

Reports On Mini Project

Name : Nithya S

Batch code : TN_DA_FNB10

Mail id : nithyasubburaj2@gmail.com

Contact no : +91 9384760769

Project Title : Digital Marketing Campaign Performance Analysis

Project Domain : Social media & sales-E commerce

Tools Used : Excel, Power BI

Submission Date : 21/02/2026

Mentor Name : Kumaran M

Raw Dataset Link : <https://www.kaggle.com/datasets/nayakganesh007/google-ads-sales-dataset>

Cleaned Dataset Link:
https://drive.google.com/drive/folders/1R8K_6ummghz_KqOE5WIDiXhgS47jFGY1?ths=true

Report Link :
https://drive.google.com/drive/folders/1R8K_6ummghz_KqOE5WIDiXhgS47jFGY1?ths=true

Digital Marketing Campaign Performance Analysis

Abstract:

This project analyses the performance of a digital marketing campaign using data analytics techniques. The main objective is to evaluate advertising efficiency, revenue generation, profitability, and customer conversion behaviour. By analysing key metrics such as Sales, Cost, Profit, Conversions, ROAS, ROI, and CTR, the project provides actionable insights to improve campaign effectiveness and optimize marketing spend. The final interactive dashboard enables data-driven decision-making through visual storytelling and performance tracking.

Overview:

In today's digital business environment, marketing performance measurement is essential for maximizing return on investment. This project focuses on analyzing campaign data across multiple dimensions such as:

- Ad Spend
- Sales Revenue
- Profitability
- Device Performance
- Keyword Performance
- Conversion Trends

The dataset includes campaign details like Cost, Sale Amount, Profit, Conversions, Device Type, Keywords, Click-Through Rate (CTR), Return on Ad Spend (ROAS), and Return on Investment (ROI). An interactive Power BI dashboard was developed to visualize trends, identify high-performing segments, and support strategic business decisions.

Purpose Of the Project:

The actual purpose of this project is:

- Analyze campaign performance using key marketing metrics.
- Evaluate profitability and marketing efficiency.
- Identify top-performing devices and keywords.
- Understand conversion trends over time.
- Demonstrate practical skills in data cleaning, transformation, and visualization.

This project also serves as a real-world application of data analytics concepts learned during the course.

Tools Used:

Microsoft Excel

Microsoft Excel used for:

- Data cleaning and preprocessing
- Handling missing values
- Removing duplicates
- Formatting columns (Currency, Percentage, Date)
- Basic data validation

Excel helped in preparing structured and clean data before importing into Power BI.

Power BI

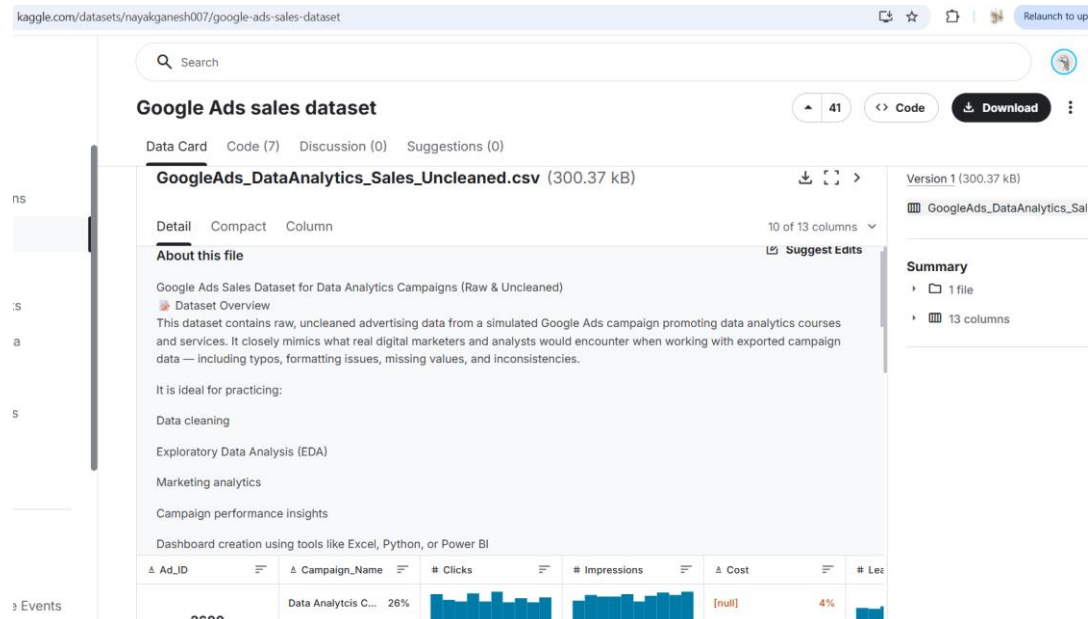
Power BI user for:

- Creating calculated columns and measures using DAX
- Developing KPIs (Revenue, Cost, Profit, ROAS, ROI, CTR)
- Creating interactive dashboards
- Visualizing trends using charts (Line, Bar, Column, Donut, Scatter)
- Implementing slicers for interactivity

Power BI transformed raw data into meaningful visual insights for business analysis.

Dataset Selection:

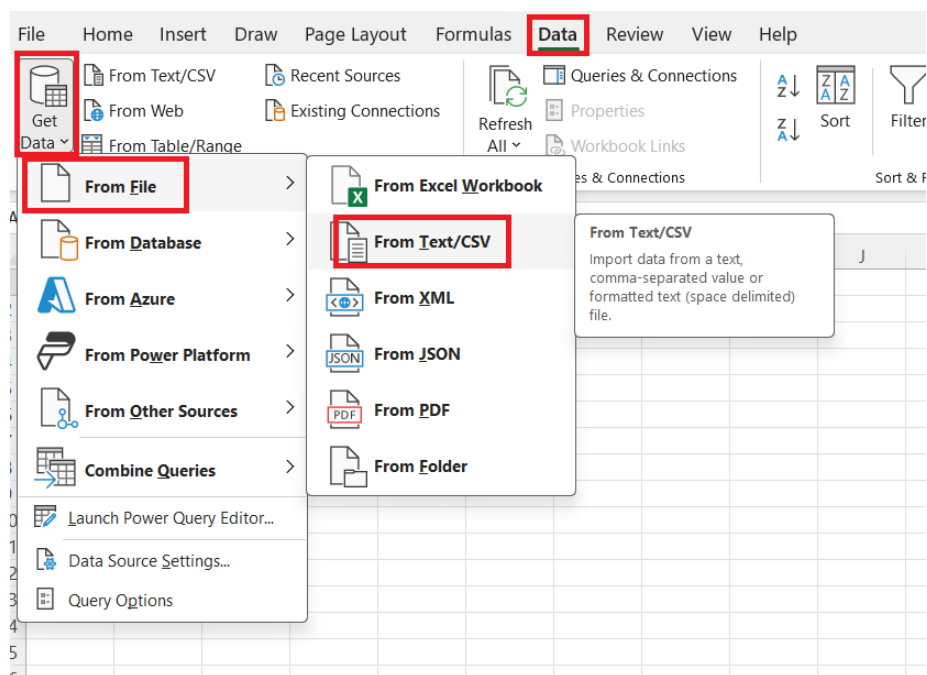
The dataset has 2600 records and 13 features/columns and sourced from Kaggle.com



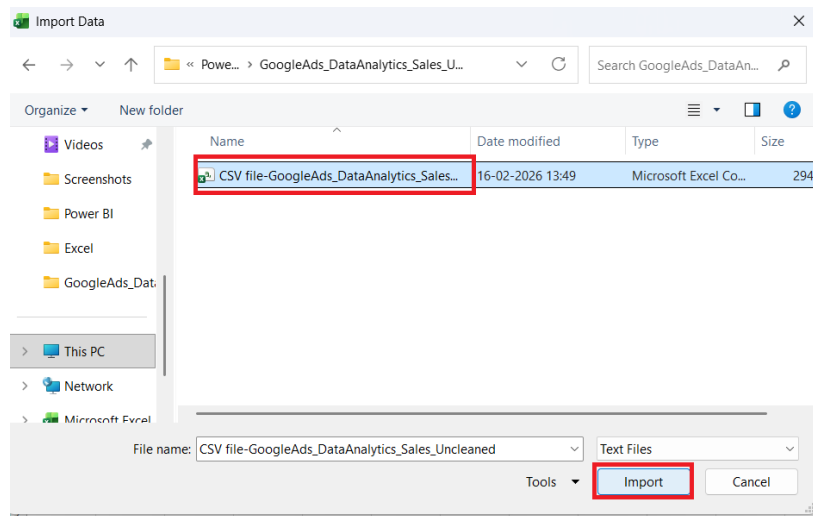
Data Pre-processing Using Excel:

1. Load Data into Excel:

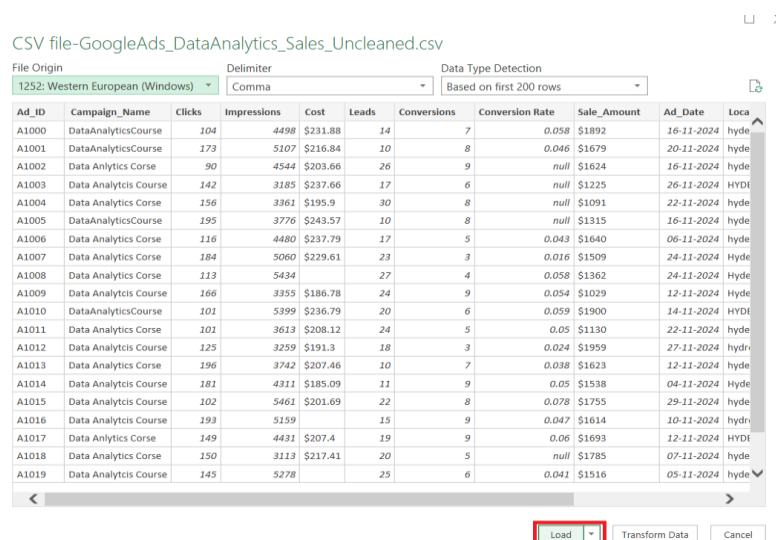
A raw CSV file Loaded into Excel by clicking Data→Get Data→From File→click “From Text/CSV”.



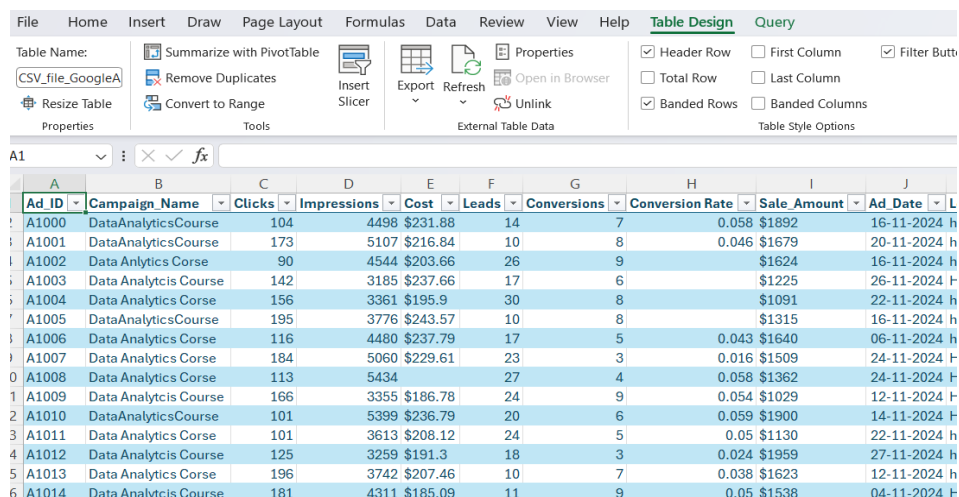
Then Choose file to Load into Excel by clicking “Import”



Click “Load” to Finish the Import Process.



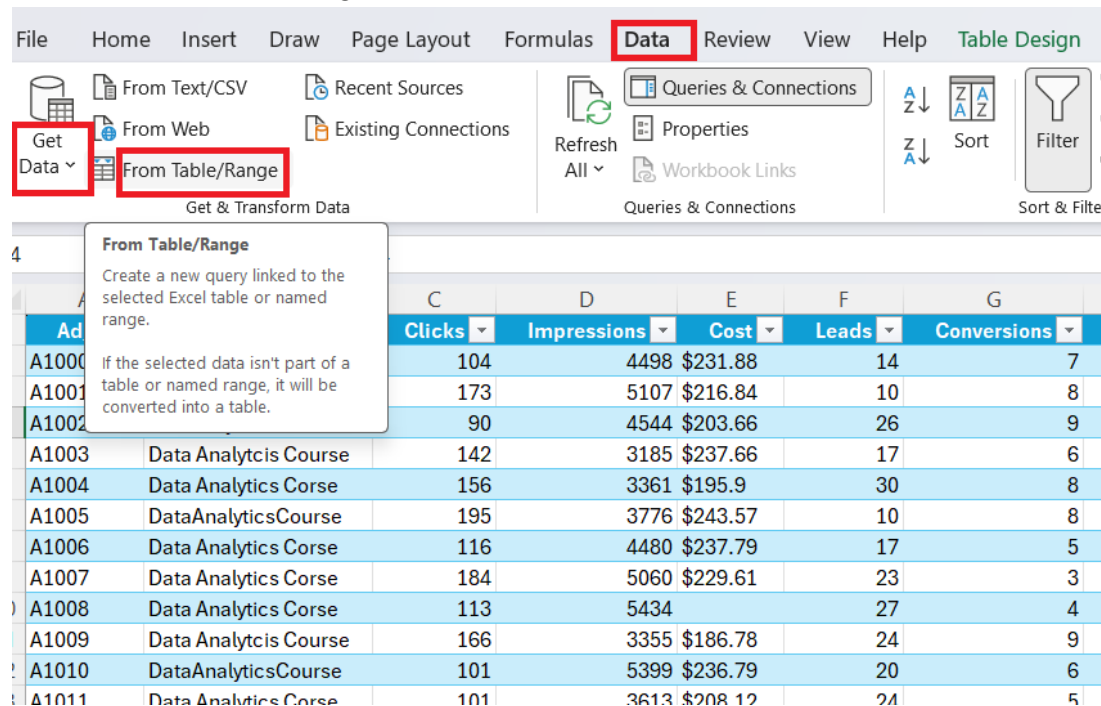
Now the Dataset was Loaded into Excel and ready for cleaning process.



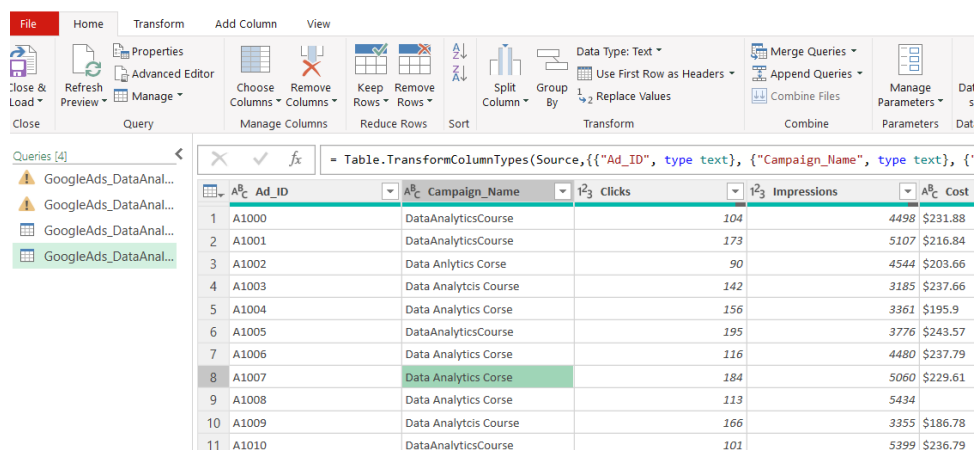
2.Data Cleaning:

Correct Inconsistencies:

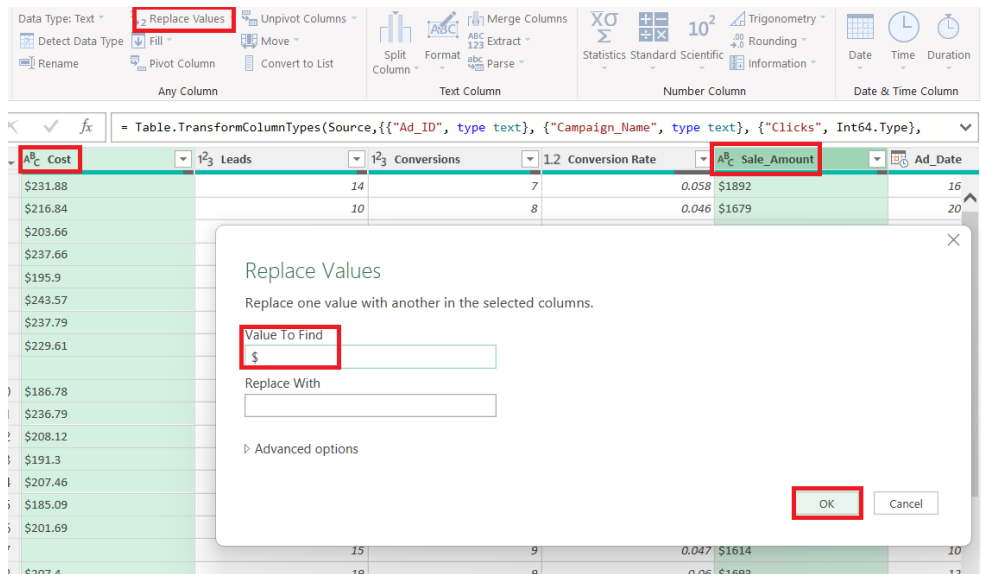
For cleaning purpose, Data loaded into Power Query Editor by Clicking Data→ Get data→ From Table/Range



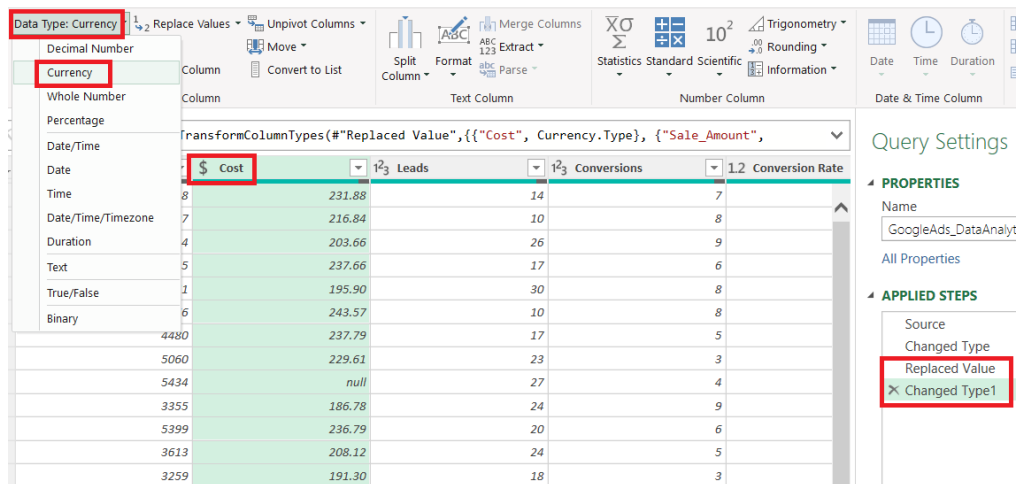
Power Query Editor opened for cleaning, where need to select the file to start process.



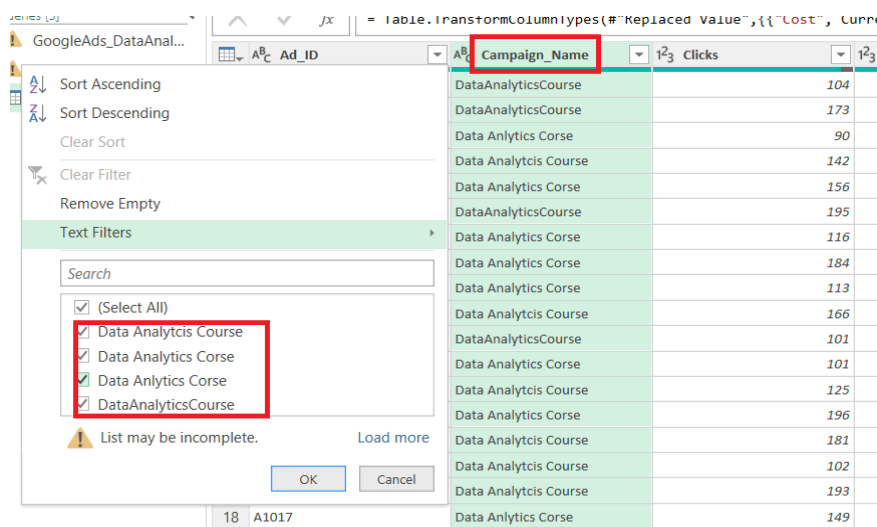
There is some Inconsistency found in “Cost” column, a symbol “\$” considered as s text and replaced with “empty” by Replace Values.



“Data Type” format of Cost column Changed from Text to “Currency”.



There is some Typos found in Campaign Name Column.



Misspelling Cleared by using “Replace values” option.

Replace Values

Replace one value with another in the selected columns.

Value To Find
Data Anylytics Corse

Replace With
Data Analytics Course

Advanced options

OK Cancel

Table Columns: Campaign_Name, Clicks, Impressions, Cost, Leads

Table Data:

Campaign_Name	Clicks	Impressions	Cost	Leads
Data Analytics Course	104	4498	231.88	
Data Analytics Course	173	5107	216.84	
Data Anylytics Corse	193	5159	null	

APPLIED STEPS

- Source
- Changed Type
- Replaced Value
- Changed Type1
- Replaced Value1

Now errors in Campaign Name column cleared.

Query Settings

PROPERTIES

Name
GoogleAds_DataAnaly

APPLIED STEPS

- Source
- Changed Type
- Replaced Value
- Changed Type1
- Replaced Value1
- Replaced Value2
- Replaced Value3
- Replaced Value4

Table Columns: Ad_ID, Campaign_Name, Clicks, Impressions

Table Data:

Ad_ID	Campaign_Name	Clicks	Impressions
	Data Analytics Course	104	
	Data Analytics Course	173	
	Data Analytics Course	90	
	Data Analytics Course	142	
	Data Analytics Course	156	
	Data Analytics Course	195	
	Data Analytics Course	116	
	Data Analytics Course	184	
	Data Analytics Course	113	
	Data Analytics Course	166	
	Data Analytics Course	101	
	Data Analytics Course	101	
	Data Analytics Course	125	
	Data Analytics Course	196	
	Data Analytics Course	181	
	Data Analytics Course	102	
	Data Analytics Course	193	
	Data Analytics Course	149	

There is a Spelling Errors and case variations found in “Location” column

Table Columns: Sale_Amount, Ad_Date, Location

Table Data:

Sale_Amount	Ad_Date	Location
		hyderabad
		hyderabad
		hyderabad
		HYDERABAD
		hyderabad
		hyderabad
		hyderabad
		Hyderabad
		Hyderabad
		Hyderabad
		HYDERABAD
		hyderabad
		hydrebad
		hyderabad
		Hyderabad
		hyderabad
		hydrebad

Misspelling Cleared by using “Replace values” option and case variations are corrected by “Capitalize each word” now errors in Location column Cleaned.

The screenshot shows a data cleaning interface with a table of data. The 'Location' column is filtered to show only 'Hyderabad'. The 'Device' column shows various device types: desktop, mobile, Desktop, tablet, desktop, MOBILE, TABLET, TABLET, Tablet, Mobile, DESKTOP, Desktop, Desktop, mobile, Desktop, desktop, Hyderabad, Mobile, Hyderabad, mobile.

On the right, the 'APPLIED STEPS' panel shows a list of steps: Source, Changed Type, Replaced Value, Changed Type1, Replaced Value1, Replaced Value2, Replaced Value3, Replaced Value4, Replaced Value5, Replaced Value6, Trimmed Text, and Capitalized Each Word. The 'Capitalized Each Word' step is highlighted with a red box.

In “Device” column data is in Mixed case format.

The screenshot shows a data cleaning interface with a table of data. The 'Device' column is filtered to show various device types: desktop, mobile, Desktop, tablet, desktop, MOBILE, TABLET, TABLET, Tablet, Mobile, DESKTOP, Desktop, Desktop, mobile, desktop, desktop, Mobile, mobile, Mobile, mobile, Mobile.

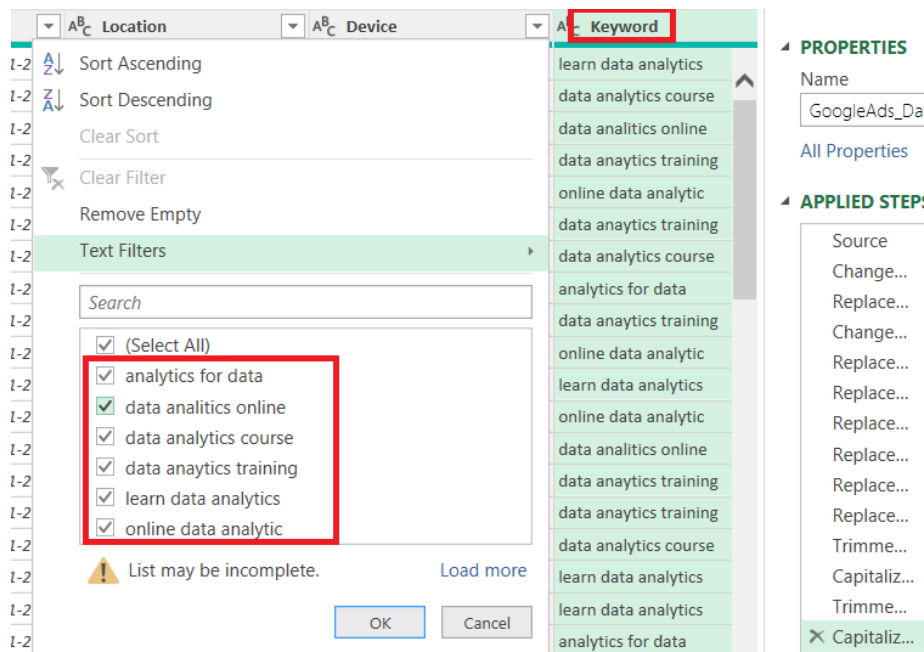
On the right, the 'APPLIED STEPS' panel shows a list of steps: Source, Changed Type, Replaced Value, Changed Type1, Replaced Value1, Replaced Value2, Replaced Value3, Replaced Value4, Replaced Value5, Replaced Value6, Trimmed Text, and Capitalized Each Word. The 'Capitalized Each Word' step is highlighted with a red box.

Case variations are aligned by “Capitalize each word” and data looks cleaned.

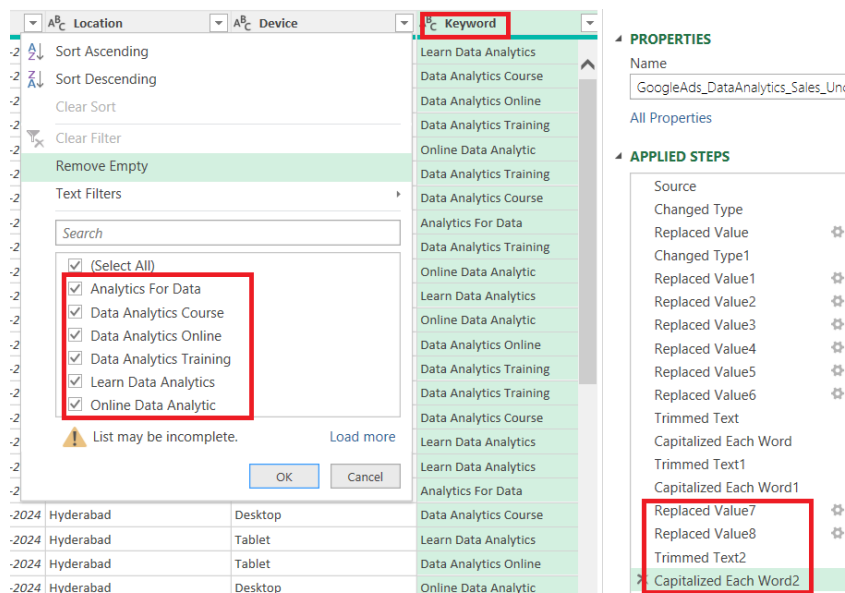
The screenshot shows a data cleaning interface with a table of data. The 'Device' column is filtered to show various device types: Desktop, Mobile, Desktop, Tablet, Desktop, Mobile, Tablet, Tablet, Mobile, Desktop, Desktop, Mobile, Desktop, Mobile, Desktop, Mobile, Desktop, Mobile, Mobile, Mobile, Mobile.

On the right, the 'APPLIED STEPS' panel shows a list of steps: Source, Changed Type, Replaced Value, Changed Type1, Replaced Value1, Replaced Value2, Replaced Value3, Replaced Value4, Replaced Value5, Replaced Value6, Trimmed Text, Capitalized Each Word, Trimmed Text1, and Capitalized Each Word1. The 'Capitalized Each Word1' step is highlighted with a red box.

In “Keyword” column data is in Mixed case format and typos also found.



Case variations are aligned by “Capitalize each word” and Misspelling Cleared by using “Replace values” option data looks cleaned.



Remove Duplicates:

There is no duplicate found in the Dataset.

Handling Missing Values:

Column Clicks, Impressions, Cost, Lead, Conversions, Conversion Rate, Sales Amount are having missing values/blanks. To handle the missing values are some methods named mean, median, mode available. For quick analysis, Descriptive Statistics calculated using Analysis → Data analysis Toolpak → Descriptive Statistics.

From that mean value is identified and “Clicks” column’s missing values are filled by “Mean” by Using the following Formula

=IF(C29="",AVERAGE(\$C\$2:\$C\$2601),C29)

And result matches the descriptive statistical values.

=IF(C29="",AVERAGE(\$C\$2:\$C\$2601),C29)									
Conversions	Conversion Rate	Sale Amount	Ad Date	Location	Device	Keyword	Clicks		
7	0.058	\$1,892.00	16-11-2024	Hyderabad	Desktop	Learn Data Analytics	104		
8	0.046	\$1,679.00	20-11-2024	Hyderabad	Mobile	Data Analytics Course	173		
9		\$1,624.00	16-11-2024	Hyderabad	Desktop	Data Analytics Online	90	Mean	138.9569936
6		\$1,225.00	26-11-2024	Hyderabad	Tablet	Data Analytics Training	142	Standard Error	0.694055248
8		\$1,091.00	22-11-2024	Hyderabad	Desktop	Online Data Analytic	156	Median	139
8		\$1,315.00	16-11-2024	Hyderabad	Mobile	Data Analytics Training	195	Mode	127
5	0.043	\$1,640.00	06-11-2024	Hyderabad	Tablet	Data Analytics Course	116	Standard Deviation	34.61937558
3	0.016	\$1,509.00	24-11-2024	Hyderabad	Tablet	Analytics For Data	184	Sample Variance	1198.501165
4	0.058	\$1,362.00	24-11-2024	Hyderabad	Tablet	Data Analytics Training	113	Kurtosis	-1.17531159
9	0.054	\$1,029.00	12-11-2024	Hyderabad	Mobile	Online Data Analytic	166	Skewness	0.019030533
6	0.059	\$1,900.00	14-11-2024	Hyderabad	Desktop	Learn Data Analytics	101	Range	119
5	0.05	\$1,130.00	22-11-2024	Hyderabad	Desktop	Online Data Analytic	101	Minimum	80
3	0.024	\$1,959.00	27-11-2024	Hyderabad	Desktop	Data Analytics Online	125	Maximum	199
7	0.038	\$1,623.00	12-11-2024	Hyderabad	Mobile	Data Analytics Training	196	Sum	345725
9	0.05	\$1,538.00	04-11-2024	Hyderabad	Desktop	Data Analytics Training	181	Count	2488
8	0.078	\$1,755.00	29-11-2024	Hyderabad	Desktop	Data Analytics Course	102		
9	0.047	\$1,614.00	10-11-2024	Hyderabad	Mobile	Learn Data Analytics	193		
10		\$1,688.00	21-11-2024	Hyderabad	Desktop	Data Analytics Training	138.957		
3		\$1,783.00	23-11-2024	Hyderabad	Mobile	Learn Data Analytics	128		
9	0.105	\$1,975.00	13-11-2024	Hyderabad	Mobile	Analytics For Data	86		
4	0.021	\$1,590.00	08-11-2024	Hyderabad	Tablet	Online Data Analytic	188		
5		\$1,111.00	22-11-2024	Hyderabad	Desktop	Online Data Analytic	113		
4		\$1,041.00	12-11-2024	Hyderabad	Tablet	Data Analytics Online	138.957		

“Impressions” column filled by Median by using “Find & Replace” method to avoid extra column storage.

Course Name	Clicks	Impressions	Cost	Leads	Conversions	Conversion Rate	Sale Am
ytics Course	91	4523	\$203.52		9	0.099	\$1
ytics Course	117	4523	\$214.18	29	4	0.034	\$1
ytics Course	160	4523	\$245.87	11	6	0.037	
ytics Course	199	4523	\$199.98	15	8	0.04	\$1
ytics Course	101	4523	\$234.17	29	5	0.05	\$1
ytics Course	90	4523	\$249.00	21	10		\$1
ytics Course	163	4523	\$206.46	14	3		\$1
ytics Course	145	4523	\$236.03	24	8		\$1
ytics Course	181	4523	\$208.33	22	8	0.044	\$1
ytics Course	83	4523	\$229.97	12	8	0.096	\$2
ytics Course	196	4523	\$206.31	24	8	0.051	\$1
ytics Course	147	4523	\$205.83	25	8		\$1
ytics Course	173	4523	\$241.61	28	3	0.017	\$1
ytics Course	192	4523	\$180.82	27	4	0.021	\$1
ytics Course	174	4523	\$227.96	25	5	0.029	\$1
ytics Course	163	4523		11	3	0.018	\$1
ytics Course	144	4523	\$186.47	29	8	0.056	\$1
ytics Course		4523	\$234.85	11	8		\$1
ytics Course	132	4523	\$219.44	17	3	0.055	\$1
ytics Course	122	4523	\$217.66	25	10	0.053	\$1

Missing Values in “Cost” column are handled by “Mean” with grouped by “Device” by taking “AverageIF” as shown below;

=IF(E2="",AVERAGEIF(\$L\$2:\$L\$2601,L2,\$E\$2:\$E\$2601),E2)

=IF(E2="",AVERAGEIF(\$L\$2:\$L\$2601,L2,\$E\$2:\$E\$2601),E2)									
Date	Location	Device	Keyword	Clicks1	Cost1				
-11-2024	Hyderabad	Desktop	Learn Data Analytics	104	231.88				
-11-2024	Hyderabad	Mobile	Data Analytics Course	173	216.84				
-11-2024	Hyderabad	Desktop	Data Analytics Online	90	203.66		Mean		215.0906233
-11-2024	Hyderabad	Tablet	Data Analytics Training	142	237.66		Standard Error		0.405548703
-11-2024	Hyderabad	Desktop	Online Data Analytic	156	195.9		Median		215.57
-11-2024	Hyderabad	Mobile	Data Analytics Training	195	243.57		Mode		246.3
-11-2024	Hyderabad	Tablet	Data Analytics Course	116	237.79		Standard Deviation		20.28959797
-11-2024	Hyderabad	Tablet	Analytics For Data	184	229.61		Sample Variance		411.6677856
-11-2024	Hyderabad	Tablet	Data Analytics Training	113	214.5891		Kurtosis		-1.216948633
-11-2024	Hyderabad	Mobile	Online Data Analytic	166	186.78		Skewness		-0.038232892
-11-2024	Hyderabad	Desktop	Learn Data Analytics	101	236.79		Range		69.88
-11-2024	Hyderabad	Desktop	Online Data Analytic	101	208.12		Minimum		180.01
-11-2024	Hyderabad	Desktop	Data Analytics Online	125	191.3		Maximum		249.89
-11-2024	Hyderabad	Mobile	Data Analytics Training	196	207.46		Sum		538371.83
-11-2024	Hyderabad	Desktop	Data Analytics Training	181	185.09		Count		2503
-11-2024	Hyderabad	Desktop	Data Analytics Course	102	201.69				
-11-2024	Hyderabad	Mobile	Learn Data Analytics	193	216.2053				
-11-2024	Hyderabad	Mobile	Learn Data Analytics	149	207.4				
-11-2024	Hyderabad	Mobile	Analytics For Data	150	217.41				
-11-2024	Hyderabad	Desktop	Data Analytics Course	145	214.4528				

“Leads” column filled by Median by using below formula, compared the values with Descriptive Statistics results.

=IF(F2="",MEDIAN(\$F\$2:\$F\$2601),F2)

=IF(F2="",MEDIAN(\$F\$2:\$F\$2601),F2)									
Leads	Conversions	Conversion Rate	Sale Amount	Clicks1	Cost1	Leads1			
14	7	0.058	\$1,892.00	104	231.88	14			
10	8	0.046	\$1,679.00	173	216.84	10			
26	9		\$1,624.00	90	203.66	26	Mean		20.0039185
17	6		\$1,225.00	142	237.66	17	Standard Error		0.119410864
30	8		\$1,091.00	156	195.9	30	Median		20
10	8		\$1,315.00	195	243.57	10	Mode		24
17	5	0.043	\$1,640.00	116	237.79	17	Standard Deviation		6.032317279
23	3	0.016	\$1,509.00	184	229.61	23	Sample Variance		36.38885175
27	4	0.058	\$1,362.00	113	214.5891	27	Kurtosis		-1.206693906
24	9	0.054	\$1,029.00	166	186.78	24	Skewness		-0.02460148
20	6	0.059	\$1,900.00	101	236.79	20	Range		20
24	5	0.05	\$1,130.00	101	208.12	24	Minimum		10
18	3	0.024	\$1,959.00	125	191.3	18	Maximum		30
10	7	0.038	\$1,623.00	196	207.46	10	Sum		51050
11	9	0.05	\$1,538.00	181	185.09	11	Count		2552
22	8	0.078	\$1,755.00	102	201.69	22			
15	9	0.047	\$1,614.00	193	216.2053	15			
19	9	0.06	\$1,693.00	149	207.4	19			
20	5		\$1,785.00	150	217.41	20			
25	6	0.041	\$1,516.00	145	214.4528	25			
10	10	0.044	\$1,735.00	184	223.3	10			

“Conversions” column filled by Median by using below formula, compared the values with Descriptive Statistics results.

=IF(G2="",MEDIAN(\$G\$2:\$G\$2601),G2)

=IF(G2="",MEDIAN(\$G\$2:\$G\$2601),G2)

	I	N	O	P	Q	R	S	T	AC	AD
Rate	Sale_Amount	Clicks1	Cost1	Leads1	Conversion1					
0.058	\$1,892.00	104	231.88	14	7					
0.046	\$1,679.00	173	216.84	10	8					
	\$1,624.00	90	203.66	26	9					
	\$1,225.00	142	237.66	17	6				Mean	6.519002375
	\$1,091.00	156	195.9	30	8				Standard Error	0.045216945
	\$1,315.00	195	243.57	10	8				Median	7
									Mode	7
0.043	\$1,640.00	116	237.79	17	5				Standard Deviation	2.272573269
0.016	\$1,509.00	184	229.61	23	3				Sample Variance	5.164589262
0.058	\$1,362.00	113	214.5891	27	4				Kurtosis	-1.223903479
0.054	\$1,029.00	166	186.78	24	9				Skewness	-0.01244161
0.059	\$1,900.00	101	236.79	20	6				Range	7
0.05	\$1,130.00	101	208.12	24	5				Minimum	3
0.024	\$1,959.00	125	191.3	18	3				Maximum	10
0.038	\$1,623.00	196	207.46	10	7				Sum	16467
0.05	\$1,538.00	181	185.09	11	9				Count	2526
0.078	\$1,755.00	102	201.69	22	8					
0.047	\$1,614.00	193	216.2053	15	9					

“Conversion Rate” column filled by below formula,

=[@Conversion1]/[@Clicks1]

=[@Conversion1]/[@Clicks1]

	I	N	O	Q	P	S	T	AC	AD
	Sale_Amount	Clicks1	Cost1	Leads1	Conversion1	Conversion Rate1			
	\$1,892.00	104.0	231.88	14	7	0.067			
	\$1,679.00	173.0	216.84	10	8	0.046			
	\$1,624.00	90.0	203.66	26	9	0.100			
	\$1,225.00	142.0	237.66	17	6	0.042			
	\$1,091.00	156.0	195.9	30	8	0.051			
	\$1,315.00	195.0	243.57	10	8	0.041			
	\$1,640.00	116.0	237.79	17	5	0.043			
	\$1,509.00	184.0	229.61	23	3	0.016			
	\$1,362.00	113.0	214.5891	27	4	0.035			
	\$1,029.00	166.0	186.78	24	9	0.054			
	\$1,900.00	101.0	236.79	20	6	0.059			
	\$1,130.00	101.0	208.12	24	5	0.050			
	\$1,959.00	125.0	191.3	18	3	0.024			
	\$1,623.00	196.0	207.46	10	7	0.036			
	\$1,538.00	181.0	185.09	11	9	0.050			
	\$1,755.00	102.0	201.69	22	8	0.078			

Missing Values in “Sales Amount” column are handled by “Mean” with grouped by “Device” by taking “AverageIF” as shown below and results matches with Descriptive Statistics values.

=IF(I2="",AVERAGEIF(\$L\$2:\$L\$2601,L2,\$I\$2:\$I\$2601),I2)

=IF(I2="",AVERAGEIF(\$L\$2:\$L\$2601,L2,\$I\$2:\$I\$2601),I2)

I	J	K	L	M	S	T	AF	AG	AH
Amount	Ad Date	Location	Device	Keyword	Sales Amount1				
\$1,892.00	16-11-2024	Hyderabad	Desktop	Learn Data Analytics	1892				
\$1,679.00	20-11-2024	Hyderabad	Mobile	Data Analytics Course	1679				
\$1,624.00	16-11-2024	Hyderabad	Desktop	Data Analytics Online	1624		0.04897923	Mean	1498.648111
\$1,225.00	26-11-2024	Hyderabad	Tablet	Data Analytics Training	1225		0.000449862	Standard Error	5.787451133
\$1,091.00	22-11-2024	Hyderabad	Desktop	Online Data Analytic	1091		0.046	Median	1505
\$1,315.00	16-11-2024	Hyderabad	Mobile	Data Analytics Training	1315		0.05	Mode	1719
\$1,640.00	06-11-2024	Hyderabad	Tablet	Data Analytics Course	1640		0.019987225	Standard Deviation	287.1065787
\$1,509.00	24-11-2024	Hyderabad	Tablet	Analytics For Data	1509		0.000399489	Sample Variance	82430.18751
\$1,041.00	12-11-2024	Hyderabad	Tablet	Data Analytics Online	1041				
\$1,710.00	03-11-2024	Hyderabad	Tablet	Data Analytics Course	1710				
	25-11-2024	Hyderabad	Mobile	Data Analytics Course	1496.136804				
\$1,564.00	26-11-2024	Hyderabad	Tablet	Learn Data Analytics	1564				
\$1,902.00	26-11-2024	Hyderabad	Desktop	Learn Data Analytics	1902				
\$1,267.00	05-11-2024	Hyderabad	Desktop	Data Analytics Online	1267				
\$1,340.00	21-11-2024	Hyderabad	Desktop	Analytics For Data	1340				
\$1,692.00	16-11-2024	Hyderabad	Mobile	Data Analytics Training	1692				
\$1,054.00	18-11-2024	Hyderabad	Desktop	Data Analytics Online	1054				
	11-11-2024	Hyderabad	Mobile	Data Analytics Online	1496.136804				
\$1,219.00	16-11-2024	Hyderabad	Tablet	Data Analytics Course	1219				
\$1,946.00	11-11-2024	Hyderabad	Tablet	Analytics For Data	1946				
\$1,833.00	08-11-2024	Hyderabad	Desktop	Analytics For Data	1833				
\$1,975.00	06-11-2024	Hyderabad	Mobile	Data Analytics Online	1975				
\$1,556.00	04-11-2024	Hyderabad	Tablet	Learn Data Analytics	1556				
	09-11-2024	Hyderabad	Desktop	Data Analytics Online	1499.683274				
\$1,728.00	12-11-2024	Hyderabad	Tablet	Learn Data Analytics	1728				

Here is the Cleaned Dataset,

Ad_ID	Campaign Name	Clicks	Impressions	Cost	Leads	Conversions	Conversion Rate	Sale Amount	Ad Date	Location	Device	Keyword
A1000	Data Analytics Course	104	4498	\$231.88	14	7	0.067	\$1,892.00	16-11-2024	Hyderabad	Desktop	Learn Data Analytics
A1001	Data Analytics Course	173	5107	\$216.84	10	8	0.046	\$1,679.00	20-11-2024	Hyderabad	Mobile	Data Analytics Course
A1002	Data Analytics Course	90	4544	\$203.66	26	9	0.100	\$1,624.00	16-11-2024	Hyderabad	Desktop	Data Analytics Online
A1003	Data Analytics Course	142	3185	\$237.66	17	6	0.042	\$1,225.00	26-11-2024	Hyderabad	Tablet	Data Analytics Training
A1004	Data Analytics Course	156	3361	\$195.90	30	8	0.051	\$1,091.00	22-11-2024	Hyderabad	Desktop	Online Data Analytic
A1005	Data Analytics Course	195	3776	\$243.57	10	8	0.041	\$1,315.00	16-11-2024	Hyderabad	Mobile	Data Analytics Training
A1006	Data Analytics Course	116	4480	\$237.79	17	5	0.043	\$1,640.00	06-11-2024	Hyderabad	Tablet	Data Analytics Course
A1007	Data Analytics Course	184	5060	\$229.61	23	3	0.016	\$1,509.00	24-11-2024	Hyderabad	Tablet	Analytics For Data
A1008	Data Analytics Course	113	5434	\$214.59	27	4	0.035	\$1,362.00	24-11-2024	Hyderabad	Tablet	Data Analytics Training
A1009	Data Analytics Course	166	3355	\$186.78	24	9	0.054	\$1,029.00	12-11-2024	Hyderabad	Mobile	Online Data Analytic
A1010	Data Analytics Course	101	5399	\$236.79	20	6	0.059	\$1,900.00	14-11-2024	Hyderabad	Desktop	Learn Data Analytics
A1011	Data Analytics Course	101	3613	\$208.12	24	5	0.050	\$1,130.00	22-11-2024	Hyderabad	Desktop	Online Data Analytic
A1012	Data Analytics Course	125	3259	\$191.30	18	3	0.024	\$1,959.00	27-11-2024	Hyderabad	Desktop	Data Analytics Online
A1013	Data Analytics Course	196	3742	\$207.46	10	7	0.036	\$1,623.00	12-11-2024	Hyderabad	Mobile	Data Analytics Training
A1014	Data Analytics Course	181	4311	\$185.09	11	9	0.050	\$1,538.00	04-11-2024	Hyderabad	Desktop	Data Analytics Training
A1015	Data Analytics Course	102	5461	\$201.69	22	8	0.078	\$1,755.00	29-11-2024	Hyderabad	Desktop	Data Analytics Course
A1016	Data Analytics Course	193	5159	\$216.21	15	9	0.047	\$1,614.00	10-11-2024	Hyderabad	Mobile	Learn Data Analytics
A1017	Data Analytics Course	149	4431	\$207.40	19	9	0.060	\$1,693.00	12-11-2024	Hyderabad	Mobile	Learn Data Analytics
A1018	Data Analytics Course	150	3113	\$217.41	20	5	0.033	\$1,785.00	07-11-2024	Hyderabad	Mobile	Analytics For Data
A1019	Data Analytics Course	145	5278	\$214.45	25	6	0.041	\$1,516.00	05-11-2024	Hyderabad	Desktop	Data Analytics Course
A1020	Data Analytics Course	184	4143	\$223.30	10	10	0.054	\$1,735.00	21-11-2024	Hyderabad	Tablet	Learn Data Analytics
A1021	Data Analytics Course	171	4154	\$184.23	30	7	0.041	\$1,803.00	08-11-2024	Hyderabad	Tablet	Data Analytics Online
A1022	Data Analytics Course	122	5187	\$211.24	27	6	0.049	\$1,322.00	20-11-2024	Hyderabad	Desktop	Online Data Analytic

3.Data Transformation and Metrics Calculations:

In this project, raw campaign data was transformed into meaningful performance metrics using a formula. The following key marketing metrics were derived during the data transformation process.

Click-Through Rate (CTR)

Click-Through Rate (CTR) measures the percentage of users who clicked the ad after seeing it. CTR indicates ad effectiveness and audience engagement. A higher CTR suggests strong ad relevance and performance

$$=[@Clicks]/[@Impressions]$$

Cost Per Click (CPC)

Cost Per Click (CPC) measures how much money is spent for each click received on the advertisement. CPC helps evaluate advertising cost efficiency. A lower CPC indicates better cost management in generating user engagement.

$$=[@Cost]/[@Clicks]$$

Return on Ad Spend (ROAS)

ROAS measures how much revenue is generated for every ₹1 spent on advertising. ROAS evaluates revenue efficiency.

$$=[@[Sale_Amount]]/[@Cost]$$

Return on Investment (ROI)

ROI measures the profitability of the campaign relative to its cost. ROI measures profit efficiency.

$$=[@Profit]/[@Cost]$$

Profit

Profit represents the net earnings generated after deducting the total advertising cost from the total sales revenue.

It indicates the actual financial gain from the marketing campaign.

$$=[@[\text{Sale_Amount}]]-[@[\text{Cost}]]$$

Here is screenshot of Calculating metrics, as shown below;

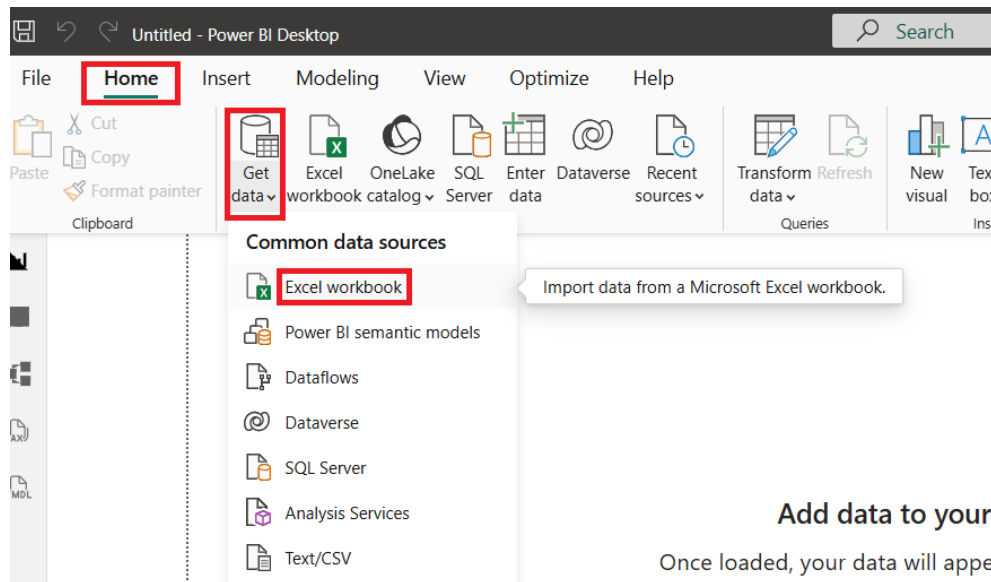
=[@Clicks]/[@Impressions]						
M	N	O	P	Q	R	
Keyword	Click Through Rate	Cost Per Click	Profit	Return on Ad Spent	Return on Investment	
Learn Data Analytics	0.023	\$2.23	\$1,660.12	8.16	7.16	
Data Analytics Course	0.034	\$1.25	\$1,462.16	7.74	6.74	
Data Analytics Online	0.020	\$2.26	\$1,420.34	7.97	6.97	
Data Analytics Training	0.045	\$1.67	\$987.34	5.15	4.15	
Online Data Analytic	0.046	\$1.26	\$895.10	5.57	4.57	
Data Analytics Training	0.052	\$1.25	\$1,071.43	5.40	4.40	
Data Analytics Course	0.026	\$2.05	\$1,402.21	6.90	5.90	
Analytics For Data	0.036	\$1.25	\$1,279.39	6.57	5.57	
Data Analytics Training	0.021	\$1.90	\$1,147.41	6.35	5.35	
Online Data Analytic	0.049	\$1.13	\$842.22	5.51	4.51	
Learn Data Analytics	0.019	\$2.34	\$1,663.21	8.02	7.02	
Online Data Analytic	0.028	\$2.06	\$921.88	5.43	4.43	
Data Analytics Online	0.038	\$1.53	\$1,767.70	10.24	9.24	
Data Analytics Training	0.052	\$1.06	\$1,415.54	7.82	6.82	
Data Analytics Training	0.042	\$1.02	\$1,352.91	8.31	7.31	
Data Analytics Course	0.019	\$1.98	\$1,553.31	8.70	7.70	
Learn Data Analytics	0.037	\$1.12	\$1,397.79	7.47	6.47	
Learn Data Analytics	0.034	\$1.39	\$1,485.60	8.16	7.16	
Analytics For Data	0.048	\$1.45	\$1,567.59	8.21	7.21	
Data Analytics Course	0.027	\$1.48	\$1,301.55	7.07	6.07	

After Transformation, Conditional formatting applied for better visual understanding,

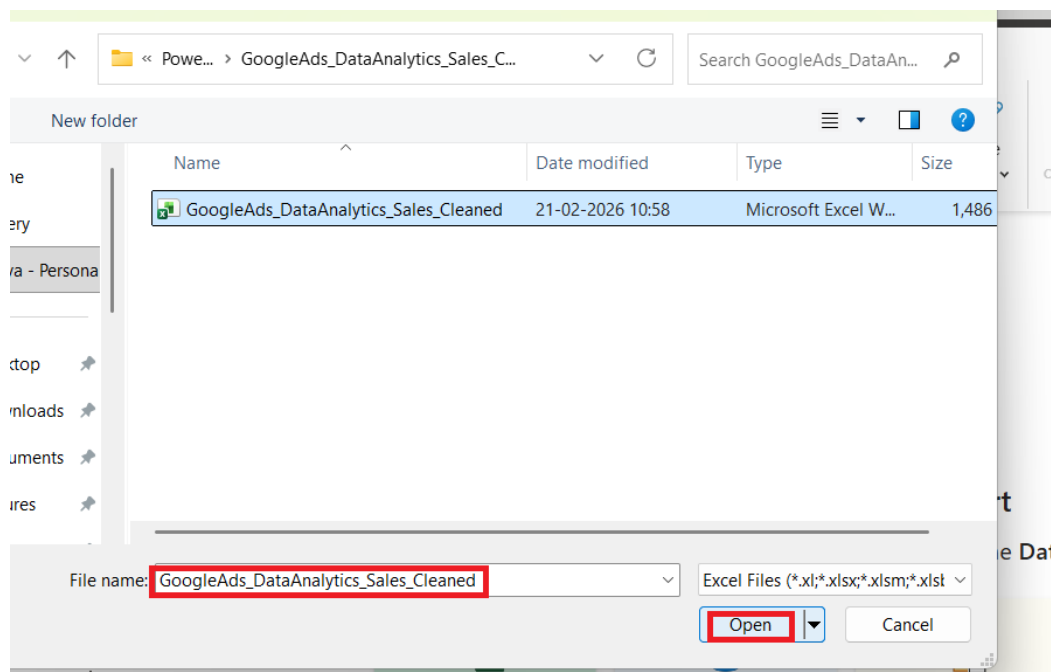
	I	J	K	L	M	N	O	P	Q	R
te	Sale_Amount	Ad_Date	Location	Device	Keyword	ClickThrough Rate	Cost Per Click	Profit	Return on Ad Spent	Return on Investment
0.067	\$1,892.00	16-11-2024	Hyderabad	Desktop	Learn Data Analytics	0.023	\$2.23	\$1,660.12	8.16	715.94%
0.046	\$1,679.00	20-11-2024	Hyderabad	Mobile	Data Analytics Course	0.034	\$1.25	\$1,462.16	7.74	674.30%
0.100	\$1,624.00	16-11-2024	Hyderabad	Desktop	Data Analytics Online	0.020	\$2.26	\$1,420.34	7.97	697.41%
0.042	\$1,225.00	26-11-2024	Hyderabad	Tablet	Data Analytics Training	0.045	\$1.67	\$987.34	5.15	415.44%
0.051	\$1,091.00	22-11-2024	Hyderabad	Desktop	Online Data Analytic	0.046	\$1.26	\$895.10	5.57	456.92%
0.041	\$1,315.00	16-11-2024	Hyderabad	Mobile	Data Analytics Training	0.052	\$1.25	\$1,071.43	5.40	439.89%
0.043	\$1,640.00	06-11-2024	Hyderabad	Tablet	Data Analytics Course	0.026	\$2.05	\$1,402.21	6.90	589.68%
0.016	\$1,509.00	24-11-2024	Hyderabad	Tablet	Analytics For Data	0.036	\$1.25	\$1,279.39	6.57	557.20%
0.035	\$1,362.00	24-11-2024	Hyderabad	Tablet	Data Analytics Training	0.021	\$1.90	\$1,147.41	6.35	534.70%
0.054	\$1,029.00	12-11-2024	Hyderabad	Mobile	Online Data Analytic	0.049	\$1.13	\$842.22	5.51	450.92%
0.059	\$1,900.00	14-11-2024	Hyderabad	Desktop	Learn Data Analytics	0.019	\$2.34	\$1,663.21	8.02	702.40%
0.050	\$1,130.00	22-11-2024	Hyderabad	Desktop	Online Data Analytic	0.028	\$2.06	\$921.88	5.43	442.96%
0.024	\$1,959.00	27-11-2024	Hyderabad	Desktop	Data Analytics Online	0.038	\$1.53	\$1,767.70	10.24	924.05%
0.036	\$1,623.00	12-11-2024	Hyderabad	Mobile	Data Analytics Training	0.052	\$1.06	\$1,415.54	7.82	682.32%
0.050	\$1,538.00	04-11-2024	Hyderabad	Desktop	Data Analytics Training	0.042	\$1.02	\$1,352.91	8.31	730.95%
0.078	\$1,755.00	29-11-2024	Hyderabad	Desktop	Data Analytics Course	0.019	\$1.98	\$1,553.31	8.70	770.15%
0.047	\$1,614.00	10-11-2024	Hyderabad	Mobile	Learn Data Analytics	0.037	\$1.12	\$1,397.79	7.47	646.51%
0.060	\$1,693.00	12-11-2024	Hyderabad	Mobile	Learn Data Analytics	0.034	\$1.39	\$1,485.60	8.16	716.30%
0.033	\$1,785.00	07-11-2024	Hyderabad	Mobile	Analytics For Data	0.048	\$1.45	\$1,567.59	8.21	721.03%
0.041	\$1,516.00	05-11-2024	Hyderabad	Desktop	Data Analytics Course	0.027	\$1.48	\$1,301.55	7.07	606.92%
0.054	\$1,735.00	21-11-2024	Hyderabad	Tablet	Learn Data Analytics	0.044	\$1.21	\$1,511.70	7.77	676.98%

Data Visualization using Power BI:

After the transformation process, Data was loaded into Power BI for Visualisation and Dashboards Creation. Data was Loaded into Power BI by Clicking Home → Get data → Excel work books.



Select the file and click open to load data,



In Navigator window select the file and click Load for Further analysis.

Navigator

Display Options ▾

- GoogleAds_DataAnalytics_...
- GoogleAds_DataAnaly...
- GoogleAds_DataAnaly...
- GoogleAds_DataAnaly...
- GoogleAds_DataAnaly...
- Campaign_Performan...**
- Dataset Cleaned
- Dataset Cleaning
- Raw Dataset

Campaign_Performance_Details

Ad_ID	Campaign_Name	Clicks	Impressions	Cost	Leads	Conversion
A1000	Data Analytics Course	104	4498	231.88	14	
A1001	Data Analytics Course	173	5107	216.84	10	
A1002	Data Analytics Course	90	4544	203.66	26	
A1003	Data Analytics Course	142	3185	237.66	17	
A1004	Data Analytics Course	156	3361	195.9	30	
A1005	Data Analytics Course	195	3776	243.57	10	
A1006	Data Analytics Course	116	4480	237.79	17	
A1007	Data Analytics Course	184	5060	229.61	23	
A1008	Data Analytics Course	113	5434	214.589059	27	
A1009	Data Analytics Course	166	3355	186.78	24	
A1010	Data Analytics Course	101	5399	236.79	20	
A1011	Data Analytics Course	101	3613	208.12	24	
A1012	Data Analytics Course	125	3259	191.3	18	
A1013	Data Analytics Course	196	3742	207.46	10	
A1014	Data Analytics Course	181	4311	185.09	11	
A1015	Data Analytics Course	102	5461	201.69	22	
A1016	Data Analytics Course	193	5159	216.2053121	15	
A1017	Data Analytics Course	149	4431	207.4	19	
A1018	Data Analytics Course	150	3113	217.41	20	
A1019	Data Analytics Course	145	5278	214.4527888	25	
A1020	Data Analytics Course	184	4143	223.3	10	
A1021	Data Analytics Course	171	4154	184.23	30	
A1022	Data Analytics Course	122	5187	211.24	27	

Load Transform Data Cancel

Visualization

To consolidate campaign performance metrics into a single structured format, a summary table was created using the SUMMARIZE function in Power BI.

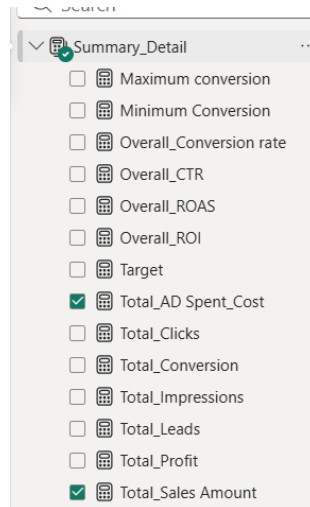
This table aggregates key performance indicators from the Campaign_Performance_Details dataset.

Also, Measures was created to visualize the metrics values by Cards as shown below,

```
1 Summary_Table = SUMMARIZE('Campaign_Performance_Details', "Total_AD Spent_Cost", Sum
(Campaign_Performance_Details[Cost]), "Total_Conversion", Sum(Campaign_Performance_Details[Conversions]),
"Total_Sales_Amount", Sum(Campaign_Performance_Details[Sale_Amount]), "Total_Profit", Sum
(Campaign_Performance_Details[Profit]), "Total_Clicks", Sum(Campaign_Performance_Details[Clicks]),
"Total_Impressions", Sum(Campaign_Performance_Details[Impressions]), "Overall_Conversion_rate", Divide
([Total_Conversion],[Total_Clicks]), "Overall_CTR", Divide([Total_Clicks],[Total_Impressions]),
"Overall_ROAS", DIVIDE([Total_Sales_Amount],[Total_AD Spent_Cost]), "Overall_ROI", Divide([Total_Profit],
[Total_AD Spent_Cost]))
```

5.97 Overall_ROI	6.97 Overall_ROAS	0.03 Overall_CTR	0.05 Overall_Conversion rate
₹ 559.23K Total_AD Spent_Cost	17K Total_Conversion	₹ 3.9M Total_Sales Amount	₹ 3.34M Total_Profit

Created the Measures Table separately for better understanding,



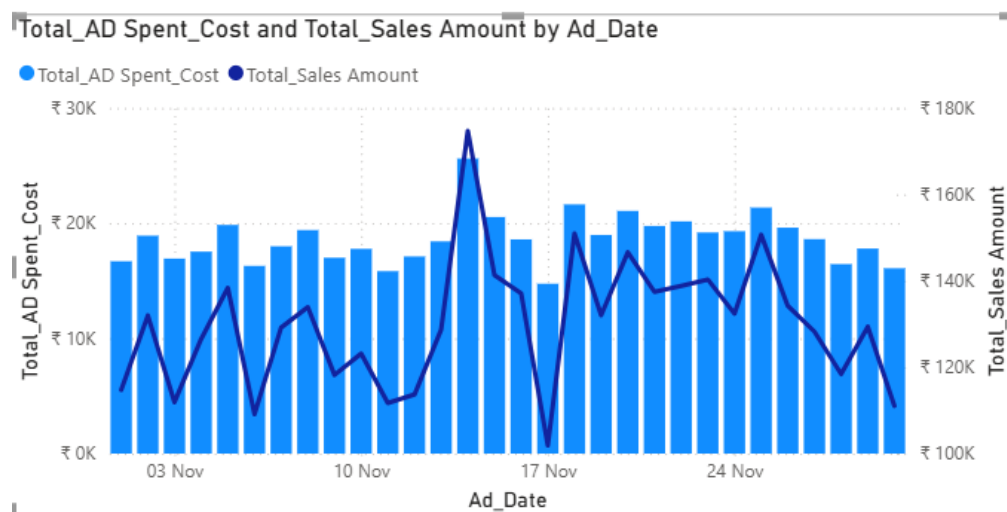
Charts:

1.Revenue vs Cost Trend by Date:

- Sales consistently remain much higher than cost.
- Major performance spike around middle of November.
- No days where cost exceeds revenue.

Insight:

Campaign performance is stable with occasional high-performing days.

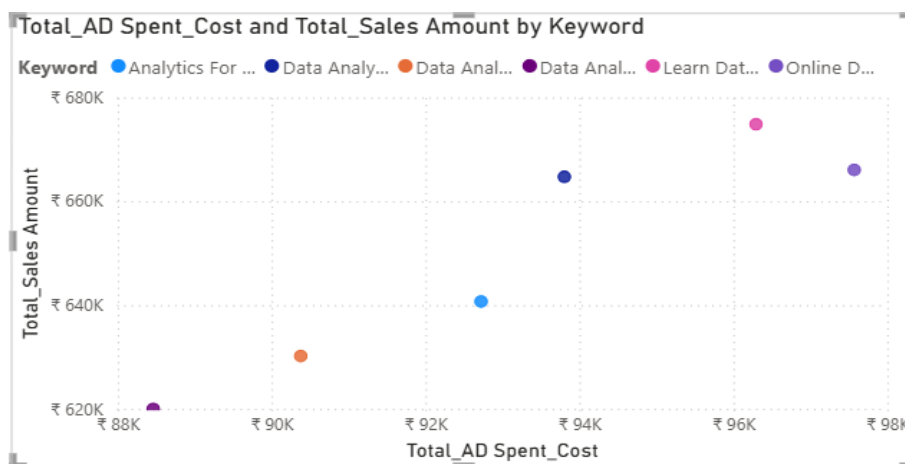


2. Cost vs Sales by Keyword:

- There is a positive relationship between ad Cost and Sales. Ad spend increases, sales also increase. This shows campaign spending is generating returns.
- Keyword “Learn Data Analytics” Ad spending around ₹96K generate the highest sales (₹674K).
- Ad spending around ₹88K generates only ₹620K.

Insight:

Budget allocation is effective overall, but optimizing low-performing keyword Ad can improve profitability.

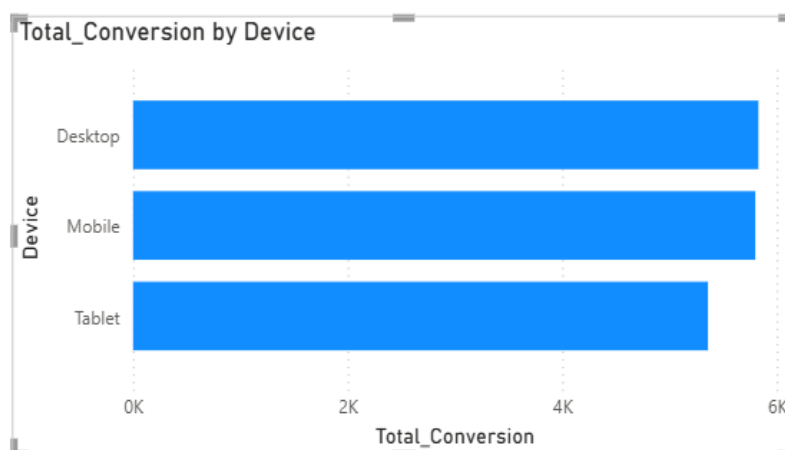


3. Total Conversion by Device

- Desktop (5828) and Mobile (5799) generate highest conversions.
- Tablet shows slightly lower performance.

Insight:

Conversions are evenly distributed across devices, indicating a well-optimized multi-device strategy.

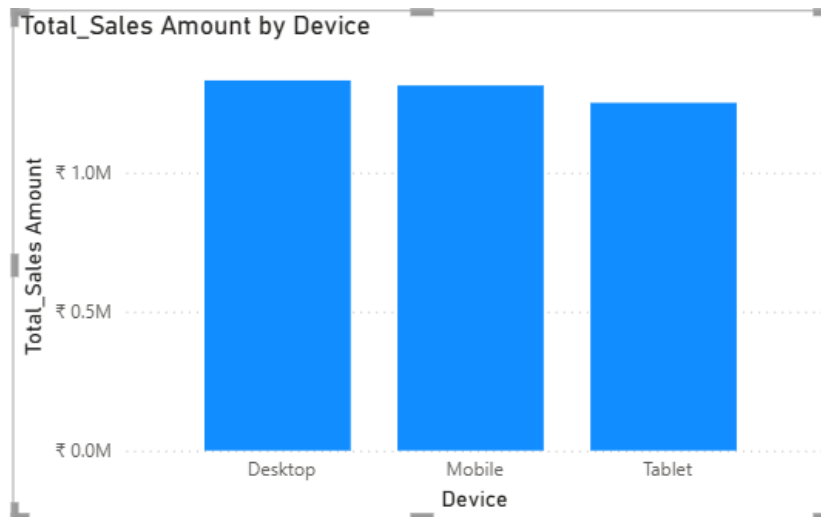


4.Total Sales Amount by Device

- Sales Amount is nearly equal across all devices.
- No single device dominates revenue generation.

Insight:

Campaign performance is balanced, reducing dependency on one device platform.

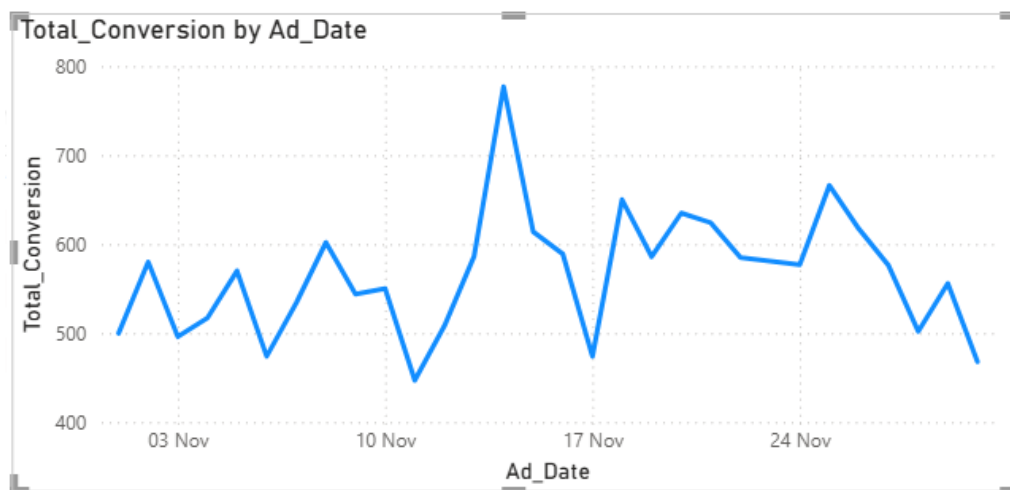


5.Total Conversion by Date

- Peak conversions observed on 14 November 2024,777 Conversions.
- Minor fluctuations throughout the period.
- End-of-month shows slight Lower conversions.

Insight:

Campaign performance is stable with a strong mid-month spike, need to concentrate on end of the month.

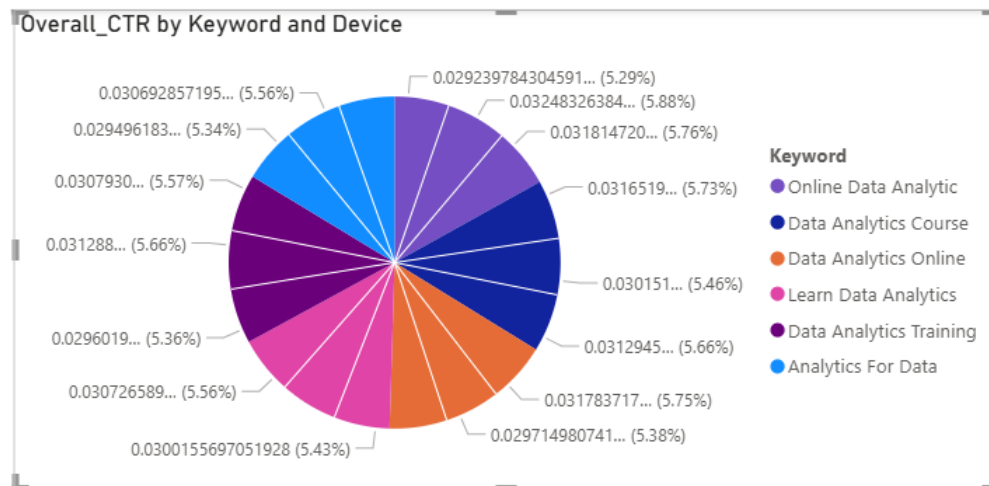


6.Overall CTR by Keyword and Device

- CTR values are closely distributed across keywords.
- No extreme variation.

Insight:

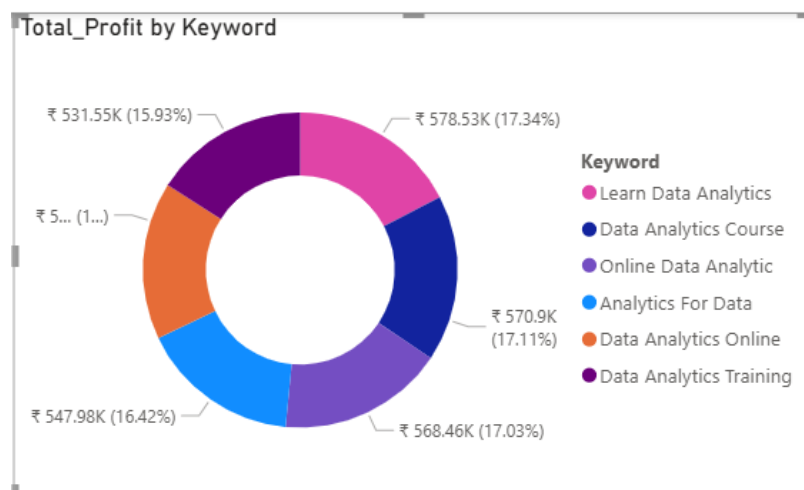
Ad creatives and keyword targeting are consistently effective across devices.



7.Total Profit by Keyword

- Profit is remarkably balanced across all keywords, with each contributing between 15.9% and 17.34% of the total.
- Minimal variance: There is only a 0.23% difference between the top performer ("Learn Data Analytics") and the lowest ("Data Analytics Course").

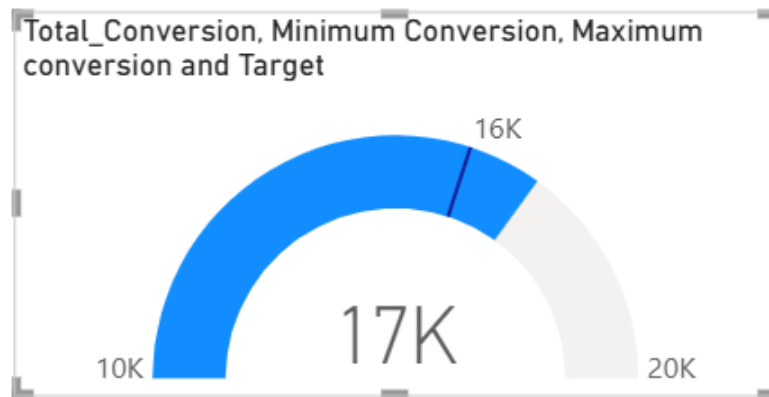
Insight: The marketing strategy is highly stable; consistent returns across all keywords indicate a diversified and low-risk.



8.Total Conversion vs Target

- Total conversions reached 17K, successfully surpassing the 16K target.
- Performance is currently trending toward the maximum goal of 20K.

Insight: The campaign is over-performing against its primary KPIs, indicating that the current budget and targeting strategy are highly effective for driving volume.



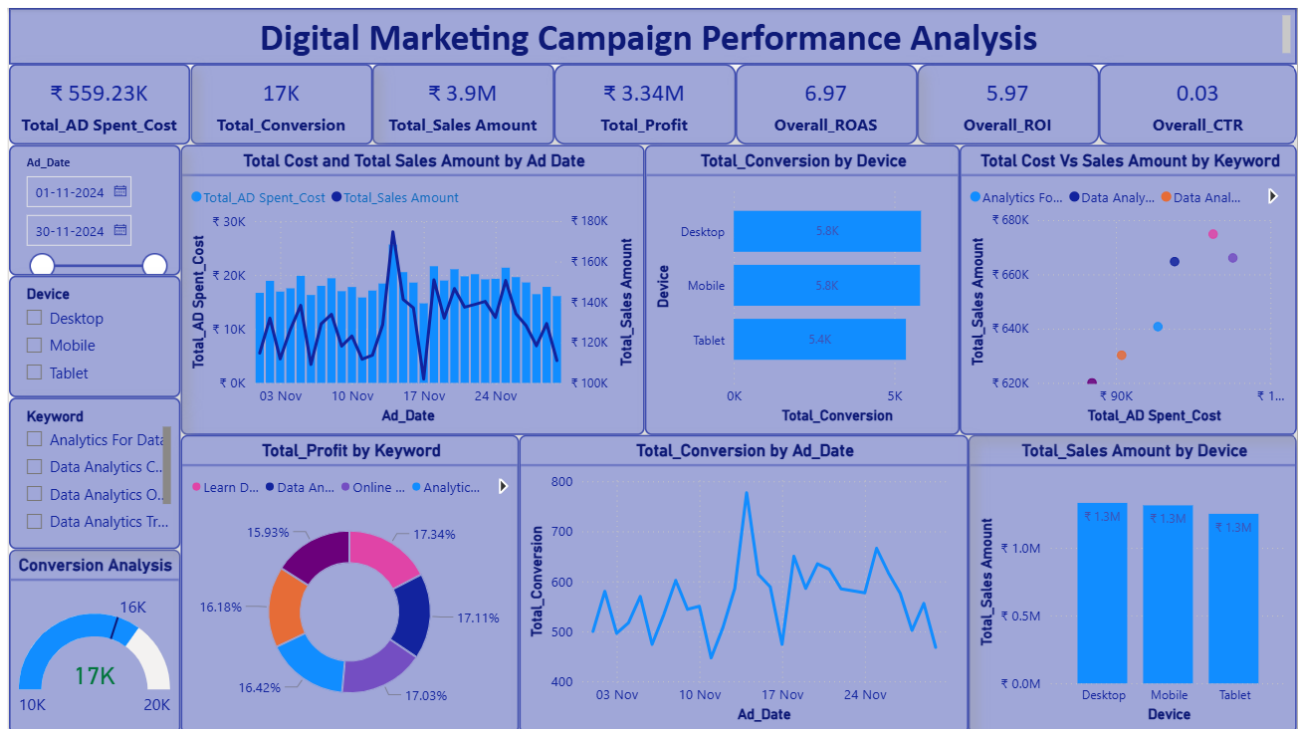
Slicers:

3 Slicers added for Ad date, Keyword, Device for making Dashboard More interactive.

The figure shows three interactive slicers. The 'Ad_Date' slicer has a date range from 01-11-2024 to 30-11-2024. The 'Keyword' slicer has a list of keywords with checkboxes. The 'Device' slicer has a list of device types with checkboxes.

Slicer	Options
Ad_Date	01-11-2024 to 30-11-2024
Keyword	<input type="checkbox"/> Analytics For Data <input type="checkbox"/> Data Analytics Course <input type="checkbox"/> Data Analytics Online <input type="checkbox"/> Data Analytics Training <input type="checkbox"/> Learn Data Analytics <input type="checkbox"/> Online Data Analytic
Device	<input type="checkbox"/> Desktop <input type="checkbox"/> Mobile <input type="checkbox"/> Tablet

Dashboard:



Insights & Summary (Top KPIs):

Below find the Summary details of the Dashboards;

- Total Ad Spend: ₹559K
- Total Sales Amount: ₹3.9M
- Total Profit: ₹3.34M
- Total Conversions: 17K
- ROAS: 6.97
- ROI: 5.97
- CTR: 3%

For every ₹1 spent, the campaign generated:

- ₹6.97 in revenue
- ₹5.97 in profit

So, Campaign is highly profitable and efficient.

Conclusion:

From Raw data into Meaningful Insights, we knew that, Data Analytics Course Campaign is highly profitable and its Marketing efficiency (ROAS & ROI) is strong. Also, device & keyword analysis are in Balanced performance. Mid of the month campaign performed best and achieve more Revenue. Comparing Total Ad spent Cost, Total Sales Amount is higher that denotes Campaign Performance was Good.

Overall, this project showcases how data analytics can transform raw campaign data into meaningful insights that drive business growth and marketing optimization.