Google App Store Analysis

Low Level Design

Project On:

Title : Google Play Store Analysis

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Low Level Design (LLD)

1. Introduction

1.1 What is Low-Level design document?

The goal of the LDD or Low-level design document (LLDD) is to give the internal logic design of the actual program code for the Expenditure Data Analysis dashboard. LDD describes the class diagrams with the methods and relations between classes and programs specs. It describes the modules so that the programmer can directly code the program from the document.

1.2 Scope

Low-level design (LLD) is a component-level design process that follows a step-by step refinement process. The process can be used for designing data structures, required software architecture, source code and ultimately, performance algorithms. Overall, the data organization may be defined during requirement analysis and then refined during data design work.

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2. Architecture

Power BI Desktop Architecture

1. Get Power BI Desktop

With Power BI Desktop, you can build advanced queries, models, and reports that visualize data. You can also build data models, create reports, and share your work by publishing to the Power BI service. Power BI Desktop is a free download.

2. BI solution architecture in the Centre of Excellence

BI solution architecture can consist of:

- Data sources
- Data ingestion
- Big data / data preparation
- Data warehouse
- BI semantic models
- Reports

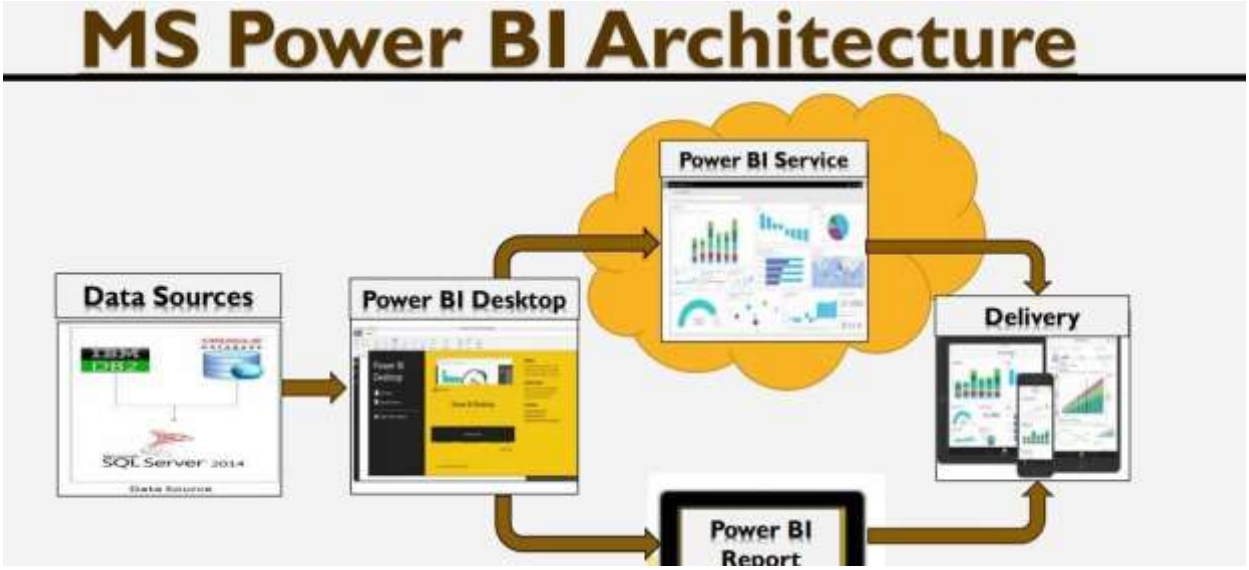

Fig: Power BI Architecture diagram

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Microsoft Power BI Desktop is a companion desktop application to Power BI.

With Power BI Desktop, you can:

1. **Get data:**

   The Power BI Desktop makes discovering data easy. You can import data from a wide variety of data sources. After you connect to a data source, you can shape the data to match your analysis and reporting needs.

2. **Create relationships and enrich your data model with new measures and data formats:**

   When you import two or more tables, oftentimes you'll need to create relationships between those tables. The Power BI Desktop includes the Manage Relationships dialog and the Relationships view, where you can use Autodetect to let the Power BI Desktop find and create any relationships, or you can create them yourself. You can also very easily create your own measures and calculations or customize data formats and categories to enrich your data for additional insights.

3. **Create reports:**

   The Power BI Desktop includes the Report View. Select the fields you want, add filters, choose from dozens of visualizations, format your reports with custom colours, gradients and several other options. The Report View gives you the same great report and visualizations tools just like when creating a report on PowerBI.com.

4. **Save your reports:**

   With the Power BI Desktop, you can save your work as a Power BI Desktop file. Power BI Desktop files have a .pbix extension.

5. **Upload or Publish your reports:**

   You can upload the reports you created and saved in the Desktop to your Power BI site. You can also publish them to Power BI right from Power BI Desktop.

3. Architecture Description

3.1. Data Description: The Dataset contains year wise distribution of all the states of India for the following parameters:

1) Aggregate Expenditure:

Aggregate expenditure is a measure of national income. Aggregate expenditure is defined as the current value of all the finished goods and services in the economy. The Aggregate expenditure is thus the sum of total of all the expenditures undertaken in the economy by the factors during a given time period

2) Capital Expenditure:

Capital expenditure or capital expense is the money an organization or corporate entity spends to buy, maintain, or improve its fixed assets, such as buildings, vehicles, equipment, or land.

3) Gross Fiscal Deficits:

The gross fiscal deficit (GFD) is the excess of total expenditure including loans net of recovery over revenue receipts (including external grants) and non-debt capital receipts. Generally fiscal deficit takes place either due to revenue deficit or a major hike in capital expenditure.

4) Nominal GDP Series:

Nominal GDP is an assessment of economic production in an economy that includes current prices in its calculation. In other words, it doesn't strip out inflation or the pace of rising prices, which can inflate the growth figure.

5) Own Tax Revenues:

The income generated by states for various activities include revenue receipts like taxes & grants and capital receipts like loans. States which are able to generate more revenue on their own are less dependent on the devolution & central grants.

6) Revenue Deficits:

A revenue deficit occurs when realized net income is less than the projected net income. This happens when the actual amount of revenue and/or the actual number of expenditures do not correspond with budgeted revenue and expenditures.

7) Revenue Expenditure:

Revenue expenditures are short-term expenses used in the current period or typically within one year. Revenue expenditures include the expenses required to meet the ongoing operational costs of running a business, and thus are essentially the same as operating expenses (OPEX).

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8) Social Sector Expenditure:

Social sector expenditure has been defined as the total of all expenditures incurred by the central and the state governments on promotional and protective measures.

3.2 Export Data from Python
Perform Exploratory Data Analysis Using Python:

1. **Import Python Modules**
2. **Load Dataset**
3. **Data Preparation**
4. **EDA: Data Visualization**

```
# import python libraries
import numpy as np
import pandas as pd
import matplotlib.pyplot as plt # visualizing data
%matplotlib inline
import seaborn as sns
```

[1] ✓ 9.9s

```
df = pd.read_excel("DA Assignment.xlsx")
df.head()
```

[2]

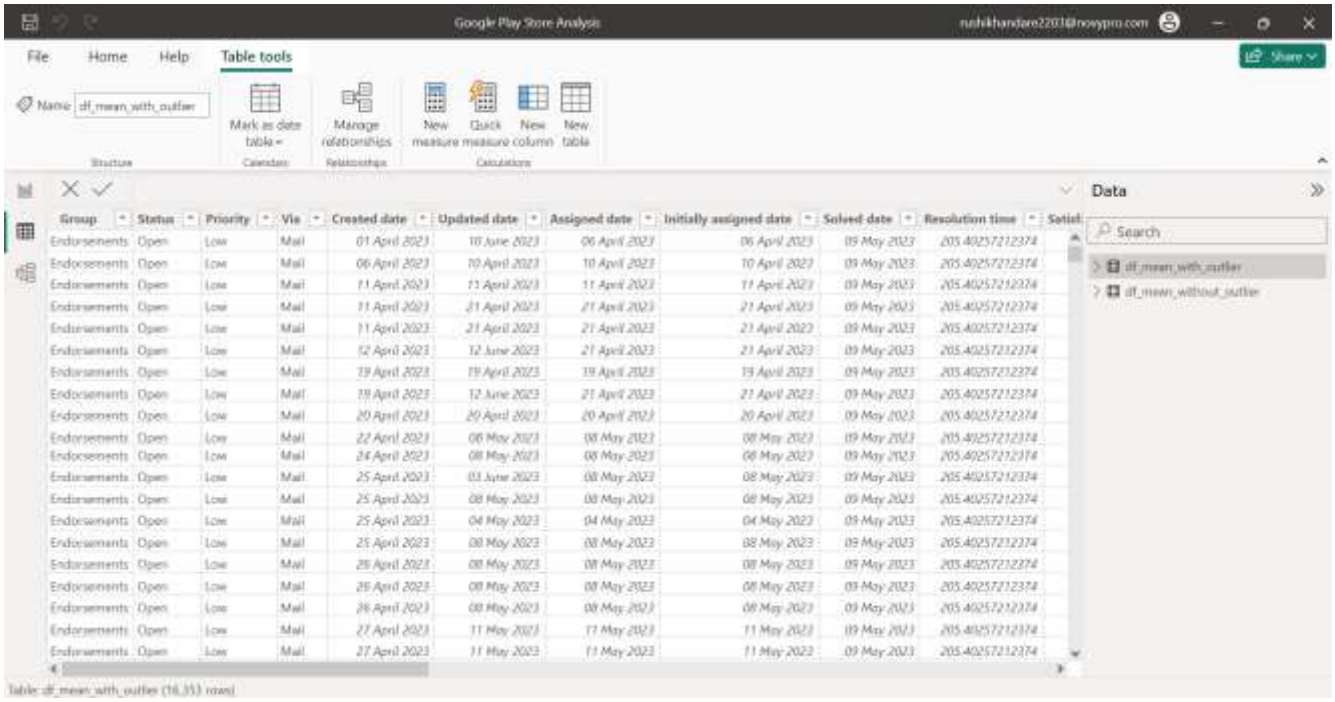
- After performing Pre-processing and cleaning dataset.
- After cleaned data, its exported into csv as a df_mean_with_outlier.csv.
- Now this cleaned dataset uses for creating dashboard in Power BI.

```
df_mean.to_csv('df_mean_with_outlier.csv', index=False)
```

[110]

3.3 Data Preparation:

- In the Preparation Process, we will convert our original datasets with other necessary attributes format.
- All the 2 datasets are of same format as shown below: Original dataset.



- As you all can notice that format of the data, we have is not good to analyse and visualize. So, we need to reconstruct the structure of the dataset.

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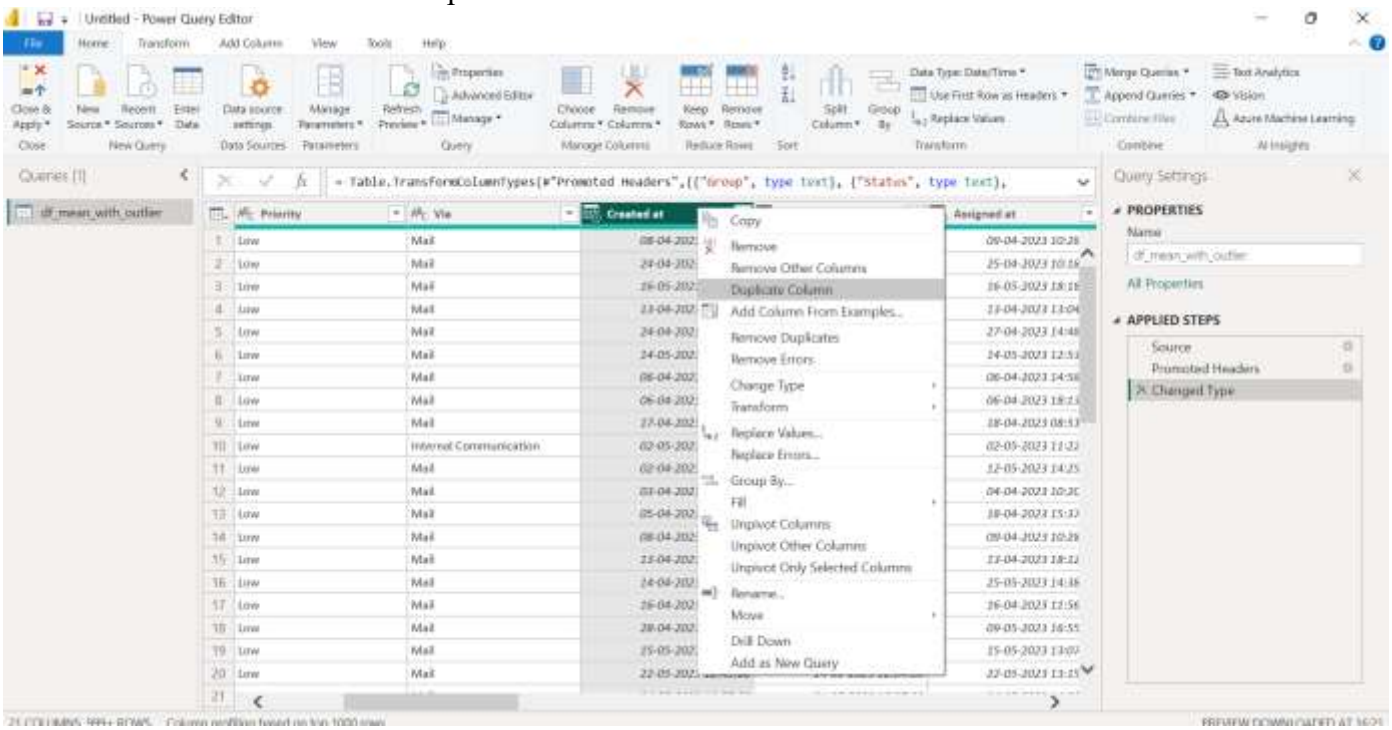
We will be using only Power BI with power query for data restructuring and cleaning purpose.

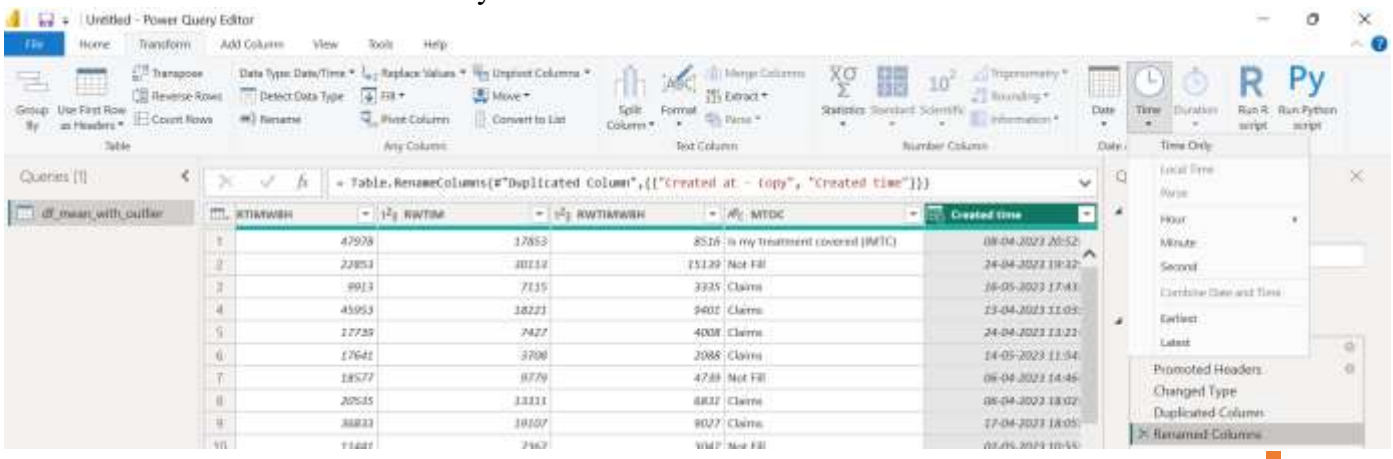
- Also We can upload csv data from Home section, click on Data tab, click on get data ,then from text or csv and upload dataset into Power query editor.
- Power Query Editor window will get popped up.
- Then Click on transform data.

Step 1) Transform Dataset:

- Click on Column Created at Duplicate Column.



- Go to Created at copy column and change the name to Created time.
- GO to Created time column then transform Date and Time Column section
- click on Time then convert Time Only.



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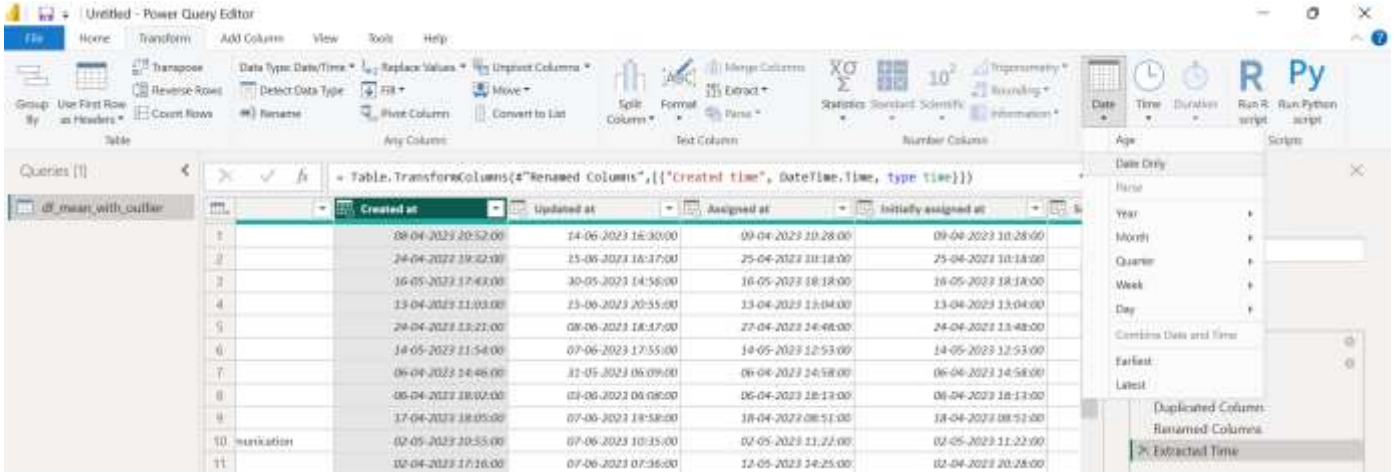
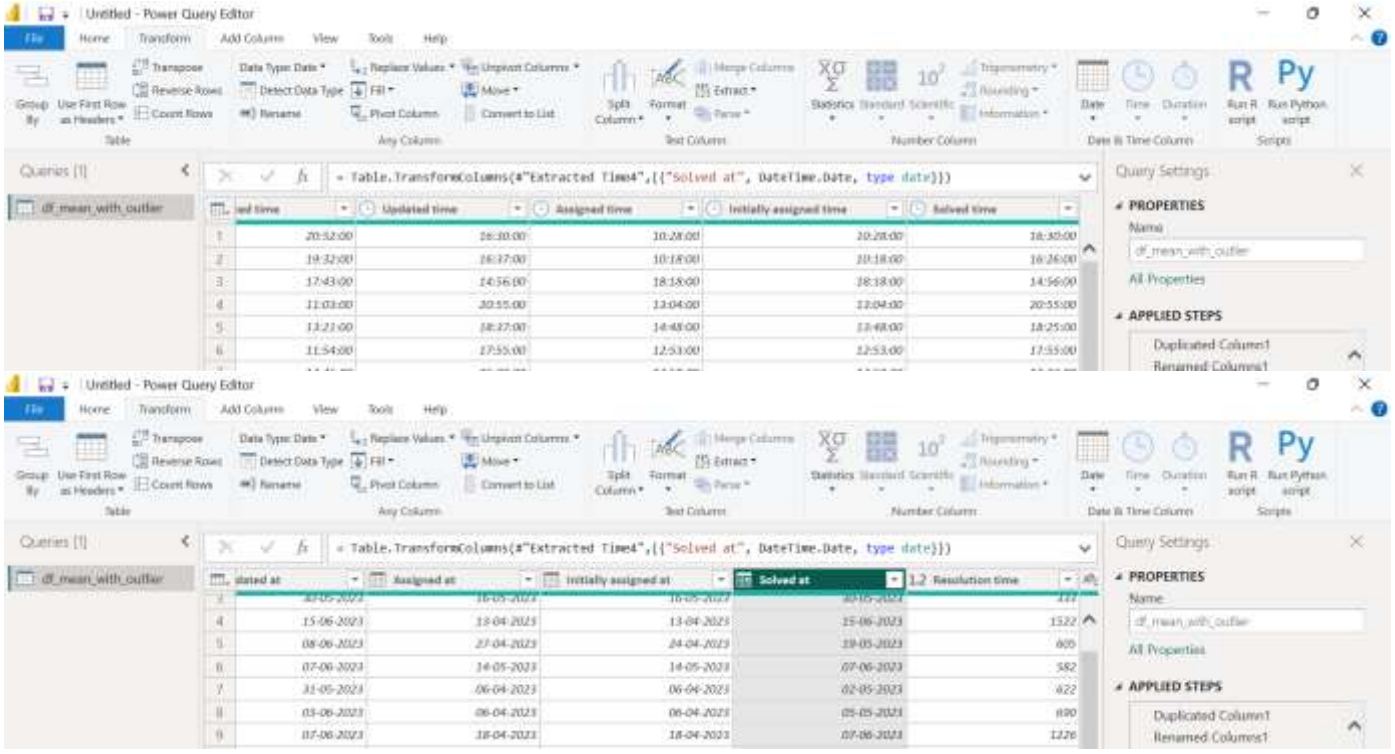
- GO to Created at column then transform Date and Time Column section
- click on Date then convert Date Only



- Repeat steps for Updated at, Assigned at, Initially assigned at, solved at.



Step 2) Replace Column Values:

- Now the dataset will be shown, Replace column values of “Satisfaction Score”.

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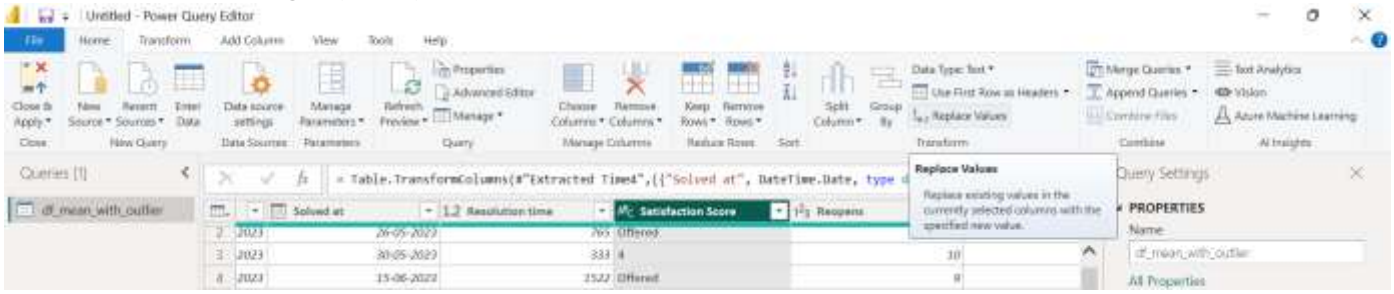
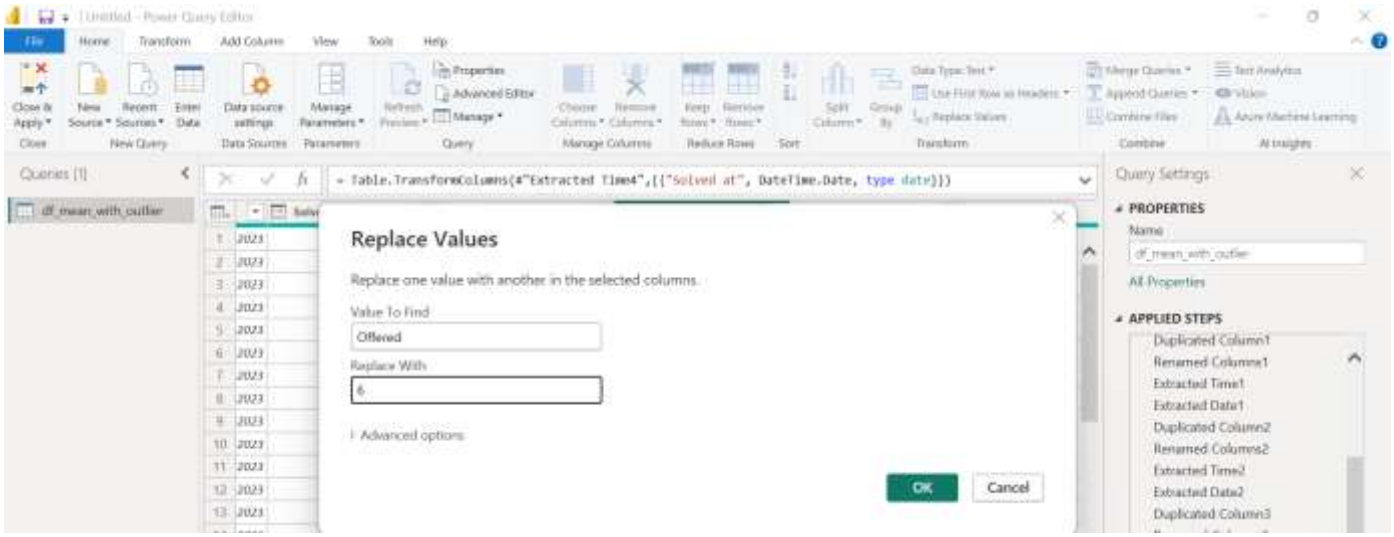
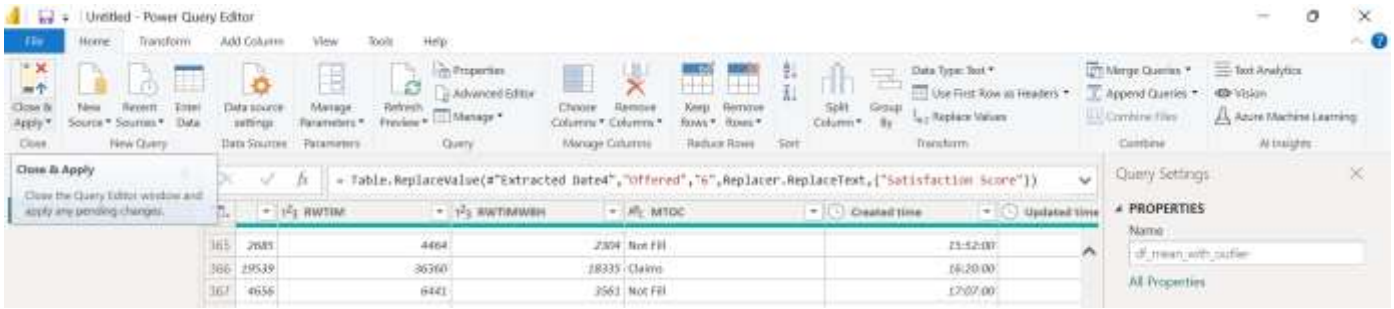


- Replace column values of Satisfaction Score “Offered” to 6.



Step 3) Close and save:

- Now go to Home section and click close and load.
- In such a way we preparing dataset and now we need to all these steps for all the others datasets we have.
- And save it into new folder as prepared data.



4. Deployment

For Development I used Power BI and NovyPro

Once you've completed your dashboard, follow these steps:

1. Load dataset on Power BI in csv formats and creates visuals for dashboard.
2. After creating all visual, create insightful dashboard.
3. Then Login into Power BI Service by using Microsoft developer account.
4. Then create new project workspace for uploading dashboard and reports into this workspace.
5. Then login into NovyPro Power BI account.

6. Then share dashboard as embedded link as a web into NovyPro portfolio.