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Project Title: Marketing Campaign Data Analysis using SQL

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Tool used : Microsoft sql server, microsoft word

Introduction

This project aims to analyse a marketing campaign dataset using SQL to extract insights related to impressions, engagement, conversions, and cost-effectiveness of different campaigns.

The dataset includes fields such

- [Campaign_ID]
- , [Company]
- , [Campaign_Type]
- , [Target_Audience]
- , [Duration]
- , [Channel_Used]
- , [Conversion_Rate]
- , [Acquisition_Cost]
- , [ROI]
- , [Location]
- , [Date]
- , [Clicks]
- , [Impressions]
- , [Engagement_Score]
- , [Customer_Segment]

SQL Queries & Insights

```
--1 calculate the total impression for each campaign
select Campaign_id ,sum(Impressions) as total_impression
from marketing_campaign_dataset$
group by Campaign_ID;
```

Results			Messages		
	Campaign_id	total_impression			
1	178893	8155			
2	55673	6213			
3	86932	1618			
4	133526	8922			
5	21537	6010			
6	8680	2383			
7	91177	8987			
8	2104	1710			

Insight: The campaign with the highest impressions had the most exposure, likely leading to higher engagement and conversions.

```
--2 identify campaign with the highest ROI
select top 1 Campaign_id, company,ROI
from marketing_campaign_dataset$
order by ROI DESC;
```

	Campaign_id	company	ROI
1	168	NexGen Systems	8

Insight: The campaign with id 168 has the highest ROI delivered the best return on marketing spend.

```
--3. Find the Top 3 Locations with the Most Impressions
select top 3 Location , sum(Impressions) as total_impression
from marketing_campaign_dataset$
group by Location
order by total_impression desc
```

100 %		
Results Messages		
	Location	total_impression
1	New York	221359756
2	Miami	221347726
3	Chicago	219999352

Insight: These locations:New York, Miami, Chicago had the highest ad visibility, indicating a strong market presence.

```

---4. Calculate Average Engagement Score by Target Audience
select Target_Audience, avg(Engagement_score) as avg_engagement_score
from marketing_campaign_dataset$
group by Target_Audience
order by Target_Audience desc

```

	Target_Audience	avg_engagement_score
1	Women 35-44	5.48657024793388
2	Women 25-34	5.49273985954565
3	Men 25-34	5.49197981211273
4	Men 18-24	5.51501527608733
5	All Ages	5.48686939356838

Insight: The target audience: woman 35-44, woman 25-34, men 25-34, men 18-24. All Ages with the highest engagement score responded best to the campaigns.

```

-- 5. Calculate the Overall Click-Through Rate (CTR)
select (sum(Clicks) *100.0/ sum(Impressions)) as overall_ctr
from marketing_campaign_dataset$

```

	overall_ctr
1	9.98263906336862

Insight: This metric helps assess overall ad effectiveness in driving clicks.

```
--6-Find the Most Cost-Effective Campaign (Cost per Conversion)
select campaign_id, Company, Acquisition_cost as cost_per_conversion
from marketing_campaign_dataset$
order by cost_per_conversion
```

	campaign_id	Company	cost_per_conversion
1	29439	DataTech Solutions	5000.00
2	4974	Innovate Industries	5000.00
3	139354	Alpha Innovations	5000.00
4	6211	NexGen Systems	5000.00
5	106116	Alpha Innovations	5000.00
6	100809	DataTech Solutions	5000.00
7	93001	DataTech Solutions	5001.00
8	12513	Innovate Industries	5001.00

Insight: The most cost-effective campaign achieved the highest conversions at the lowest cost.

```
--7. Find Campaigns with CTR Above a Threshold (e.g., 5%)
select Campaign_id , Company, (Clicks * 100.0 / Impressions) as ctr
from marketing_campaign_dataset$
where (Clicks * 100.0 / Impressions) > 5;
```

	Campaign_id	Company	ctr
1	1408	Alpha Innovations	58.4269662921348
2	1410	DataTech Solutions	10.2121877286506
3	1411	TechCorp	8.7708830548926
4	1412	TechCorp	11.6151866151866
5	1414	Alpha Innovations	15.6363636363636
6	1417	DataTech Solutions	9.69861772037163
7	1418	NexGen Systems	17.3035171515415
8	1419	Alpha Innovations	11.757699506551

Insight: These campaigns had strong engagement and attracted more clicks.

--8. Rank Channels by Total Conversions

```
select channel_used, sum(Conversion_Rate) as total_conversions
from marketing_campaign_dataset$
group by Channel_Used
order by total_conversions desc;
```

	channel_used	total_conversions
1	Email	2697.37999999999
2	Google Ads	2681.239999999987
3	Website	2674.949999999987
4	YouTube	2667.759999999988
5	Instagram	2667.569999999985
6	Facebook	2625.269999999985

Insight: This helps identify the most effective marketing channels :Email,been the highest, Google Ads, Website, You tube, Instagram,Facebook for conversions