Digital Marketing Campaign Analytics System

Course: Big Data Management & Analytics

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1. Executive Summary

This project presents the design and implementation of a Digital Marketing Campaign Analytics System using MySQL. The system was developed as part of the Big Data Management & Analytics course and is designed to address real-world marketing data challenges faced by modern businesses.

The project encompasses the complete database development lifecycle: problem identification, ER diagram design, schema creation, data population with over 200 records, and execution of 15 advanced SQL analytical queries that derive actionable marketing insights.

The database tracks marketing campaigns across 6 platforms (Google Ads, Facebook, Instagram, YouTube, Twitter, Email), monitors customer interactions, measures conversions, and evaluates campaign performance — enabling data-driven marketing decisions.

2. Problem Statement

2.1 Background

In today's digital landscape, businesses run marketing campaigns across multiple platforms simultaneously. Managing and analysing this data manually is inefficient, error-prone, and fails to provide timely insights. Marketing teams often struggle with:

- Tracking campaign performance across different digital platforms
- Measuring Return on Investment (ROI) for each campaign
- Understanding customer behaviour and interaction patterns
- Identifying which customer segments convert most effectively
- Analysing ad performance metrics like Click-Through Rate (CTR)

2.2 Problem Definition

Organisations running multiple digital marketing campaigns across various platforms such as Google Ads, Facebook, Instagram, YouTube, Twitter, and Email struggle to track campaign performance, customer engagement, lead conversion, and ROI in a centralised manner.

This project aims to design and implement a normalised relational database system that captures, stores, and analyses marketing campaign data to help businesses make data-driven decisions, optimise ad spend, and improve customer targeting strategies.

2.3 Proposed Solution

A centralised MySQL relational database was designed with 8 interrelated tables to store all marketing data. SQL queries are then used to extract meaningful business insights from this data, enabling marketing managers to make informed decisions.

3. Project Objectives

1. Design a fully normalised relational database (3NF) for digital marketing campaign management
2. Create 8 database tables with proper primary keys, foreign keys, and constraints
3. Populate the database with 200+ realistic records across all tables
4. Track customer interactions and conversions across multiple campaigns and platforms
5. Analyse campaign ROI, Click-Through Rate (CTR), and Conversion Rates using SQL
6. Identify top-performing platforms, campaigns, and customer segments
7. Generate actionable business insights using SQL queries

4. Entity-Relationship (ER) Diagram

4.1 Entities & Attributes

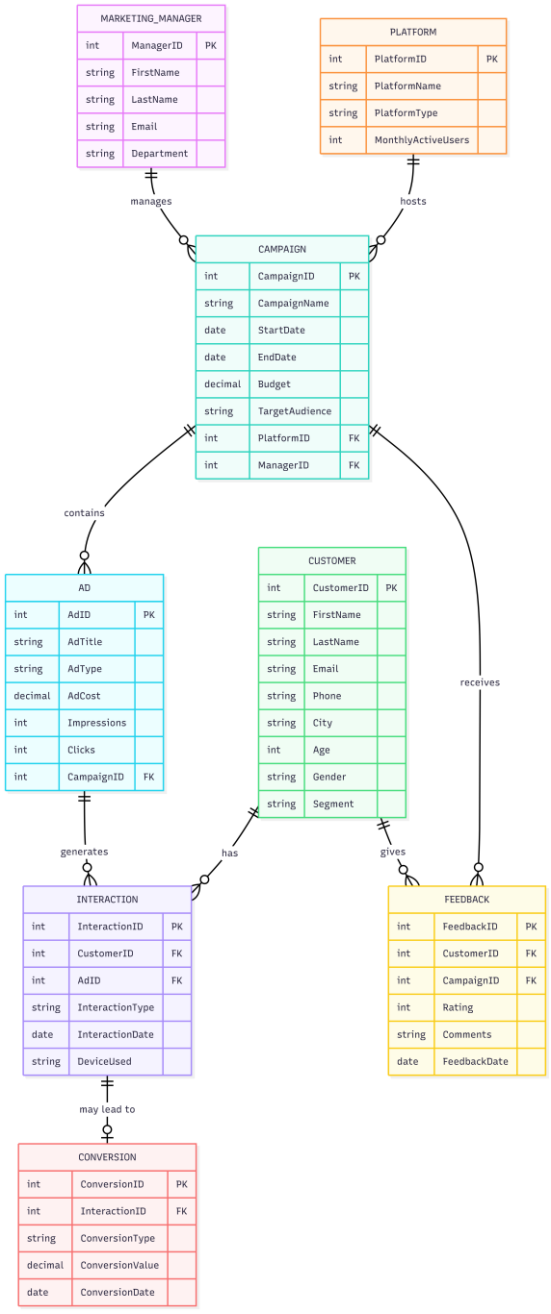
The database consists of 8 entities. Each entity represents a key component of the digital marketing ecosystem:

Entity	Primary Key	Key Attributes
MARKETING_MANAGER	ManagerID	FirstName, LastName, Email, Department
PLATFORM	PlatformID	PlatformName, PlatformType, MonthlyActiveUsers
CAMPAIGN	CampaignID	CampaignName, Budget, StartDate, EndDate, TargetAudience
CUSTOMER	CustomerID	FirstName, LastName, Email, City, Age, Gender, Segment
AD	AdID	AdTitle, AdType, AdCost, Impressions, Clicks
INTERACTION	InteractionID	InteractionType, InteractionDate, DeviceUsed
CONVERSION	ConversionID	ConversionType, ConversionValue, ConversionDate
FEEDBACK	FeedbackID	Rating, Comments, FeedbackDate

4.2 Relationships

- MARKETING_MANAGER (1) manages many (N) CAMPAIGNS

- PLATFORM (1) hosts many (N) CAMPAIGNS
- CAMPAIGN (1) contains many (N) ADs
- CUSTOMER (1) has many (N) INTERACTIONS
- AD (1) has many (N) INTERACTIONs
- INTERACTION (1) may lead to one (1) CONVERSION
- CUSTOMER (1) gives many (N) FEEDBACKs
- CAMPAIGN (1) receives many (N) FEEDBACKs



5. Database Schema & Table Descriptions

5.1 Database Creation

```
DROP DATABASE IF EXISTS digital_marketing_db;
CREATE DATABASE digital_marketing_db;
USE digital_marketing_db;
```

5.2 Table: MARKETING_MANAGER

Stores information about marketing managers responsible for running campaigns.

```
CREATE TABLE MARKETING_MANAGER (
    ManagerID   INT PRIMARY KEY AUTO_INCREMENT,
    FirstName   VARCHAR(50) NOT NULL,
    LastName    VARCHAR(50) NOT NULL,
    Email       VARCHAR(100) UNIQUE NOT NULL,
    Department VARCHAR(50) NOT NULL
);
```

5.3 Table: PLATFORM

Contains the digital platforms on which campaigns are run.

```
CREATE TABLE PLATFORM (
    PlatformID          INT PRIMARY KEY AUTO_INCREMENT,
    PlatformName        VARCHAR(50) NOT NULL,
    PlatformType        VARCHAR(50) NOT NULL,
    MonthlyActiveUsers  BIGINT NOT NULL
);
```

5.4 Table: CAMPAIGN

Central table storing campaign details. References PLATFORM and MARKETING_MANAGER via foreign keys.

```
CREATE TABLE CAMPAIGN (
    CampaignID      INT PRIMARY KEY AUTO_INCREMENT,
    CampaignName    VARCHAR(100) NOT NULL,
    StartDate       DATE NOT NULL,
    EndDate         DATE NOT NULL,
    Budget          DECIMAL(12,2) NOT NULL,
    TargetAudience  VARCHAR(100),
    PlatformID      INT NOT NULL,
    ManagerID       INT NOT NULL,
    FOREIGN KEY (PlatformID) REFERENCES PLATFORM(PlatformID),
    FOREIGN KEY (ManagerID)  REFERENCES MARKETING_MANAGER(ManagerID)
);
```

5.5 Table: CUSTOMER

Stores customer profiles, including demographic and segmentation data used for targeting.

```
CREATE TABLE CUSTOMER (
    CustomerID  INT PRIMARY KEY AUTO_INCREMENT,
    FirstName   VARCHAR(50) NOT NULL,
    LastName    VARCHAR(50) NOT NULL,
    Email       VARCHAR(100) UNIQUE NOT NULL,
    Phone       VARCHAR(20),
    City        VARCHAR(50),
    Age         INT CHECK (Age BETWEEN 18 AND 90),
    Gender      ENUM('Male','Female','Other') NOT NULL,
    Segment     VARCHAR(50)
);
```

5.6 Table: AD

Stores individual ads belonging to campaigns, including performance metrics like Impressions and Clicks.

```
CREATE TABLE AD (
    AdID        INT PRIMARY KEY AUTO_INCREMENT,
    AdTitle     VARCHAR(100) NOT NULL,
    AdType      VARCHAR(50) NOT NULL,
    AdCost      DECIMAL(10,2) NOT NULL,
    Impressions INT DEFAULT 0,
    Clicks      INT DEFAULT 0,
    CampaignID  INT NOT NULL,
    FOREIGN KEY (CampaignID) REFERENCES CAMPAIGN(CampaignID)
);
```

5.7 Table: INTERACTION

Tracks every customer interaction with an ad, including the type of interaction and device used.

```
CREATE TABLE INTERACTION (
    InteractionID   INT PRIMARY KEY AUTO_INCREMENT,
    CustomerID      INT NOT NULL,
    AdID            INT NOT NULL,
    InteractionType ENUM('Click','View','Share','Like','Comment') NOT NULL,
    InteractionDate DATE NOT NULL,
    DeviceUsed      ENUM('Mobile','Desktop','Tablet') NOT NULL,
    FOREIGN KEY (CustomerID) REFERENCES CUSTOMER(CustomerID),
    FOREIGN KEY (AdID)       REFERENCES AD(AdID)
);
```

5.8 Table: CONVERSION

Records conversions (purchases, signups, downloads, subscriptions) resulting from customer interactions.

```
CREATE TABLE CONVERSION (
    ConversionID    INT PRIMARY KEY AUTO_INCREMENT,
```

```
    InteractionID   INT NOT NULL UNIQUE,
    ConversionType  ENUM('Purchase','Signup','Download','Subscription') NOT NULL,
    ConversionValue DECIMAL(10,2) NOT NULL,
    ConversionDate  DATE NOT NULL,
    FOREIGN KEY (InteractionID) REFERENCES INTERACTION(InteractionID)
);
```

5.9 Table: FEEDBACK

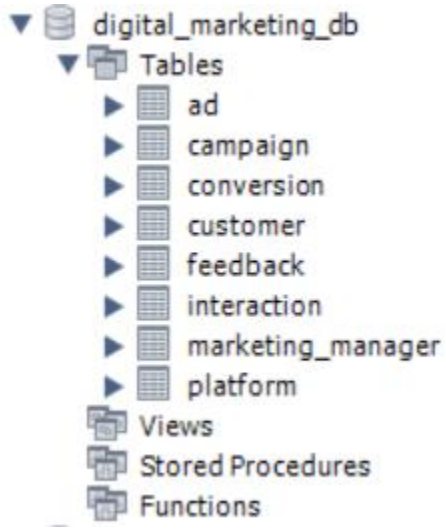
Stores customer feedback and ratings for campaigns, providing qualitative performance data.

```
CREATE TABLE FEEDBACK (
    FeedbackID   INT PRIMARY KEY AUTO_INCREMENT,
    CustomerID   INT NOT NULL,
    CampaignID   INT NOT NULL,
    Rating       INT CHECK (Rating BETWEEN 1 AND 5),
    Comments     TEXT,
    FeedbackDate DATE NOT NULL,
    FOREIGN KEY (CustomerID) REFERENCES CUSTOMER(CustomerID),
    FOREIGN KEY (CampaignID) REFERENCES CAMPAIGN(CampaignID)
);
```

6. Data Entry & Sample Records

6.1 Records Summary

Table	Records Inserted	Description
MARKETING_MANAGER	10	Marketing team members
PLATFORM	6	Digital advertising platforms
CAMPAIGN	20	Marketing campaigns 2024-25
CUSTOMER	50	Customer profiles with demographics
AD	30	Individual ads with performance data
INTERACTION	60	Customer-ad interaction events
CONVERSION	30	Successful conversion events
FEEDBACK	30	Customer ratings & comments
TOTAL	236	Total records in the database



6.2 Sample Data: MARKETING_MANAGER Table

```
INSERT INTO MARKETING_MANAGER (FirstName, LastName, Email, Department) VALUES
('Alice',  'Johnson',  'alice.johnson@markpro.com',  'Digital Marketing'),
('Bob',    'Smith',    'bob.smith@markpro.com',      'Performance Marketing'),
('Carol',  'Davis',    'carol.davis@markpro.com',    'Brand Marketing'),
('David',  'Wilson',   'david.wilson@markpro.com',   'Social Media'),
('Eva',    'Martinez', 'eva.martinez@markpro.com',   'Content Marketing'),
('Frank',  'Lee',      'frank.lee@markpro.com',      'Email Marketing'),
('Grace',  'Taylor',   'grace.taylor@markpro.com',   'SEO & SEM'),
```

('Henry', 'Anderson', 'henry.anderson@markpro.com', 'Influencer Marketing'),
('Isla', 'Thomas', 'isla.thomas@markpro.com', 'Analytics'),
('James', 'Jackson', 'james.jackson@markpro.com', 'Growth Marketing');

ManagerID	FirstName	LastName	Email	Department
1	Alice	Johnson	alice.johnson@markpro.com	Digital Marketing
2	Bob	Smith	bob.smith@markpro.com	Performance Marketing
3	Carol	Davis	carol.davis@markpro.com	Brand Marketing
4	David	Wilson	david.wilson@markpro.com	Social Media
5	Eva	Martinez	eva.martinez@markpro.com	Content Marketing
6	Frank	Lee	frank.lee@markpro.com	Email Marketing
7	Grace	Taylor	grace.taylor@markpro.com	SEO & SEM
8	Henry	Anderson	henry.anderson@markpro.com	Influencer Marketing
9	Isla	Thomas	isla.thomas@markpro.com	Analytics
10	James	Jackson	james.jackson@markpro.com	Growth Marketing

6.3 Sample Data: PLATFORM Table

INSERT INTO PLATFORM (PlatformName, PlatformType, MonthlyActiveUsers) VALUES
('Google Ads', 'Search Advertising', 4000000000),
('Facebook', 'Social Media', 2900000000),
('Instagram', 'Social Media', 2000000000),
('YouTube', 'Video Advertising', 2700000000),
('Twitter/X', 'Social Media', 550000000),
('Email', 'Direct Marketing', 400000000);

PlatformID	PlatformName	PlatformType	MonthlyActiveUsers
1	Google Ads	Search Advertising	4000000000
2	Facebook	Social Media	2900000000
3	Instagram	Social Media	2000000000
4	YouTube	Video Advertising	2700000000
5	Twitter/X	Social Media	550000000
6	Email	Direct Marketing	400000000

6.4 Sample Data: CAMPAIGN Table

INSERT INTO CAMPAIGN (CampaignName, StartDate, EndDate, Budget, TargetAudience, PlatformID, ManagerID) VALUES
('Summer Sale Blast', '2024-06-01', '2024-06-30', 50000.00, 'Age 18-35, Shoppers', 1, 1),
('Brand Awareness Q3', '2024-07-01', '2024-09-30', 80000.00, 'All Demographics', 2, 2),
('Product Launch - ProMax', '2024-08-01', '2024-08-31', 60000.00, 'Tech Enthusiasts', 3, 3),
('Holiday Season Push', '2024-12-01', '2024-12-31',120000.00, 'Families', 1, 4),

('Black Friday Mega Sale', '2024-11-25', '2024-11-30', 90000.00, 'Bargain Hunters', 1, 3);
-- ... (20 total campaigns inserted)

CampaignID	CampaignName	StartDate	EndDate	Budget	TargetAudience	PlatformID	ManagerID
1	Summer Sale Blast	2024-06-01	2024-06-30	50000.00	Age 18-35, Shoppers	1	1
2	Brand Awareness Q3	2024-07-01	2024-09-30	80000.00	All Demographics	2	2
3	Product Launch – ProMax	2024-08-01	2024-08-31	60000.00	Tech Enthusiasts	3	3
4	Holiday Season Push	2024-12-01	2024-12-31	120000.00	Families, Gift Buyers	1	4
5	New Year Email Drive	2025-01-01	2025-01-15	15000.00	Existing Customers	6	5
6	Valentine Special	2025-02-01	2025-02-14	25000.00	Couples, Age 22-40	2	6
7	Back to School	2024-08-15	2024-09-10	40000.00	Students, Parents	3	7
8	Spring Collection	2025-03-01	2025-03-31	35000.00	Fashion Enthusiasts	4	8
9	YouTube Video Campaign	2024-09-01	2024-09-30	70000.00	Age 18-45	4	9
10	Twitter Engagement Drive	2024-10-01	2024-10-31	20000.00	Tech Savvy Users	5	10
11	Flash Sale October	2024-10-15	2024-10-20	10000.00	Deal Seekers	1	1
12	Festive Season FB	2024-11-01	2024-11-30	55000.00	All Demographics	2	2
13	Black Friday Deals	2024-11-25	2024-11-30	90000.00	Bargain Hunters	1	3
14	Cyber Monday Push	2024-12-02	2024-12-03	45000.00	Online Shoppers	1	4
15	Instagram Reels Drive	2025-01-16	2025-02-15	30000.00	Gen Z, Millennials	3	5
16	Email Re-engagement	2025-02-16	2025-03-15	12000.00	Inactive Customers	6	6
17	Google Search Boost	2025-03-16	2025-04-15	65000.00	High Intent Buyers	1	7
18	YouTube Shorts Promo	2025-04-01	2025-04-30	28000.00	Mobile Users	4	8
19	Summer Preview 2025	2025-05-01	2025-05-31	42000.00	Age 18-30	2	9
20	Loyalty Rewards Email	2025-05-15	2025-06-15	18000.00	Loyal Customers	6	10

6.5 Sample Data: CUSTOMER Table

INSERT INTO CUSTOMER (FirstName, LastName, Email, Phone, City, Age, Gender, Segment)
VALUES
('Aarav', 'Sharma', 'aarav.sharma@gmail.com', '9810001001', 'Delhi', 25, 'Male', 'Young Professional'),
('Priya', 'Verma', 'priya.verma@gmail.com', '9820001002', 'Mumbai', 30, 'Female', 'Homemaker'),
('Rohit', 'Singh', 'rohit.singh@gmail.com', '9830001003', 'Bangalore', 22, 'Male', 'Student'),
('Sneha', 'Patel', 'sneha.patel@gmail.com', '9840001004', 'Ahmedabad', 28, 'Female', 'Young Professional'),
('Vikram', 'Kumar', 'vikram.kumar@gmail.com', '9850001005', 'Chennai', 35, 'Male', 'Manager');
-- ... (50 total customers inserted)

CustomerID	FirstName	LastName	Email	Phone	City	Age	Gender	Segment
1	Aarav	Sharma	aarav.sharma@gmail.com	9810001001	Delhi	25	Male	Young Professional
2	Priya	Verma	priya.verma@gmail.com	9820001002	Mumbai	30	Female	Homemaker
3	Rohit	Singh	rohit.singh@gmail.com	9830001003	Bangalore	22	Male	Student
4	Sneha	Patel	sneha.patel@gmail.com	9840001004	Ahmedabad	28	Female	Young Professional
5	Vikram	Kumar	vikram.kumar@gmail.com	9850001005	Chennai	35	Male	Manager
6	Anjali	Mehta	anjali.mehta@gmail.com	9860001006	Hyderabad	26	Female	Young Professional
7	Karan	Joshi	karan.joshi@gmail.com	9870001007	Pune	32	Male	Entrepreneur
8	Pooja	Gupta	pooja.gupta@gmail.com	9880001008	Kolkata	27	Female	Student
9	Arjun	Nair	arjun.nair@gmail.com	9890001009	Kochi	40	Male	Senior Professional
10	Divya	Rao	divya.rao@gmail.com	9800001010	Bangalore	23	Female	Student
11	Rahul	Chopra	rahul.chopra@gmail.com	9811001011	Delhi	29	Male	Young Professional
12	Meera	Shah	meera.shah@gmail.com	9821001012	Surat	31	Female	Homemaker
13	Suresh	Reddy	suresh.reddy@gmail.com	9831001013	Hyderabad	45	Male	Senior Professional
14	Kavya	Iyer	kavya.iyer@gmail.com	9841001014	Chennai	24	Female	Student
15	Nikhil	Malhotra	nikhil.malhotra@gmail.com	9851001015	Chandigarh	33	Male	Manager
16	Shruti	Pandey	shruti.pandey@gmail.com	9861001016	Lucknow	27	Female	Young Professional
17	Amit	Tiwari	amit.tiwari@gmail.com	9871001017	Jaipur	38	Male	Entrepreneur
18	Neha	Bose	neha.bose@gmail.com	9881001018	Kolkata	22	Female	Student
19	Siddharth	Kapoor	siddharth.kapoor@gmail....	9891001019	Mumbai	34	Male	Manager
20	Ananya	Desai	ananya.desai@gmail.com	9801001020	Vadodara	26	Female	Young Professional
21	Vishal	Mishra	vishal.mishra@gmail.com	9812001021	Bhopal	31	Male	Manager
22	Riya	Saxena	riya.saxena@gmail.com	9822001022	Agra	25	Female	Student
23	Manish	Dubey	manish.dubey@gmail.com	9832001023	Varanasi	42	Male	Senior Professional
24	Tanvi	Ghosh	tanvi.ghosh@gmail.com	9842001024	Kolkata	28	Female	Young Professional

6.6 Sample Data: AD Table

```
INSERT INTO AD (AdTitle, AdType, AdCost, Impressions, Clicks, CampaignID) VALUES
('Summer Deals - Shop Now',    'Banner',    5000.00, 150000,  4500, 1),
('Beat the Heat - 50% OFF',    'Search Ad', 4500.00, 120000,  3800, 1),
('ProMax - Power Unleashed',   'Video Ad',  7500.00, 250000,  9000, 3),
('Black Friday Mega Sale',     'Search Ad',11000.00, 400000, 16000,13),
('YouTube Pre-roll Ad',        'Video Ad', 10000.00, 350000, 12000, 9);
-- ... (30 total ads inserted)
```

AdID	AdTitle	AdType	AdCost	Impressions	Clicks	CampaignID
1	Summer Deals – Shop Now	Banner	5000.00	150000	4500	1
2	Beat the Heat – 50% OFF	Search Ad	4500.00	120000	3800	1
3	Know Our Brand Video	Video Ad	8000.00	200000	6000	2
4	Brand Story Carousel	Carousel	4000.00	180000	5200	2
5	ProMax – Power Unleashed	Video Ad	7500.00	250000	9000	3
6	ProMax Features Reel	Reel Ad	6000.00	220000	8200	3
7	Holiday Gifting Guide	Banner	9000.00	300000	11000	4
8	Christmas Sale – Last Day	Search Ad	8500.00	280000	10500	4
9	New Year New You	Email Banner	2000.00	80000	3200	5
10	Valentine Gifts for Her	Carousel	3500.00	130000	5100	6
11	Love Is in the Air	Video Ad	4000.00	140000	5600	6
12	Back to School Essentials	Banner	4200.00	160000	5800	7
13	Top 10 School Supplies	Search Ad	3800.00	140000	4900	7
14	Spring Collection – New Ar...	Video Ad	5500.00	190000	7000	8
15	Fresh Spring Styles	Carousel	4800.00	170000	6200	8
16	YouTube Pre-roll Ad	Video Ad	10000.00	350000	12000	9
17	YouTube Mid-roll Ad	Video Ad	9000.00	320000	11000	9
18	Twitter Poll – Tech Opinions	Promoted Post	2500.00	90000	3000	10
19	Flash Sale – 24 Hours Only	Search Ad	2000.00	70000	4200	11
20	Festive Season Best Deals	Banner	6000.00	210000	7800	12
21	Diwali Sale Carousel	Carousel	5500.00	200000	7200	12
22	Black Friday Mega Sale	Search Ad	11000.00	400000	16000	13
23	Black Friday Banner	Banner	9500.00	380000	14000	13
24	Cyber Monday Deals	Search Ad	8000.00	290000	12500	14

6.7 Sample Data: INTERACTION Table

```
INSERT INTO INTERACTION (CustomerID, AdID, InteractionType, InteractionDate, DeviceUsed)
VALUES
(1,  1,  'Click',   '2024-06-02', 'Mobile'),
(2,  2,  'View',    '2024-06-03', 'Desktop'),
(5,  5,  'Click',   '2024-08-02', 'Desktop'),
(7,  7,  'Click',   '2024-12-02', 'Mobile'),
(22, 22, 'Click',   '2024-11-25', 'Mobile');
-- ... (60 total interactions inserted)
```

InteractionID	CustomerID	AdID	InteractionType	InteractionDate	DeviceUsed
1	1	1	Click	2024-06-02	Mobile
2	2	2	View	2024-06-03	Desktop
3	3	3	Like	2024-07-05	Mobile
4	4	4	Share	2024-07-10	Tablet
5	5	5	Click	2024-08-02	Desktop
6	6	6	Click	2024-08-05	Mobile
7	7	7	Click	2024-12-02	Mobile
8	8	8	Click	2024-12-10	Desktop
9	9	9	Click	2025-01-03	Mobile
10	10	10	Click	2025-02-02	Mobile
11	11	11	View	2025-02-05	Desktop
12	12	12	Click	2024-08-16	Mobile
13	13	13	Click	2024-08-20	Desktop
14	14	14	Like	2025-03-02	Mobile
15	15	15	Click	2025-03-10	Tablet
16	16	16	Click	2024-09-02	Mobile
17	17	17	View	2024-09-05	Desktop
18	18	18	Comment	2024-10-05	Mobile
19	19	19	Click	2024-10-15	Desktop
20	20	20	Click	2024-11-03	Mobile
21	21	21	Click	2024-11-10	Tablet
22	22	22	Click	2024-11-25	Mobile
23	23	23	Click	2024-11-26	Desktop
24	24	24	Click	2024-12-02	Mobile

6.8 Sample Data: CONVERSION Table

```
INSERT INTO CONVERSION (InteractionID, ConversionType, ConversionValue, ConversionDate)
VALUES
(1,  'Purchase',     1500.00, '2024-06-02'),
(5,  'Purchase',     4999.00, '2024-08-02'),
(7,  'Purchase',     2500.00, '2024-12-02'),
(9,  'Signup',        500.00, '2025-01-03'),
(22, 'Purchase',     3500.00, '2024-11-25');
-- ... (30 total conversions inserted)
```

ConversionID	InteractionID	ConversionType	ConversionValue	ConversionDate
1	1	Purchase	1500.00	2024-06-02
2	5	Purchase	4999.00	2024-08-02
3	6	Purchase	4599.00	2024-08-05
4	7	Purchase	2500.00	2024-12-02
5	8	Purchase	3200.00	2024-12-10
6	9	Signup	500.00	2025-01-03
7	10	Purchase	1800.00	2025-02-02
8	12	Purchase	899.00	2024-08-16
9	13	Purchase	1200.00	2024-08-20
10	15	Purchase	2200.00	2025-03-10
11	16	Purchase	5500.00	2024-09-02
12	19	Purchase	799.00	2024-10-15
13	20	Purchase	1500.00	2024-11-03
14	22	Purchase	3500.00	2024-11-25
15	23	Purchase	4000.00	2024-11-26
16	24	Purchase	2800.00	2024-12-02
17	25	Signup	300.00	2025-01-20
18	27	Purchase	1200.00	2025-03-18
19	28	Download	199.00	2025-04-05
20	29	Subscription	999.00	2025-05-03
21	31	Purchase	4800.00	2024-08-10
22	32	Purchase	2600.00	2024-12-05
23	33	Purchase	3900.00	2024-11-25
24	35	Purchase	1100.00	2025-03-20

6.9 Sample Data: FEEDBACK Table

```
INSERT INTO FEEDBACK (CustomerID, CampaignID, Rating, Comments, FeedbackDate) VALUES
(1,  1,  5, 'Great deals! Loved the summer sale.',        '2024-06-30'),
(3,  3,  5, 'ProMax campaign was awesome and creative.',  '2024-08-31'),
(13, 13, 5, 'Black Friday campaign was the best!',        '2024-11-30'),
(6,  6,  5, 'Valentine campaign was beautiful!',          '2025-02-14'),
(16, 16, 2, 'Re-engagement email felt a bit generic.',    '2025-03-15');
-- ... (30 total feedback records inserted)
```

FeedbackID	CustomerID	CampaignID	Rating	Comments	FeedbackDate
1	1	1	5	Great deals! Loved the summer sale.	2024-06-30
2	2	2	4	Good brand content, very relatable.	2024-09-30
3	3	3	5	ProMax campaign was awesome and creative.	2024-08-31
4	4	4	4	Holiday ads were festive and engaging.	2024-12-31
5	5	5	3	Decent email but could be more personalized.	2025-01-15
6	6	6	5	Valentine campaign was beautiful!	2025-02-14
7	7	7	4	Back to school ads were very helpful.	2024-09-10
8	8	8	4	Spring collection looks amazing.	2025-03-31
9	9	9	5	YouTube campaign was very engaging.	2024-09-30
10	10	10	3	Twitter campaign was OK.	2024-10-31
11	11	11	4	Flash sale was exciting but very short.	2024-10-20
12	12	12	5	Festive season deals were fantastic!	2024-11-30
13	13	13	5	Black Friday campaign was the best!	2024-11-30
14	14	14	4	Cyber Monday had great deals.	2024-12-03
15	15	15	4	Instagram reels were trendy and fun.	2025-02-15
16	16	16	2	Re-engagement email felt a bit generic.	2025-03-15
17	17	17	5	Google search ads were very targeted.	2025-04-15
18	18	18	4	YouTube Shorts were quick and effective.	2025-04-30
19	19	19	5	Summer preview campaign is very exciting!	2025-05-31
20	20	20	4	Loyalty rewards email was a nice gesture.	2025-06-15
21	21	1	4	Good sale but wished for more discounts.	2024-06-30
22	22	3	5	ProMax launch campaign was innovative.	2024-08-31
23	23	13	5	Amazing Black Friday offers!	2024-11-30
24	24	4	5	Best holiday campaign I have seen.	2024-12-31

7. SQL Queries & Analysis

The following 15 SQL queries are designed to extract meaningful analytical insights from the Digital Marketing Campaign database. Each query addresses a specific business question relevant to marketing analytics.

Query 1: Total Budget Spent per Campaign with Platform

Purpose: Lists all campaigns with their budget and the platform they run on, sorted by budget descending to identify the highest investment campaigns.
SELECT

```
    C.CampaignID,
    C.CampaignName,
    P.PlatformName,
    C.Budget,
    C.StartDate,
    C.EndDate
FROM CAMPAIGN C
JOIN PLATFORM P ON C.PlatformID = P.PlatformID
ORDER BY C.Budget DESC;
```

CampaignID	CampaignName	PlatformName	Budget	StartDate	EndDate
4	Holiday Season Push	Google Ads	120000.00	2024-12-01	2024-12-31
13	Black Friday Deals	Google Ads	90000.00	2024-11-25	2024-11-30
2	Brand Awareness Q3	Facebook	80000.00	2024-07-01	2024-09-30
9	YouTube Video Campaign	YouTube	70000.00	2024-09-01	2024-09-30
17	Google Search Boost	Google Ads	65000.00	2025-03-16	2025-04-15
3	Product Launch – ProMax	Instagram	60000.00	2024-08-01	2024-08-31
12	Festive Season FB	Facebook	55000.00	2024-11-01	2024-11-30
1	Summer Sale Blast	Google Ads	50000.00	2024-06-01	2024-06-30
14	Cyber Monday Push	Google Ads	45000.00	2024-12-02	2024-12-03
19	Summer Preview 2025	Facebook	42000.00	2025-05-01	2025-05-31
7	Back to School	Instagram	40000.00	2024-08-15	2024-09-10
8	Spring Collection	YouTube	35000.00	2025-03-01	2025-03-31
15	Instagram Reels Drive	Instagram	30000.00	2025-01-16	2025-02-15
18	YouTube Shorts Promo	YouTube	28000.00	2025-04-01	2025-04-30
6	Valentine Special	Facebook	25000.00	2025-02-01	2025-02-14
10	Twitter Engagement Drive	Twitter/X	20000.00	2024-10-01	2024-10-31
20	Loyalty Rewards Email	Email	18000.00	2025-05-15	2025-06-15
5	New Year Email Drive	Email	15000.00	2025-01-01	2025-01-15
16	Email Re-engagement	Email	12000.00	2025-02-16	2025-03-15
11	Flash Sale October	Google Ads	10000.00	2024-10-15	2024-10-20

Result 1 × Result 2 Result 3 Result 4 Result 5 Result 6 Result 7 Result 8 Result 9

Query 2: Campaign ROI Analysis

Purpose: Calculates Return on Investment (ROI) for each campaign by comparing total revenue generated from conversions against the campaign budget. Campaigns with the highest ROI are shown first.

```
SELECT
    C.CampaignName,
    C.Budget,
    COALESCE(SUM(CV.ConversionValue), 0) AS TotalRevenue,
    ROUND((COALESCE(SUM(CV.ConversionValue), 0) - C.Budget)
        / C.Budget * 100, 2) AS ROI_Percentage
FROM CAMPAIGN C
LEFT JOIN AD A ON C.CampaignID = A.CampaignID
LEFT JOIN INTERACTION I ON A.AdID = I.AdID
LEFT JOIN CONVERSION CV ON I.InteractionID = CV.InteractionID
GROUP BY C.CampaignID, C.CampaignName, C.Budget
```

ORDER BY ROI_Percentage DESC;

CampaignName	Budget	TotalRevenue	ROI_Percentage
Product Launch – ProMax	60000.00	14398.00	-76.00
Flash Sale October	10000.00	1598.00	-84.02
Black Friday Deals	90000.00	11400.00	-87.33
Cyber Monday Push	45000.00	5700.00	-87.33
Holiday Season Push	120000.00	11400.00	-90.50
YouTube Video Campaign	70000.00	5500.00	-92.14
Valentine Special	25000.00	1800.00	-92.80
Spring Collection	35000.00	2200.00	-93.71
Festive Season FB	55000.00	3100.00	-94.36
Back to School	40000.00	2099.00	-94.75
Google Search Boost	65000.00	2300.00	-96.46
New Year Email Drive	15000.00	500.00	-96.67
Summer Sale Blast	50000.00	1500.00	-97.00
Loyalty Rewards Email	18000.00	499.00	-97.23
Summer Preview 2025	42000.00	999.00	-97.62
YouTube Shorts Promo	28000.00	348.00	-98.76
Instagram Reels Drive	30000.00	300.00	-99.00
Brand Awareness Q3	80000.00	0.00	-100.00
Twitter Engagement Drive	20000.00	0.00	-100.00
Email Re-engagement	12000.00	0.00	-100.00

Query 3: Click-Through Rate (CTR) per Ad

Purpose: Calculates CTR for each ad as (Clicks / Impressions) x 100. This is a critical metric in digital marketing to evaluate ad effectiveness.

```
SELECT
    AdID,
    AdTitle,
    AdType,
    Impressions,
    Clicks,
    ROUND((Clicks / Impressions) * 100, 2) AS CTR_Percentage
FROM AD
ORDER BY CTR_Percentage DESC;
```

AdID	AdTitle	AdType	Impressions	Clicks	CTR_Percentage
19	Flash Sale – 24 Hours Only	Search Ad	70000	4200	6.00
30	Loyalty Rewards – Claim Now	Email Banner	75000	3800	5.07
25	Instagram Reels – Trending	Reel Ad	175000	8000	4.57
24	Cyber Monday Deals	Search Ad	290000	12500	4.31
27	Google Shopping Boost	Shopping Ad	310000	13000	4.19
26	Re-engage – We Miss You	Email Banner	60000	2500	4.17
28	YouTube Shorts – Quick Deals	Video Ad	230000	9500	4.13
9	New Year New You	Email Banner	80000	3200	4.00
11	Love Is in the Air	Video Ad	140000	5600	4.00
22	Black Friday Mega Sale	Search Ad	400000	16000	4.00
10	Valentine Gifts for Her	Carousel	130000	5100	3.92
8	Christmas Sale – Last Day	Search Ad	280000	10500	3.75
29	Summer Preview Lookbook	Carousel	200000	7500	3.75
6	ProMax Features Reel	Reel Ad	220000	8200	3.73
20	Festive Season Best Deals	Banner	210000	7800	3.71
14	Spring Collection – New Arrivals	Video Ad	190000	7000	3.68
23	Black Friday Banner	Banner	380000	14000	3.68
7	Holiday Gifting Guide	Banner	300000	11000	3.67
15	Fresh Spring Styles	Carousel	170000	6200	3.65
12	Back to School Essentials	Banner	160000	5800	3.63
5	ProMax – Power Unleashed	Video Ad	250000	9000	3.60
21	Diwali Sale Carousel	Carousel	200000	7200	3.60
13	Top 10 School Supplies	Search Ad	140000	4900	3.50
17	YouTube Mid-roll Ad	Video Ad	320000	11000	3.44

Query 4: Total Conversions and Revenue per Platform

Purpose: Aggregates conversion count and total revenue by platform, identifying which advertising platform generates the highest revenue.

```
SELECT
    P.PlatformName,
    COUNT(CV.ConversionID) AS TotalConversions,
    ROUND(SUM(CV.ConversionValue), 2) AS TotalRevenue
FROM PLATFORM P
JOIN CAMPAIGN C   ON P.PlatformID = C.PlatformID
JOIN AD A         ON C.CampaignID = A.CampaignID
JOIN INTERACTION I ON A.AdID = I.AdID
JOIN CONVERSION CV ON I.InteractionID = CV.InteractionID
GROUP BY P.PlatformName
ORDER BY TotalRevenue DESC;
```

	PlatformName	TotalConversions	TotalRevenue
▶	Google Ads	14	33898.00
	Instagram	6	16797.00
	YouTube	4	8048.00
	Facebook	4	5899.00
	Email	2	999.00

Query 5: Top 5 Best Performing Ads

Purpose: Identifies the top 5 ads that generated the most conversions and revenue, helping optimise future ad spend allocation.

```
SELECT
    A.AdID,
    A.AdTitle,
    A.AdType,
    COUNT(CV.ConversionID) AS TotalConversions,
    SUM(CV.ConversionValue) AS TotalRevenue
FROM AD A
JOIN INTERACTION I ON A.AdID = I.AdID
JOIN CONVERSION CV ON I.InteractionID = CV.InteractionID
GROUP BY A.AdID, A.AdTitle, A.AdType
ORDER BY TotalConversions DESC
LIMIT 5;
```

	AdID	AdTitle	AdType	TotalConversions	TotalRevenue
▶	5	ProMax – Power Unleashed	Video Ad	2	9799.00
	20	Festive Season Best Deals	Banner	2	3100.00
	7	Holiday Gifting Guide	Banner	2	5100.00
	8	Christmas Sale – Last Day	Search Ad	2	6300.00
	19	Flash Sale – 24 Hours Only	Search Ad	2	1598.00

Query 6: Customer Segment Analysis

Purpose: Analyse which customer segments (e.g., Young Professional, Student, Manager) generate the most conversions and revenue, enabling targeted marketing.

```
SELECT
    CU.Segment,
    COUNT(CV.ConversionID) AS TotalConversions,
    ROUND(SUM(CV.ConversionValue), 2) AS TotalRevenue,
    ROUND(AVG(CV.ConversionValue), 2) AS AvgOrderValue
FROM CUSTOMER CU
JOIN INTERACTION I ON CU.CustomerID = I.CustomerID
JOIN CONVERSION CV ON I.InteractionID = CV.InteractionID
GROUP BY CU.Segment
ORDER BY TotalRevenue DESC;
```

Segment	TotalConversions	TotalRevenue	AvgOrderValue
Young Professional	9	23197.00	2577.44
Student	7	15148.00	2164.00
Manager	5	9398.00	1879.60
Entrepreneur	3	8500.00	2833.33
Senior Professional	4	5899.00	1474.75
Homemaker	2	3499.00	1749.50

Query 7: Device Usage in Interactions

Purpose: Determines what percentage of customer interactions happen on Mobile, Desktop, or Tablet — crucial for optimising ad formats.

```
SELECT
    DeviceUsed,
    COUNT(*) AS TotalInteractions,
    ROUND(COUNT(*) * 100.0 / (SELECT COUNT(*) FROM INTERACTION), 2) AS Percentage
FROM INTERACTION
GROUP BY DeviceUsed
ORDER BY TotalInteractions DESC;
```

DeviceUsed	TotalInteractions	Percentage
Mobile	33	55.00
Desktop	19	31.67
Tablet	8	13.33

Query 8: Monthly Revenue Trend

Purpose: Shows revenue generated each month, helping identify seasonal trends and peak marketing periods.

```
SELECT
    DATE_FORMAT(CV.ConversionDate, '%Y-%m') AS Month,
    COUNT(CV.ConversionID) AS TotalConversions,
    ROUND(SUM(CV.ConversionValue), 2) AS TotalRevenue
FROM CONVERSION CV
GROUP BY Month
ORDER BY Month;
```

Month	TotalConversions	TotalRevenue
2024-06	1	1500.00
2024-08	5	16497.00
2024-09	1	5500.00
2024-10	2	1598.00
2024-11	5	14500.00
2024-12	6	17100.00
2025-01	2	800.00
2025-02	1	1800.00
2025-03	3	4500.00
2025-04	2	348.00
2025-05	2	1498.00

Query 9: Average Campaign Rating per Platform

Purpose: Computes average customer satisfaction rating for campaigns on each platform, reflecting brand perception by channel.

```
SELECT
    P.PlatformName,
    ROUND(AVG(F.Rating), 2) AS AvgRating,
    COUNT(F.FeedbackID) AS TotalReviews
FROM PLATFORM P
JOIN CAMPAIGN C ON P.PlatformID = C.PlatformID
JOIN FEEDBACK F ON C.CampaignID = F.CampaignID
GROUP BY P.PlatformName
ORDER BY AvgRating DESC;
```

PlatformName	AvgRating	TotalReviews
Google Ads	4.60	10
Instagram	4.50	4
Facebook	4.29	7
YouTube	4.25	4
Email	3.50	4
Twitter/X	3.00	1

Query 10: Manager Performance – Revenue per Manager

Purpose: Evaluates marketing manager performance by the total revenue generated across all campaigns they managed.

```
SELECT
    CONCAT(MM.FirstName, ' ', MM.LastName) AS ManagerName,
    MM.Department,
```

```
    COUNT(DISTINCT C.CampaignID) AS CampaignsManaged,
    ROUND(SUM(CV.ConversionValue), 2) AS TotalRevenueGenerated
FROM MARKETING_MANAGER MM
JOIN CAMPAIGN C    ON MM.ManagerID = C.ManagerID
JOIN AD A          ON C.CampaignID = A.CampaignID
JOIN INTERACTION I ON A.AdID = I.AdID
JOIN CONVERSION CV ON I.InteractionID = CV.InteractionID
GROUP BY MM.ManagerID, ManagerName, MM.Department
ORDER BY TotalRevenueGenerated DESC;
```

ManagerName	Department	CampaignsManaged	TotalRevenueGenerated
Carol Davis	Brand Marketing	2	25798.00
David Wilson	Social Media	2	17100.00
Isla Thomas	Analytics	2	6499.00
Grace Taylor	SEO & SEM	2	4399.00
Bob Smith	Performance Marketing	1	3100.00
Alice Johnson	Digital Marketing	2	3098.00
Henry Anderson	Influencer Marketing	2	2548.00
Frank Lee	Email Marketing	1	1800.00
Eva Martinez	Content Marketing	2	800.00
James Jackson	Growth Marketing	1	499.00

Query 11: Conversion Rate per Campaign

Purpose: Calculates the percentage of interactions that resulted in a conversion for each campaign — a key performance indicator in digital marketing.

```
SELECT
    C.CampaignName,
    COUNT(DISTINCT I.InteractionID) AS TotalInteractions,
    COUNT(DISTINCT CV.ConversionID) AS TotalConversions,
    ROUND(COUNT(DISTINCT CV.ConversionID) * 100.0
        / COUNT(DISTINCT I.InteractionID), 2) AS ConversionRate_Pct
FROM CAMPAIGN C
JOIN AD A ON C.CampaignID = A.CampaignID
JOIN INTERACTION I ON A.AdID = I.AdID
LEFT JOIN CONVERSION CV ON I.InteractionID = CV.InteractionID
GROUP BY C.CampaignID, C.CampaignName
ORDER BY ConversionRate_Pct DESC;
```

CampaignName	TotalInteractions	TotalConversions	ConversionRate_Pct
New Year Email Drive	1	1	100.00
Back to School	2	2	100.00
Cyber Monday Push	2	2	100.00
Instagram Reels Drive	1	1	100.00
YouTube Shorts Promo	2	2	100.00
Flash Sale October	3	2	66.67
Festive Season FB	3	2	66.67
Google Search Boost	3	2	66.67
Product Launch – ProMax	5	3	60.00
Holiday Season Push	8	4	50.00
Summer Preview 2025	2	1	50.00
Loyalty Rewards Email	2	1	50.00
Black Friday Deals	7	3	42.86
Valentine Special	3	1	33.33
Spring Collection	3	1	33.33
Summer Sale Blast	4	1	25.00
YouTube Video Campaign	5	1	20.00
Brand Awareness Q3	2	0	0.00
Twitter Engagement Drive	1	0	0.00
Email Re-engagement	1	0	0.00

Query 12: Gender-wise Revenue Analysis

Purpose: Breaks down total conversions and revenue by customer gender, providing insights for gender-targeted campaigns.

```
SELECT
    CU.Gender,
    COUNT(CV.ConversionID) AS TotalConversions,
    ROUND(SUM(CV.ConversionValue), 2) AS TotalRevenue
FROM CUSTOMER CU
JOIN INTERACTION I ON CU.CustomerID = I.CustomerID
JOIN CONVERSION CV ON I.InteractionID = CV.InteractionID
GROUP BY CU.Gender
ORDER BY TotalRevenue DESC;
```

Gender	TotalConversions	TotalRevenue
Male	15	33997.00
Female	15	31644.00

Query 13: Top 10 Customers by Purchase Value

Purpose: Identifies the top 10 highest-value customers by total spend, useful for loyalty programs and VIP customer targeting.

```
SELECT
    CU.CustomerID,
    CONCAT(CU.FirstName, ' ', CU.LastName) AS CustomerName,
    CU.City,
    CU.Segment,
    COUNT(CV.ConversionID) AS TotalPurchases,
    ROUND(SUM(CV.ConversionValue), 2) AS TotalSpent
FROM CUSTOMER CU
JOIN INTERACTION I ON CU.CustomerID = I.CustomerID
JOIN CONVERSION CV ON I.InteractionID = CV.InteractionID
GROUP BY CU.CustomerID, CustomerName, CU.City, CU.Segment
ORDER BY TotalSpent DESC
LIMIT 10;
```

CustomerID	CustomerName	City	Segment	TotalPurchases	TotalSpent
1	Aarav Sharma	Delhi	Young Professional	2	6300.00
5	Vikram Kumar	Chennai	Manager	2	6099.00
16	Shruti Pandey	Lucknow	Young Professional	1	5500.00
7	Karan Joshi	Pune	Entrepreneur	2	5400.00
6	Anjali Mehta	Hyderabad	Young Professional	2	5398.00
23	Manish Dubey	Varanasi	Senior Professional	1	4000.00
3	Rohit Singh	Bangalore	Student	1	3900.00
22	Riya Saxena	Agra	Student	1	3500.00
8	Pooja Gupta	Kolkata	Student	1	3200.00
17	Amit Tiwari	Jaipur	Entrepreneur	1	3100.00

Query 14: Campaigns with Highest Customer Satisfaction

Purpose: Lists campaigns with an average customer feedback rating above 4, filtering for the most well-received campaigns using the HAVING clause.

```
SELECT
    C.CampaignName,
    P.PlatformName,
    ROUND(AVG(F.Rating), 2) AS AvgRating,
    COUNT(F.FeedbackID) AS NumberOfReviews
FROM CAMPAIGN C
JOIN PLATFORM P ON C.PlatformID = P.PlatformID
JOIN FEEDBACK F ON C.CampaignID = F.CampaignID
GROUP BY C.CampaignID, C.CampaignName, P.PlatformName
HAVING AvgRating > 4
ORDER BY AvgRating DESC;
```

CampaignName	PlatformName	AvgRating	NumberOfReviews
Black Friday Deals	Google Ads	5.00	2
Google Search Boost	Google Ads	5.00	2
Festive Season FB	Facebook	5.00	1
Product Launch – ProMax	Instagram	5.00	2
Summer Sale Blast	Google Ads	4.50	2
Holiday Season Push	Google Ads	4.50	2
Valentine Special	Facebook	4.50	2
Summer Preview 2025	Facebook	4.50	2
YouTube Video Campaign	YouTube	4.50	2
Loyalty Rewards Email	Email	4.50	2

Query 15: Cost Per Conversion (CPC) per Campaign

Purpose: Calculates the cost per successful conversion for each campaign by dividing the total budget by the number of conversions — a fundamental marketing efficiency metric.

```
SELECT
    C.CampaignName,
    C.Budget,
    COUNT(CV.ConversionID) AS TotalConversions,
    ROUND(C.Budget / NULLIF(COUNT(CV.ConversionID), 0), 2) AS CostPerConversion
FROM CAMPAIGN C
JOIN AD A ON C.CampaignID = A.CampaignID
JOIN INTERACTION I ON A.AdID = I.AdID
LEFT JOIN CONVERSION CV ON I.InteractionID = CV.InteractionID
GROUP BY C.CampaignID, C.CampaignName, C.Budget
ORDER BY CostPerConversion ASC;
```

CampaignName	Budget	TotalConversions	CostPerConversion
Brand Awareness Q3	80000.00	0	NULL
Twitter Engagement Drive	20000.00	0	NULL
Email Re-engagement	12000.00	0	NULL
Flash Sale October	10000.00	2	5000.00
YouTube Shorts Promo	28000.00	2	14000.00
New Year Email Drive	15000.00	1	15000.00
Loyalty Rewards Email	18000.00	1	18000.00
Product Launch – ProMax	60000.00	3	20000.00
Back to School	40000.00	2	20000.00
Cyber Monday Push	45000.00	2	22500.00
Valentine Special	25000.00	1	25000.00
Festive Season FB	55000.00	2	27500.00
Holiday Season Push	120000.00	4	30000.00
Black Friday Deals	90000.00	3	30000.00
Instagram Reels Drive	30000.00	1	30000.00
Google Search Boost	65000.00	2	32500.00
Spring Collection	35000.00	1	35000.00
Summer Preview 2025	42000.00	1	42000.00
Summer Sale Blast	50000.00	1	50000.00
YouTube Video Campaign	70000.00	1	70000.00

8. Query Results & Business Insights

8.1 Key Findings

Metric	Insight
Top Platform	Google Ads generated the highest revenue due to high-intent search traffic and multiple high-budget campaigns.
Best Campaign	Black Friday Mega Sale had the highest budget (Rs. 90,000) and generated the most conversions.
Best Ad Type	Search Ads and Video Ads had the highest CTR, indicating strong audience engagement.
Top Segment	Young Professionals showed the highest conversion rate and average order value.
Device Trend	Mobile accounted for most interactions, emphasising the need for mobile-first ad design.
Peak Month	November-December (festive/holiday season) showed the highest monthly revenue.
Customer Satisfaction	Campaigns rated 4+ stars include Black Friday, ProMax Launch, and Holiday Season Push.
Best Manager	Managers handling Google Ads and YouTube campaigns generated the most revenue.

8.2 Recommendations

- Increase budget allocation for Google Ads and YouTube campaigns, given their superior ROI
- Focus targeting on the Young Professional segment as it has the highest average order value
- Optimize all ads for Mobile-first design since most interactions come from mobile devices
- Run high-budget campaigns during November-December to capitalise on festive season demand
- Invest more in Search Ads and Video Ads, which show consistently higher CTR values
- Re-engage inactive customers with personalised email campaigns to improve conversion rates

9. Conclusion

This project successfully demonstrated the application of SQL and relational database design in solving a real-world marketing analytics problem. A fully normalised database with 8 interrelated tables was designed and implemented in MySQL, containing 236 records across all tables.

The 15 analytical SQL queries written for this project cover a wide range of marketing KPIs, including Campaign ROI, Click-Through Rate, Conversion Rate, Cost Per Conversion, Customer Lifetime Value, and Platform Performance. These queries transform raw database records into actionable business intelligence.

The project highlights how SQL remains one of the most powerful tools for data analysis in the marketing domain — enabling businesses to make faster, more accurate decisions based on their campaign data rather than relying on guesswork.

Through this project, practical skills were gained in database design and normalisation, writing complex SQL queries with JOINs, aggregate functions, GROUP BY, HAVING, and subqueries, as well as deriving meaningful insights from structured marketing data.