**SQL Extra Challenge**

**1. Average cost per click**

SELECT

CampaignID,

Clicks,

Expense,

CASE

WHEN Clicks > 0 THEN ROUND(Expense / Clicks, 2)

ELSE 0

END AS AvgCPC

FROM

Campaigns;

**2.Find the overall average CPC across all campaigns**

SELECT

ROUND(SUM(Expense) / SUM(Clicks),2) AS OverallAvgCPC

FROM

Campaigns

WHERE

Clicks > 0;

**3.Cost per conversion**

SELECT

CampaignID,

Clicks,

Conversions,

Expense,

Sales,

CASE

WHEN Conversions > 0 THEN ROUND((Expense / Conversions),2)

ELSE 0

END AS CostPerConversion,

CASE

WHEN Expense > 0 THEN ROUND((Expense / Conversions),2)

ELSE 0

END AS ROI

FROM

Campaigns;

**4.Audience Segment Performance**

SELECT Segment,

COUNT(\*) AS SegmentCount,

SUM(Views) AS TotalViews,

SUM(Likes) AS TotalLikes,

SUM(Clicks) AS TotalClicks,

SUM(Conversions) AS TotalConversions

FROM

Audience

JOIN Campaigns ON campaigns.AudienceID=Audience.AudienceID

GROUP BY

Segment;

**5.Monthly Performance Trends**

SELECT

strftime('%m', StartDate) AS Month,

SUM(Clicks) AS TotalClicks,

SUM(Likes) AS TotalLikes,

SUM(Conversions) AS TotalConversions,

SUM(Expense) AS TotalExpense,

SUM(Sales) AS TotalSales,

CASE

WHEN SUM(Conversions) > 0 THEN ROUND(SUM(Expense) / SUM(Conversions),2)

ELSE 0

END AS CostPerConversion,

CASE

WHEN SUM(Expense) > 0 THEN ROUND((SUM(Sales) - SUM(Expense)) / SUM(Expense),2) \* 100

ELSE 0

END AS ROI

FROM

Campaigns

GROUP BY

strftime('%m', StartDate)

ORDER BY

Month;

**6.Quarterly Performance Trends**

SELECT

strftime('%Y', StartDate) AS Year,

(CASE

WHEN strftime('%m', StartDate) IN ('01', '02', '03') THEN 'Q1'

WHEN strftime('%m', StartDate) IN ('04', '05', '06') THEN 'Q2'

WHEN strftime('%m', StartDate) IN ('07', '08', '09') THEN 'Q3'

WHEN strftime('%m', StartDate) IN ('10', '11', '12') THEN 'Q4'

END) AS Quarter,

SUM(Clicks) AS TotalClicks,

SUM(Likes) AS TotalLikes,

SUM(Conversions) AS TotalConversions,

SUM(Expense) AS TotalExpense,

SUM(Sales) AS TotalSales,

CASE

WHEN SUM(Conversions) > 0 THEN ROUND(SUM(Expense) / SUM(Conversions),2)

ELSE 0

END AS CostPerConversion,

CASE

WHEN SUM(Expense) > 0 THEN ROUND((SUM(Sales) - SUM(Expense)) / SUM(Expense),2) \* 100

ELSE 0

END AS ROI

FROM

Campaigns

GROUP BY

Year, Quarter

ORDER BY

Year, Quarter;