
INNER JOIN "public"."contract" "contract" ON ("customer"."contract_id" =
"contract"."contract_id")
INNER JOIN "public"."job" "job" ON ("customer"."job_id" = "job"."job_id")
INNER JOIN "public"."location" "location" ON ("customer"."location_id" =
"location"."location_id")
INNER JOIN "public"."payment" "payment" ON ("customer"."payment_id" =
"payment"."payment_id")
```

4.3 Other custom fields:

- **Churned :**

```
COUNT( IF [Churn] = "Yes" THEN 1 END)
```

- **Retained**

```
COUNT (IF  [Churn] = "No" then 1 END)
```

- **Churn Rate**

```
[Churned]/([Retained] + [Churned])
```

- **Telco Churned**

```
COUNT(IF [Churn1] = 'Yes' then 1 END)
```

- **Telco Retained**

```
COUNT(IF [Churn1] = 'No' then 1 END)
```

- **Telco Churn Rate**

```
[Telco Churned]/([Telco Retained] + [Telco Churned])
```

- **Categories:**

IF COUNT([Churn]) >1 THEN "Categories" ELSE "Category" END

- **Total Revenue**

SUM([Monthly Charge])

- **Social Class:**

If [Income] > 100000 then 'High Income'

ELSEIF [Income] > 50000 then 'Middle Class'

ELSE 'Low Income'

END

Part 2: Panopto video

Panopto video recording of warning and error-free code execution to perform the analysis is uploaded to https://wgu.hosted.panopto.com/Panopto/Pages/Viewer.aspx?id=cd58d56c-6a91-423e-a7f5-ae05000be717

Part 3: Report

Please see the attachment. **"Advanced Data Acquisition D211_Part 3 Reflection paper.pdf"**

Part 4: Source

D. Third-party code: N/A

E. Source

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[3] Calderon Justin. (2020, July 16). How to reduce churn in the telecom industry? Airtime APIs can help. https://www.reloadly.com/blog/how-to-reduce-churn-in-the-telecom-industry/

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[5] btProvider. (n.d.). How to customize a map using Colour Scale and Set Actions in Tableau Software – Skill Pill Video. https://btprovider.com/colour-scale-tableau-software/

[6] Megan Lukonen. (2020, March 30). How to Create Colorblind Friendly Dashboards. https://www.godatadrive.com/blog/2020/3/29/creating-colorblind-friendly-dashboards

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[8] Dewan Smriti. (2019, January 11). Top 5 Reasons Why Tableau is Leading the Business Intelligence Industry. https://www.grazitti.com/blog/top-5-reasons-why-tableau-is-leading-the-business-intelligence-industry/