**Database Setup**

1) **Create a database 'Tenant'**

CREATE DATABASE Tenant;

2) **Create tables with following specifications**

--------create table TENANCY HISTORIES----

CREATE TABLE Tenancy\_histories

( id int NOT NULL 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 NULL,

rent int NOT NULL,

Bed\_type varchar(255) NULL,

move\_out\_reason varchar(255) NULL

);

-------create table Profiles----

CREATE TABLE Profiles

( profile\_id int NOT NULL PRIMARY KEY IDENTITY(1,1),

first\_name varchar(255) NULL,

last\_name varchar(255) NULL,

email varchar(255) NOT NULL,

phone varchar(255) NOT NULL,

city\_hometown varchar(255) NULL,

pan\_card varchar(255) NULL,

created\_at date NOT NULL,

gender varchar(255) NOT NULL,

referral\_code varchar(255) NULL,

marital\_status varchar(255) NULL

);

-------create table Houses----

CREATE TABLE Houses

( house\_id int NOT NULL PRIMARY KEY IDENTITY(1,1),

house\_type varchar(255) NULL,

bhk\_details varchar(255) NULL,

bed\_count int NOT NULL,

furnishing\_type varchar(255) NULL,

Beds\_vacant int NOT NULL

);

---------create table Addresses----------

CREATE TABLE Addresses

( ad\_id int NOT NULL PRIMARY KEY IDENTITY(1,1),

name varchar(255) NULL,

description text NULL,

pincode int NULL,

city varchar(255) NULL,

house\_id int NOT NULL

);

---------create table Referrals----------

CREATE TABLE Referrals

( ref\_id int NOT NULL PRIMARY KEY IDENTITY(1,1),

referrer\_id int NOT NULL,

referrer\_bonus\_amount float NULL,

referral\_valid tinyint NULL,

vaild\_from date NULL,

valid\_till date NULL

);

----------create table Employment details----------

CREATE TABLE Employment\_details

( id int NOT NULL PRIMARY KEY IDENTITY(1,1),

profile\_id int NOT NULL,

latest\_employer varchar(255) NULL,

official\_mail\_id varchar(255) NULL,

yrs\_experience int NULL,

Occupational\_category varchar(255) NULL

);

----Foreign key Tenancy\_histories--------------------

Alter Table Tenancy\_histories

Add Constraint

fk\_tenancy FOREIGN KEY(profile\_id)

References Profiles (profile\_id);

----Foreign key Tenancy\_histories--------------------

Alter Table Tenancy\_histories

Add Constraint

fk\_histories FOREIGN KEY(house\_id)

References Houses (house\_id);

----Foreign key Addresses--------------------

Alter Table Addresses

Add Constraint

fk\_address FOREIGN KEY(house\_id)

References Houses (house\_id);

----Foreign key Referrals--------------------

Alter Table Referrals

Add Constraint

fk\_referral FOREIGN KEY(referrer\_id)

References Profiles (profile\_id);

----Foreign key Employment\_details--------------------

Alter Table Employment\_details

Add Constraint

fk\_employment FOREIGN KEY(profile\_id)

References Profiles (profile\_id);

---------Upload data into table Profiles-----------------------------

Insert into Profiles(first\_name,last\_name,email,phone,city\_hometown,created\_at,gender,referral\_code,marital\_status)

values('anusha','pariti','anusha.pariti@gmail.com',8105987404,'Bangalore','4/16/2015','F','7L5FZW','Y');

Insert into Profiles(first\_name,last\_name,email,phone,city\_hometown,created\_at,gender,referral\_code,marital\_status)

values('Ashish','Singh','ashish.singh@gmail.com',9876890463,'Bangalore','5/23/2015','M','KF34MF','Y'),

('Bhaskar','maheshwari','bhaskar.mah@gmail.com',9801834992,'Bangalore','5/1/2015','M','5TYSHGF','N'),

('Garima','yadav','garima0191@gmail.com',81059237004,'Bangalore','10/20/2015','F','5G5FQW','N'),

('Tanvi','mann','tanvi.mann1907@gmail.com',9178352769,'Bangalore','2/16/2015','F','JSH48B','N'),

('Harish','sahai','harish294all@gmail.com',9876548763,'Bangalore','11/11/2015','M','MKGI2W','Y'),

('Kamal','gera','kamal0094@gmail.com',8105987404,'Bangalore','10/31/2015','M','MK34ER','N'),

('Tushar','kapoor','tushar.kapoor21@gmail.com',8926537154,'Pune','12/12/2015','M','KLF12E','N'),

('Shivshankar','das','sankar.shiva730@gmail.com',9801834992,'Pune','10/6/2015','M','3RE5TY','Y'),

('Aditi','jain','aditi.jain@sproxil.com',9873123456,'Pune','6/11/2015','F','5TPL4E','N'),

('Deepa','sudhakar','sudhakar.deepa@gmail.com',7896785432,'Pune','9/15/2015','F','4RTYUIO','Y'),

('Umang','parejiya','uparejiya@gmail.com',7896543674,'Pune','7/18/2015','M','6TY4WE','N'),

('Mitali','gupta','mitali.gupta80@gmail.com',8796751238,'Pune','3/24/2015','F','5RTYU3','Y'),

('Manisha','Yadav','maniyadav88@gmail.com',9867845182,'Delhi','1/27/2015','F','LKGHY6','N'),

('Shivani','godha','shivani\_go@nid.edu',9878673428,'Delhi','2/19/2015','F','8NM4R','Y'),

('Rajan','pandey','raajanpandey@gmail.com',8987647811,'Delhi','9/4/2015','M','5TYUIO','N'),

('Roosena','manuel','roseenasimimanuel@gmail.com',9875623345,'Delhi','4/13/2015','F','6TYHU','Y'),

('Prabhjot','gill','prabhjotgill09@gmail.com',9800786688,'Delhi','12/30/2015','M','GHJK34','N'),

('Ankita','sharma','ankita.anku96@gmail.com',9988789656,'Delhi','8/17/2015','F','TH67TY','Y'),

('Karan','Singh','karan.singh@gmail.com',8976665768,'Delhi','9/15/2015','M','LRF34F','N');

---------Upload data into table Houses-----------------------------

Insert into Houses(house\_type,bhk\_details,bed\_count,furnishing\_type,Beds\_vacant)

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

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

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

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

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

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

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

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

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

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

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

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

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

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

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

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

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

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

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

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

---------Upload data into table Tenancy histories---------------

Insert into Tenancy\_histories(profile\_id,house\_id,move\_in\_date,move\_out\_date,rent,Bed\_type,move\_out\_reason)

values(1,5,'2/12/2015','4/30/2016',7500,'bed','MOVE\_OUT'),

(2,2,'6/5/2015',NULL,11000,'room',''),

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

(4,1,'4/26/2015',NULL,8000,'bed',''),

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

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

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

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

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

(10,10,'6/20/2015',NULL,7500,'bed',''),

(11,19,'8/29/2015','6/14/2016',8000,'bed','INTERNAL\_TRANSFER'),

(12,15,'2/24/2015',NULL,11000,'room',''),

(13,12,'2/25/2015',NULL,12000,'room',''),

(14,18,'1/7/2016','12/30/2016',13500,'room','MOVE\_OUT'),

(15,13,'4/7/2015',NULL,6500,'bed',''),

(16,17,'4/23/2015',NULL,6500,'bed',''),

(17,14,'2/10/2015',NULL,10500,'room',''),

(18,16,'10/16/2015','9/4/2016',8000,'bed','MOVE\_OUT'),

(19,20,'9/26/2015',NULL,7500,'bed',''),

(20,11,'9/30/2015',NULL,9500,'bed','');

select \* from Tenancy\_histories;

------------Upload data into table Addresses--------

Insert into Addresses(name,description,pincode,city,house\_id)

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

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

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

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

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

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

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

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

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

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

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

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

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

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

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

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

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

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

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

('Sun city appartments','Majeera Diamond Towers,malad-west',5600263,'Pune',20);

select \* from Addresses;

--------Upload data into table Referrals--------

Insert into Referrals(referrer\_id,referrer\_bonus\_amount,referral\_valid,vaild\_from,valid\_till)

values(2,2500,1,'7/5/2015','9/5/2015'),

(3,2500,1,'7/5/2015','9/5/2015'),

(5,1000,0,'12/13/2015','2/13/2016'),

(6,2500,0,'4/25/2016','6/24/2016'),

(10,1000,1,'7/1/2015','9/1/2015'),

(12,2500,1,'5/12/2015','7/12/2015'),

(13,2500,0,'8/5/2015','10/5/2015'),

(20,1000,1,'2/5/2016','4/5/2016'),

(2,2500,0,'8/12/2015','9/12/2015'),

(5,1000,1,'2/18/2016','4/18/2016'),

(20,1500,1,'6/19/2016','8/19/2016'),

(9,2500,0,'11/15/2015','1/15/2016'),

(13,1000,1,'2/1/2016','4/1/2016'),

(5,1000,1,'4/25/2016','6/24/2016');

select \* from Referrals

---------------------------Upload data into table Employment\_details---------------

Insert into Employment\_details(profile\_id,latest\_employer,official\_mail\_id,yrs\_experience,Occupational\_category)

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

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

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

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

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

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

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

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

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

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

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

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

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

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

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

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

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

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

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

(20,'Tiny Mogul Games','sanchit@hike.in',3,'Working');

select \* from Employment\_details

**QUESTIONS**

Q.1. Write a query to get Profile ID, Full Name and Contact Number of the tenant who has stayed

with us for the longest time period in the past

Answer :

--------------------------SOLUTION FOR QUESTION NO.1-------------------------------------

Select s.profile\_id,concat (first\_name,' ',last\_name) as Full\_name,phone from

Profiles s

Full join

Tenancy\_histories t on

s.profile\_id=t.profile\_id

where s.profile\_id=

(SELECT top 1 profile\_id from Tenancy\_histories)

order by DATEDIFF(month,move\_in\_date,move\_out\_date);

Q.2. Write a query to get the Full name, email id, phone of tenants who are married and paying

rent > 9000 using subqueries

Answer:

---------------------------SOLUTION FOR QUESTION NO.2------------------------------------

select concat (first\_name,' ',last\_name) as Full\_Name,email, phone

from Profiles

where (Profiles.profile\_id

IN (select profile\_id from Tenancy\_histories where (Tenancy\_histories.rent>9000)))

and Profiles.marital\_status = 'Y';

Q.3. Write a 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

Answer:

---------------------------SOLUTION FOR QUESTION NO.3------------------------------------

select DISTINCT p.profile\_id, concat (first\_name,' ',last\_name) as Full\_Name,phone,email,city,a.house\_id,

move\_in\_date,move\_out\_date,rent,count(referrer\_id) as Referrals\_made,latest\_employer,Occupational\_category

from Profiles p

Full JOIN

Tenancy\_histories t On

p.profile\_id = t.profile\_id

Full join

Referrals r On

p.profile\_id = r.referrer\_id

Full Join

Employment\_details e On

p.profile\_id = e.profile\_id

Full Join

Addresses a On

t.house\_id = a.house\_id

where city in

( select city from Addresses where city = 'bangalore'or city ='Pune'

and move\_in\_date > '12-31-2014')

group by p.profile\_id,t.move\_in\_date,t.move\_out\_date,first\_name,last\_name,phone,email,city,a.house\_id,

move\_in\_date,move\_out\_date,rent,latest\_employer,Occupational\_category

Order by rent DESC;

Q.4. Write a sql snippet to find the full\_name, email\_id, phone number and referral code of all

the tenants who have referred more than once. Also find the total bonus amount they should receive given that the bonus gets calculated only for valid referrals.

Answer:

---------------------------SOLUTION FOR QUESTION NO.4------------------------------------

select DISTINCT concat (first\_name,' ',last\_name) as Full\_Name,email, phone,referral\_code,sum(referrer\_bonus\_amount) as Total\_bonus

from Profiles p

inner join

Referrals r

On

p.profile\_id = r.referrer\_id

where exists

(select count(referrer\_id) as Count\_of\_id

from Referrals

where referral\_valid=1

having count(referrer\_id) > 1)

Group by referral\_valid,referrer\_id,first\_name,last\_name,email,phone,referral\_code;

Q. 5 Write a query to find the rent generated from each city and also the total of all cities.

Answer:

---------------------------SOLUTION FOR QUESTION NO.5------------------------------------

select a.city,sum(rent) as Total\_city\_rent

from Tenancy\_histories t

Right join

Addresses a

On

t.house\_id =a.house\_id

Group by city

UNION

Select 'Total' as City, SUM(rent) from Tenancy\_histories;

Q. 6 Create a view 'vw\_tenant' find profile\_id, rent, move\_in\_date, house\_type, beds\_vacant, description and city of tenants who shifted on/after 30th april 2015 and are living in houses having vacant beds and its address.

Answer:

---------------------------SOLUTION FOR QUESTION NO.6------------------------------------

Create View vw\_tenant

AS

Select profile\_id,rent,move\_in\_date,house\_type,beds\_vacant,description,city

From Tenancy\_histories f

INNER JOIN

Houses h

ON

f.house\_id = h.house\_id

INNER JOIN

Addresses a

ON

h.house\_id = a.house\_id

where Beds\_vacant != 0

and move\_in\_date >= '04-30-2015';

select \* from vw\_tenant

Q.7 Write a code to extend the valid\_till date for a month of tenants who have referred more

than two times

Answer:

---------------------------SOLUTION FOR QUESTION NO.7------------------------------------

Select referrer\_id,DATEADD(MM, 1, valid\_till) as Extended\_date

from referrals

where referrer\_id in

(select referrer\_id from referrals

group by referrer\_id

having count(referrer\_id) > 2);

Q.8 Write a query to get Profile ID, Full Name , Contact Number of the tenants along with a new

column 'Customer Segment' wherein if the tenant pays rent greater than 10000, tenant falls

in Grade A segment, if rent is between 7500 to 10000, tenant falls in Grade B else in Grade C

Answer:

---------------------------SOLUTION FOR QUESTION NO.8------------------------------------

Select DISTINCT concat (first\_name,' ',last\_name) as Full\_Name,email, phone,

IIF(rent > 10000,'Grade A',

IIF(rent >= 7500 and rent<= 10000, 'Grade B','Grade C') ) as Customer\_Segment

From Profiles p

inner join

Tenancy\_histories t On

p.profile\_id = t.profile\_id

group by rent,first\_name,last\_name,email,phone;

Q.9 Write a query to get Fullname, Contact, City and House Details of the tenants who have not

referred even once

Answer:

---------------------------SOLUTION FOR QUESTION NO.9------------------------------------

Select DISTINCT concat (first\_name,' ',last\_name) as Full\_Name,email, phone,city\_hometown,r.referrer\_id,h.house\_type,

h.bhk\_details,h.furnishing\_type

from Profiles p

full join

Tenancy\_histories t

On

p.profile\_id=t.profile\_id

full join

Referrals r

On

p.profile\_id = r.referrer\_id

full join

Houses h

On

t.house\_id=h.house\_id

where p.profile\_id not in (select referrer\_id from Referrals)

group by r.referrer\_id,first\_name,last\_name,email,phone,city\_hometown,house\_type,bhk\_details,furnishing\_type;

Q.10 Write a query to get the house details of the house having highest occupancy

Answer:

---------------------------SOLUTION FOR QUESTION NO.10-----------------------------------

select top (1) with ties a.house\_id,a.name,h.house\_type,h.bhk\_details,h.furnishing\_type,

(h.bed\_count - h.Beds\_vacant) AS Total\_Occupancy

from Addresses a

INNER JOIN Houses h

ON

a.house\_id = h.house\_id

order by Total\_Occupancy Desc