-- Create Tables with Primary and Foreign Keys

CREATE DATABASE MYPROJECT;

-- Create Profiles Table

CREATE TABLE Profiles (

profile\_id INT PRIMARY KEY IDENTITY(1,1),

first\_name VARCHAR(255),

last\_name VARCHAR(255),

email VARCHAR(255) NOT NULL,

phone VARCHAR(255) NOT NULL,

city VARCHAR(255),

pan\_card VARCHAR(255),

created\_at DATE NOT NULL,

gender VARCHAR(255) NOT NULL,

referral\_code VARCHAR(255),

marital\_status VARCHAR(255)

);

-- Create Houses Table

CREATE TABLE Houses (

house\_id INT PRIMARY KEY IDENTITY(1,1),

house\_type VARCHAR(255),

bhk\_details VARCHAR(255),

bed\_count INT NOT NULL,

furnishing\_type VARCHAR(255),

beds\_vacant INT NOT NULL

);

-- Create Addresses Table

CREATE TABLE Addresses (

ad\_id INT PRIMARY KEY IDENTITY(1,1),

name VARCHAR(255),

description TEXT,

pincode INT,

city VARCHAR(255),

house\_id INT NOT NULL,

FOREIGN KEY (house\_id) REFERENCES Houses(house\_id)

);

-- Create Employment Details Table

CREATE TABLE Employment\_details (

id INT PRIMARY KEY IDENTITY(1,1),

profile\_id INT NOT NULL,

latest\_employer VARCHAR(255),

official\_mail\_id VARCHAR(255),

yrs\_experience INT,

occupational\_category VARCHAR(255),

FOREIGN KEY (profile\_id) REFERENCES Profiles(profile\_id)

);

-- Create Referrals Table

CREATE TABLE Referrals (

ref\_id INT PRIMARY KEY IDENTITY(1,1),

referrer\_id INT NOT NULL,

referrer\_bonus\_amount FLOAT,

referral\_valid TINYINT DEFAULT 0,

valid\_from DATE,

valid\_till DATE,

FOREIGN KEY (referrer\_id) REFERENCES Profiles(profile\_id)

);

-- Create Tenancy Histories Table

CREATE TABLE Tenancy\_histories (

id INT PRIMARY KEY IDENTITY(1,1),

profile\_id INT NOT NULL,

house\_id INT NOT NULL,

move\_in\_date DATE NOT NULL,

move\_out\_date DATE,

rent INT NOT NULL,

bed\_type VARCHAR(255),

move\_out\_reason VARCHAR(255),

FOREIGN KEY (profile\_id) REFERENCES Profiles(profile\_id),

FOREIGN KEY (house\_id) REFERENCES Houses(house\_id)

);

-- Insert into Profiles table

SET IDENTITY\_INSERT Profiles ON; -- Enable manual ID insertion

INSERT INTO Profiles (profile\_id, first\_name, last\_name, email, phone, city, pan\_card, created\_at, gender, referral\_code, marital\_status)

VALUES

(1, 'anusha', 'pariti', 'anusha.pariti@gmail.com', '8105987404', 'Bangalore', 'not available', '2015-04-16', 'F', '7L5FZW', 'Y'),

(2, 'Ashish', 'Singh', 'ashish.singh@gmail.com', '9876890463', 'Bangalore', 'not available', '2015-05-23', 'M', 'KF34MF', 'Y'),

(3, 'Bhaskar', 'maheshwari', 'bhaskar.mah@gmail.com', '9801834992', 'Bangalore', 'not available', '2015-05-01', 'M', '5TYSHGF', 'N'),

(4, 'Garima', 'yadav', 'garima0191@gmail.com', '81059237004', 'Bangalore', 'not available', '2015-10-20', 'F', '5G5FQW', 'N'),

(5, 'Tanvi', 'mann', 'tanvi.mann1907@gmail.com', '9178352769', 'Bangalore', 'not available', '2015-02-16', 'F', 'JSH48B', 'N'),

(6, 'Harish', 'sahai', 'harish294all@gmail.com', '9876548763', 'Bangalore', 'not available', '2015-11-11', 'M', 'MKGI2W', 'Y'),

(7, 'Kamal', 'gera', 'kamal0094@gmail.com', '8105987404', 'Bangalore', 'not available', '2015-10-31', 'M', 'MK34ER', 'N'),

(8, 'Tushar', 'kapoor', 'tushar.kapoor21@gmail.com', '8926537154', 'Pune', 'not available', '2015-12-12', 'M', 'KLF12E', 'N'),

(9, 'Shivshankar', 'das', 'sankar.shiva730@gmail.com', '9801834992', 'Pune', 'not available', '2015-10-06', 'M', '3RE5TY', 'Y'),

(10, 'Aditi', 'jain', 'aditi.jain@sproxil.com', '9873123456', 'Pune', 'not available', '2015-06-11', 'F', '5TPL4E', 'N'),

(11, 'Deepa', 'sudhakar', 'sudhakar.deepa@gmail.com', '7896785432', 'Pune', 'not available', '2015-09-15', 'F', '4RTYUIO', 'Y'),

(12, 'Umang', 'parejiya', 'uparejiya@gmail.com', '7896543674', 'Pune', 'not available', '2015-07-18', 'M', '6TY4WE', 'N'),

(13, 'Mitali', 'gupta', 'mitali.gupta80@gmail.com', '8796751238', 'Pune', 'not available', '2015-03-24', 'F', '5RTYU3', 'Y'),

(14, 'Manisha', 'Yadav', 'maniyadav88@gmail.com', '9867845182', 'Delhi', 'not available', '2015-01-27', 'F', 'LKGHY6', 'N'),

(15, 'Shivani', 'godha', 'shivani\_go@nid.edu', '9878673428', 'Delhi', 'not available', '2015-02-19', 'F', '8NM4R', 'Y'),

(16, 'Rajan', 'pandey', 'raajanpandey@gmail.com', '8987647811', 'Delhi', 'not available', '2015-09-04', 'M', '5TYUIO', 'N'),

(17, 'Roosena', 'manuel', 'roseenasimimanuel@gmail.com', '9875623345', 'Delhi', 'not available', '2015-04-13', 'F', '6TYHU', 'Y'),

(18, 'Prabhjot', 'gill', 'prabhjotgill09@gmail.com', '9800786688', 'Delhi', 'not available', '2015-12-30', 'M', 'GHJK34', 'N'),

(19, 'Ankita', 'sharma', 'ankita.anku96@gmail.com', '9988789656', 'Delhi', 'not available', '2015-08-17', 'F', 'TH67TY', 'Y'),

(20, 'Karan', 'Singh', 'karan.singh@gmail.com', '8976665768', 'Delhi', 'not available', '2015-09-15', 'M', 'LRF34F', 'N');

SET IDENTITY\_INSERT Profiles OFF; -- Disable after inserting

-- Insert into Houses table

SET IDENTITY\_INSERT Houses ON;

INSERT INTO Houses (house\_id, house\_type, bhk\_details, bed\_count, furnishing\_type, beds\_vacant)

VALUES

(1, 'Apartment', '3 BHK', 5, 'unfurnished', 2),

(2, 'Apartment', '3 BHK', 3, 'unfurnished', 1),

(3, 'Apartment', '3 BHK', 6, 'fully-furnished', 4),

(4, 'Apartment', '2 BHK', 2, 'fully-furnished', 0),

(5, 'Independent', '4 BHK', 4, 'fully-furnished', 2),

(6, 'Apartment', '3 BHK', 3, 'semifurnished', 1),

(7, 'Apartment', '3 BHK', 3, 'semifurnished', 0),

(8, 'Apartment', '2 BHK', 4, 'fully-furnished', 1),

(9, 'Independent', '1 BHK', 2, 'unfurnished', 0),

(10, 'Independent', '3 BHK', 3, 'fully-furnished', 1),

(11, 'Apartment', '1 BHK', 1, 'unfurnished', 0),

(12, 'Independent', '1 BHK', 2, 'unfurnished', 1),

(13, 'Independent', '2 BHK', 4, 'unfurnished', 2),

(14, 'Apartment', '3 BHK', 3, 'fully-furnished', 0),

(15, 'Independent', '1 BHK', 2, 'unfurnished', 1),

(16, 'Apartment', '3 BHK', 3, 'fully-furnished', 0),

(17, 'Independent', '3 BHK', 3, 'fully-furnished', 1),

(18, 'Independent', '2 BHK', 2, 'fully-furnished', 1),

(19, 'Independent', '3 BHK', 3, 'fully-furnished', 1),

(20, 'Independent', '1 BHK', 2, 'unfurnished', 2);

SET IDENTITY\_INSERT Houses OFF;

-- Insert into Addresses table

SET IDENTITY\_INSERT Addresses ON;

INSERT INTO Addresses (ad\_id, name, description, pincode, city, house\_id) VALUES

(2, 'Zaanz appartment', 'Sterling BrookSide, Opp. Kundalahalli Colony, ITPL Main Rd', 560037, 'bangalore', 1),

(3, 'stag saptgiri', 'No.44,Ground floor,20th cross,Sector 2 HSR Layout,Bangalore.', 560102, 'bangalore', 2),

(4, 'sri sai enclave', 'No.44,First floor,20th cross,Sector 2 HSR Layout.', 560102, 'bangalore', 3),

(5, 'orchids building', 'D-208, Balaji Pristine Whitefield Main Road', 560066, 'bangalore', 4),

(6, 'Fella homes', '#11,Annaiya Reddy Rd, Narayana Reddy Layout,Phase 2, Electronic City', 560100, 'bangalore', 5),

(7, 'Juniper appartments', '# 595/1, 1st Floor,1st A main, Domlur Layout', 560038, 'bangalore', 6),

(8, 'UDB Building', 'Flat No: T1 Deccan Field Appartment Kunadanhalli main road', 560037, 'bangalore', 7),

(9, 'Apoorva society', 'Flat No-202, Apoorva Apartment No-296 Vyalikaval House Building Cooperative Society Ltd Nagavara', 561202, 'Delhi', 8),

(10, 'Stag saptgiri', 'Flat No-202, stag saptgiri No-26 phase2 Cooperative Society', 560045, 'Delhi', 9),

(11, 'VaK Residency', '302,#473 VAK Residency, B-Block, AECS Layout Kundalahalli,', 456738, 'Delhi', 10),

(12, 'Sunshine hills', 'Flat no 3, water ville apartment R.galli', 100234, 'Delhi', 11),

(13, 'Sri Sai appartment', '2nd House, No-80/289, Sri Hari Darshan Nilaya, Ground Floor, Bellandur', 560107, 'Delhi', 12),

(14, 'Barvika Residency', 'B105, 1st floor, B block, Barvika Residency', 5610023, 'Delhi', 13),

(15, 'Nestaway building', '#157, 4th Cross, 1st Main Road, Lower Palace Orchard', 546783, 'Delhi', 14),

(16, 'Windsor Plaza', '#301, Windsor Plaza,ITPL', 560025, 'Pune', 15),

(17, 'Indira society', 'No. 502, Indira Meadows, Arunodaya Colony', 302017, 'Pune', 16),

(18, 'Sri Krishna Society', 'Flat No-211 Sri Krishna sai enclave, Hoodi village, beside Vivekananda Ashram, Mahadevapura post', 560048, 'Pune', 17),

(19, 'uniworld', 'D1-1201, Uniworld Garden 2', 543678, 'Pune', 18),

(20, 'Vinayaka residency', '49, House 1 lathangi 2nd main vinayaka housing layout, RMV 2nd stage bhoopasandra', 560094, 'Pune', 19),

(21, 'Sun city appartments', 'Majeera Diamond Towers,malad-west', 5600263, 'Pune', 20); SET IDENTITY\_INSERT Addresses OFF;

-- Insert into Employment\_details table

SET IDENTITY\_INSERT Employment\_details ON;

INSERT INTO Employment\_details (id, profile\_id, latest\_employer, official\_mail\_id, yrs\_experience, occupational\_category) VALUES

(1, 1, 'Sabre', 'mehdi.hasan@sabre.com', 1, 'Working'),

(2, 2, 'hindustan unilever', 'rags.ramgas@gmail.com', 2, 'Working'),

(3, 3, 'Technicolor', 'jigna.thacker@technicolor.com', 1, 'Working'),

(4, 4, NULL, NULL, NULL, 'Student'),

(5, 5, 'GE Healthcare', 'ruchita.save@ge.com', 3, 'Working'),

(6, 6, 'Aditya birla', 'shubhi.bajpai@adityabirla.com', 3, 'Working'),

(7, 7, NULL, NULL, NULL, 'Student'),

(8, 8, NULL, NULL, NULL, 'Student'),

(9, 9, NULL, NULL, NULL, 'Student'),

(10, 10, 'huawei Technologies', 'gunjan19wadhwa@gmail.com', 4, 'Working'),

(11, 11, NULL, NULL, NULL, 'Student'),

(12, 12, 'Centurylink India', 'PreetInder.Sodhi@centurylink.com', 2, 'Working'),

(13, 13, 'SAP Labs India', 'udit.singh@sap.com', 2, 'Working'),

(14, 14, 'NestAway', 'deepak@nestaway.com', 1, 'Working'),

(15, 15, NULL, NULL, NULL, 'Student'),

(16, 16, NULL, NULL, NULL, 'Student'),

(17, 17, 'Microsoft', 't-akmeh@microsoft.com', 2, 'Working'),

(18, 18, 'Cognizant', 'bhavranjan.pandey@cognizant.com', 2, 'Working'),

(19, 19, NULL, NULL, NULL, 'Student'),

(20, 20, 'Tiny Mogul Games', 'sanchit@hike.in', 3, 'Working'); SET IDENTITY\_INSERT Employment\_details OFF;

-- Insert into Referrals table

SET IDENTITY\_INSERT Referrals ON;

INSERT INTO Referrals (ref\_id, referrer\_id, referrer\_bonus\_amount, referral\_valid, valid\_from, valid\_till) VALUES

(1, 2, 2500, 1, '2015-07-05', '2015-09-05'),

(2, 3, 2500, 1, '2015-07-05', '2015-09-05'),

(3, 5, 1000, 0, '2015-12-13', '2016-02-13'),

(4, 6, 2500, 0, '2016-04-25', '2016-06-24'),

(5, 10, 1000, 1, '2015-07-01', '2015-09-01'),

(6, 12, 2500, 1, '2015-05-12', '2015-07-12'),

(7, 13, 2500, 0, '2015-08-05', '2015-10-05'),

(8, 20, 1000, 1, '2016-02-05', '2016-04-05'),

(9, 2, 2500, 0, '2015-08-12', '2015-09-12'),

(10, 5, 1000, 1, '2016-02-18', '2016-04-18'),

(12, 20, 1500, 1, '2016-06-19', '2016-08-19'),

(13, 9, 2500, 0, '2015-11-15', '2016-01-15'),

(14, 13, 1000, 1, '2016-02-01', '2016-04-01'),

(15, 5, 1000, 1, '2016-04-25', '2016-06-24');

SET IDENTITY\_INSERT Referrals OFF;

-- Insert into Tenancy\_histories table

SET IDENTITY\_INSERT Tenancy\_histories ON;

INSERT INTO Tenancy\_histories (id, profile\_id, house\_id, move\_in\_date, move\_out\_date, rent, bed\_type, move\_out\_reason)

VALUES

(1, 1, 5, '2015-02-12', '2016-04-30', 7500, 'bed', 'MOVE\_OUT'),

(2, 2, 2, '2015-06-05', NULL, 11000, 'room', NULL),

(3, 3, 4, '2015-10-28', '2016-11-28', 12000, 'room', 'RENT\_CHANGE'),

(4, 4, 1, '2015-04-26', NULL, 8000, 'bed', NULL),

(5, 5, 3, '2015-05-15', '2015-12-27', 9000, 'bed', 'MOVE\_OUT'),

(6, 6, 8, '2015-12-25', NULL, 10200, 'room', NULL),

(7, 7, 6, '2015-11-20', NULL, 6500, 'bed', NULL),

(8, 8, 7, '2015-11-10', '2016-12-31', 7200, 'bed', 'MOVE\_OUT'),

(9, 9, 9, '2015-10-15', NULL, 7500, 'bed', NULL),

(10, 10, 10, '2015-06-20', NULL, 7500, 'bed', NULL),

(11, 11, 19, '2015-08-29', '2016-06-14', 8000, 'bed', 'INTERNAL\_TRANSFER'),

(12, 12, 15, '2015-02-24', NULL, 11000, 'room', NULL),

(13, 13, 12, '2015-02-25', NULL, 12000, 'room', NULL),

(14, 14, 18, '2016-01-07', '2016-12-30', 13500, 'room', 'MOVE\_OUT'),

(15, 15, 13, '2015-04-07', NULL, 6500, 'bed', NULL),

(16, 16, 17, '2015-04-23', NULL, 6500, 'bed', NULL),

(17, 17, 14, '2015-02-10', NULL, 10500, 'room', NULL),

(18, 18, 16, '2015-10-16', '2016-09-04', 8000, 'bed', 'MOVE\_OUT'),

(19, 19, 20, '2015-09-26', NULL, 7500, 'bed', NULL),

(20, 20, 11, '2015-09-30', NULL, 9500, 'bed', NULL);

SET IDENTITY\_INSERT Tenancy\_histories OFF;

1-- Query to get Profile ID, Full Name, and Contact Number of the tenant who has stayed the longest

SELECT TOP 1

P.profile\_id,

CONCAT(P.first\_name, ' ', P.last\_name) AS full\_name,

P.phone

FROM Profiles P

JOIN Tenancy\_histories T ON P.profile\_id = T.profile\_id

ORDER BY DATEDIFF(DAY, T.move\_in\_date, COALESCE(T.move\_out\_date, GETDATE())) DESC;

2-- Query to get Full Name, Email, and Phone of married tenants paying rent > 9000 using subqueries

SELECT DISTINCT P.first\_name, P.last\_name, P.email, P.phone

FROM Profiles P

JOIN Tenancy\_histories T ON P.profile\_id = T.profile\_id

WHERE P.marital\_status = 'Y' AND T.rent > 9000;

3-- Query to display profile id, full name, phone, email id, city, house id, move\_in\_date,

-- move\_out date, rent, total number of referrals made, latest employer and the occupational

-- category of all the tenants living in Bangalore or Pune in the time period of Jan 2015 to Jan

-- 2016 sorted by their rent in descending order

SELECT P.profile\_id,

CONCAT(P.first\_name, ' ', P.last\_name) AS full\_name,

P.phone,

P.email,

P.city,

T.house\_id,

T.move\_in\_date,

T.move\_out\_date,

T.rent,

COALESCE(R.total\_referrals, 0) AS total\_referrals, -- Handles NULL values

E.latest\_employer,

E.occupational\_category

FROM Profiles P

JOIN Tenancy\_histories T ON P.profile\_id = T.profile\_id

LEFT JOIN Employment\_details E ON P.profile\_id = E.profile\_id

LEFT JOIN (

SELECT referrer\_id, COUNT(\*) AS total\_referrals

FROM Referrals

GROUP BY referrer\_id

) R ON P.profile\_id = R.referrer\_id -- Optimized counting

WHERE P.city IN ('Bangalore', 'Pune')

AND T.move\_in\_date BETWEEN '2015-01-01' AND '2016-01-31'

ORDER BY T.rent DESC;

4-- Query to find full\_name, email\_id, phone number, referral code of tenants who have referred more than once

-- Also calculates the total bonus amount for valid referrals

SELECT

P.profile\_id,

CONCAT(P.first\_name, ' ', P.last\_name) AS full\_name,

P.email,

P.phone,

P.referral\_code,

COUNT(R.ref\_id) AS referral\_count, -- Number of times they referred

COALESCE(SUM(R.referrer\_bonus\_amount), 0) AS total\_bonus -- Avoid NULL values

FROM Profiles P

JOIN Referrals R ON P.profile\_id = R.referrer\_id

WHERE R.referral\_valid = 1

GROUP BY P.profile\_id, P.first\_name, P.last\_name, P.email, P.phone, P.referral\_code

HAVING COUNT(R.ref\_id) > 1; -- Only tenants who have referred more than once

5-- Query to find rent generated from each city and total rent across all cities

SELECT

ISNULL(P.city, 'Total') AS city, -- Replace NULL with "Total"

SUM(T.rent) AS total\_rent

FROM Profiles P

JOIN Tenancy\_histories T ON P.profile\_id = T.profile\_id

GROUP BY P.city WITH ROLLUP;

6-- Create a view 'vw\_tenant' to find profile\_id, rent, move\_in\_date, house\_type, beds\_vacant, description, and city

-- for tenants who shifted on/after 30th April 2015 and are living in houses with vacant beds and its address.

CREATE VIEW vw\_tenant AS

SELECT

P.profile\_id,

T.rent,

T.move\_in\_date,

H.house\_id, -- Added for better identification

H.house\_type,

COALESCE(H.beds\_vacant, 0) AS beds\_vacant, -- Ensures no NULL values

A.description,

A.city

FROM Profiles P

JOIN Tenancy\_histories T ON P.profile\_id = T.profile\_id

JOIN Houses H ON T.house\_id = H.house\_id

JOIN Addresses A ON H.house\_id = A.house\_id

WHERE T.move\_in\_date >= '2015-04-30'

AND COALESCE(H.beds\_vacant, 0) > 0;

GO

-- Verify the created view

SELECT \* FROM vw\_tenant;

7-- Query to extend the valid\_till date for a month for tenants who have referred more than one time

UPDATE Referrals

SET valid\_till = DATEADD(MONTH, 1, valid\_till)

WHERE referrer\_id IN (

SELECT referrer\_id

FROM Referrals

GROUP BY referrer\_id

HAVING COUNT(ref\_id) > 1

);

select \* from Referrals;

8-- Query to get Profile ID, Full Name, Contact Number of tenants along with 'Customer Segment'

-- Grade A: Rent > 10000, Grade B: Rent between 7500 and 10000, Grade C: Rent < 7500

SELECT P.profile\_id,

CONCAT(P.first\_name, ' ', P.last\_name) AS full\_name,

P.phone,

T.rent,

CASE

WHEN T.rent IS NULL THEN 'Unknown' -- Handles NULL values in rent

WHEN T.rent > 10000 THEN 'Grade A'

WHEN T.rent BETWEEN 7500 AND 10000 THEN 'Grade B'

ELSE 'Grade C'

END AS Customer\_Segment

FROM Profiles P

JOIN Tenancy\_histories T ON P.profile\_id = T.profile\_id;

9-- Query to get Fullname, Contact, City, and House Details of tenants who have not referred even once

SELECT P.profile\_id,

CONCAT(P.first\_name, ' ', P.last\_name) AS full\_name,

P.phone,

COALESCE(P.city, 'Unknown') AS city, -- Handles NULL city values

H.house\_type,

H.bhk\_details,

H.furnishing\_type

FROM Profiles P

JOIN Tenancy\_histories T ON P.profile\_id = T.profile\_id

JOIN Houses H ON T.house\_id = H.house\_id

LEFT JOIN Referrals R ON P.profile\_id = R.referrer\_id

WHERE R.referrer\_id IS NULL; -- Ensures tenants with no referrals are selected

10-- Query to get house details of the house with the highest occupancy

SELECT TOP 1

H.house\_id,

H.house\_type,

H.bhk\_details,

H.furnishing\_type,

COUNT(T.profile\_id) AS occupancy\_count

FROM Houses H

JOIN Tenancy\_histories T ON H.house\_id = T.house\_id

GROUP BY H.house\_id, H.house\_type, H.bhk\_details, H.furnishing\_type

ORDER BY occupancy\_count DESC;