### **Entity Relationship Diagram Representation for Marketflash Project**

**Step 1:Business Requirements**

**1.Entities:**

* + Campaigns (ID, StartDate, EndDate, Channel, Client, ContactInfo, Audience, Likes, Clicks, Conversions, Expense, Executive )
  + Clients (CompanyName, Address, Email, Phone#, ContactPerson)
  + Employees (EmpID, FName, LName, Address, Email, Phone#, Supervisor)
  + Channels (ChannelID, Name)

1. **Relationships:**
   * Clients 1 --- N Campaigns
   * Channel 1 --- N Campaigns
   * Employees 1 --- N Campaigns
   * Employees 1 --- N Employees

**Objective & Goal: Analyse the Business model and design functional ERD**

**Step 2: Relational Model from ERD**

Campaigns (**\*CampaignID**, StartDate, EndDate, **ChannelID(fk)**, **ClientID(fk)**, Audience, Likes, Clicks, Conversions, Expense, **ExecutiveID(fk)**)

Clients (\****ClientID****,CompanyName, Address, Email, Phone, ContactPerson*)

Employees (**\*EmpID**, FName, LName, Address, Email, Phone,Department(fk),**SupervisorID(fk)NULL**)

Channels (**\*ChannelID**, Name)

**Step 3: Normalisation of Relational model to 3NF**

1. First Normal Form (1NF): Each table has a primary key and all fields contain atomic values.
2. Second Normal Form (2NF): The model is in 1NF and all non-key attributes are fully functionally dependent on the primary key.
3. Third Normal Form (3NF): The model is in 2NF and all non-key attributes are non-transitively dependent on the primary key and reduce redundancy if any and improve data integrity.

Campaigns (**\*CampaignID**, StartDate, EndDate, views,Likes,clicks,Conversions,Expense,Sales,**ChannelID(fk), ClientID(fk),LocationID(fk),CampaignTypeID(fk),ExecutiveID(fk),AudienceID(fk)**)

Clients (\****ClientID****,CompanyName, Address, Email, Phone, ContactPerson*)

Employees (**\*EmpID**, FName, LName, Address, Email, Phone, **SupervisorID(fk)NULL, DepartmentID(fk)**)

Channels (**\*ChannelID**, Name,Description)

Locations(**\*LocationID**, Name, Description)

Departments(**\*DepartmentID**,Name,Description)

Audience(\***AudienceID**,Segment,description)

CampaignType(\***CampaignTypeID**, Type, Description)

**Step 4: Functional ERD from Normalised Relational Model**

