Phase III. Implementation

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0. Pre-Illumination

For clearly describing the implementation of our database, we separate this report into four sections. In Section 1 we normalize the original relational schema into third-normal form and changed part of our relational schema because of some requirement from Phase III. We then explained what are changed and we show a dependency diagram for each relation one by one. In Section 2 we begin our process of building a database in *Oracle* using SQL statements, which contains three parts. Part one is the creation of database, including tables, all other structures as well as data type and format, Part two is the creation of views corresponding to five distinct requirements from Question d, and Part three is the creation of Queries to satisfy 14 requirements from Question e. Finally, a short summary is given at the end of this report.

1. Modified Relational Schema

Firstly, according to the requirement of phase III and with purpose to simplify the relation model for this database, we changed the way to handle multi valued attribute and added a relation of follows. The modified relational schema is **in attached PDF.**

2. Implementation of Database

2.1 Creation of Database with SQL Statements

After normalizing every relational schema into third normal form and modifying some details, it is the time to implement our database using Oracle SQL Plus.

2.1.1 Table Creation

Using SQL statement, we create 19 tables as follows:

- **Country:**

```
Create Table Country
(
  Country_Name Varchar(75) Not Null,
  Country_Id        int  Primary Key
);
```

- **State:**

```
Create Table State
(
  State_Name   Varchar(59) Not Null,
  Country_Id       int,
  Foreign Key (Country_Id) References Country(Country_Id),
  Primary Key(State_Name,Country_Id)
);
```

- **City:**

```
Create Table City
(
  City_Name   Varchar(59) ,
  State_Name   Varchar(59),
  Country_Id   int,
Foreign Key (Country_Id,State_Name) References
State(Country_Id,State_Name),
  Primary Key(City_Name,State_Name,Country_Id)
```

```
);
```

- **Business_Partner:**

```
Create Table Business_Partner
(
  Bs_Name Varchar(15) Not Null,
  Contact_Person Varchar(20) Not Null,
  Bs_Id int Primary Key,
  Phone NUMBER(19) Not Null,
  Bs_Type Varchar(25) Not Null,
  Check (Bs_Type IN ( 'Restaurants','Hotel') )
);
```

- **Trip_Plans:**

```
Create Table Trip_Plans
(
  Trip_Name Varchar(20),
  Trip_id int Primary Key,
  Trip_Start   date,
  Trip_End    date,
  Check (Trip_Start <Trip_End )
 );
```

- **Destination_Type:**

```
Create Table Destination_Type
(
  Destination_Type_Id int Primary Key,
  Destination_Type_Name  Varchar(20) Not Null
);
```

- **Member_Type:**

```
Create Table Member_Type
(
  Member_Type_Id int Primary Key,
  Member_Type_Name  Varchar(20) Not Null
```

```
);
```

- **Destination:**

```
Create Table Destination
(
  Dest_Id  int  Primary Key  ,
  Dest_Name   Varchar(85) Not Null,
  Description   Varchar(250),
  Cost_Price   Decimal(5,2),
  City_Name Varchar(59) Not Null,
  State_Name Varchar(59) Not Null,
  Country_Id     int  Not Null,
  Street_No  int Not Null,
  Zip_code int,
  Bs_Id int,
  Destination_Type_Id int,
  Foreign Key ( Destination_Type_Id) References
Destination_Type(Destination_Type_Id),
  Foreign Key ( Bs_Id ) References Business_Partner(Bs_Id ),
  Foreign Key(Country_Id,State_Name,City_Name) References
City(Country_Id,State_Name,City_Name)
  );
```

- **Member:**

```
Create Table Member
(
  Username  Varchar(15) Primary Key,
  Password   Varchar(128) Not Null,
  Email          Varchar(345) Not Null,
  Street_No     int Not Null,
  Zip_code       int Not Null,
  City_Name    Varchar(59) Not Null,
  State_Name  Varchar(59) Not Null,
  Country_Id    int Not Null,
  Member_Type_Id  int,
Foreign Key( Member_Type_Id) References Member_Type(Member_Type_Id),
 Foreign Key(Country_Id,State_Name,City_Name) References
City(Country_Id,State_Name,City_Name)
   );
```

- **Comments:**

```
Create Table Comments
(
  Replies  Long,
  Post_Time date,
  Username  Varchar(15) Not Null,
  Dest_Id int,
  Content Varchar(3000),
  Primary Key(Post_Time ,Username ,Dest_Id ),
  Foreign Key(Username) References Member(Username),
  Foreign Key(Dest_Id)References Destination(Dest_Id)
);
```

- **Visited_Dest:**

```
Create Table Visited_dest
(
  Username  Varchar(15) Not Null,
  Visited_Dest_Id  int  Not Null,
  Start_Date date,
  End_Date date,
  Primary Key(Visited_Dest_Id ,Username),
  Foreign Key(Username) References Member(Username),
  Foreign Key(Visited_Dest_Id)References Destination(Dest_Id),
  Check (Start_Date < End_Date )
);
```

- **Dest_Desc_Modified:**

```
Create table Dest_Desc_Modified
(
  Pref_Username Varchar(15),
  Dest_Id   int,
  member_type_id int,
  Date_Modified Timestamp,
  Primary Key(Pref_Username ,Dest_Id,Date_Modified ),
  Foreign Key (Pref_Username ) References Member(Username),
  Foreign Key (Dest_Id) References Destination(Dest_Id),
   Foreign Key( Member_Type_Id) References
Member_Type(Member_Type_Id),
  check( member_type_id = 1)
  );
```

- **Photo:**

```
Create Table Photo
(
  Photo_Id int  Primary Key,
  Link           Varchar(2083) Not Null,
  Visit_Dest_Id        int  Not Null,
  Username  Varchar(15) Not Null,
  Foreign Key(Username,Visit_Dest_Id) References
Visited_dest(Username,Visited_Dest_Id )
 );
```

- **Business_Partner_Rating:**

```
Create Table Business_Partner_Rating
(
  Bs_Id int Not Null,
  Rate int Not Null,
  Username  Varchar(15) Not Null,
  Foreign Key(Username) References Member(Username),
  Foreign Key(Bs_Id)References Business_Partner(Bs_Id),
  Primary Key(Bs_id,Username)
);
```

- **Dest_Post:**

```
Create Table Dest_Post
(
 Username  Varchar(15) Not Null,
 Dest_Id  int,
 Dest_Rating int Not Null,
 Post_Time date,
 Primary Key(Dest_Id ,Username ,Post_Time ),
 Foreign Key(Post_Time,Username, Dest_Id)References
Comments(Post_Time,Username, Dest_Id),
Check (Dest_Rating >= 1 And Dest_Rating <=10)
);
```

- **Likes_Dislikes_comment:**

```
Create Table Likes_Dislikes_comment
(
  Username Varchar(15),
  Dest_Id int,
  Post_Time date,
  Member_Username Varchar(15),
  Like_Dislike int,
  Primary Key(Username,Dest_Id,Post_Time,Member_Username),
  Foreign Key (Username,Post_Time,Dest_Id) References
Comments(Username,Post_Time,Dest_Id),
  Foreign Key(Member_Username) references Member(Username)
);
```

- **Trip_Plan_Includes:**

```
Create Table Trip_Plan_Includes
(
 Trip_id int Not Null,
 Arrival_Time   date,
 Departure_Time    date,
 Username varchar(15) Not Null,
 Dest_Id int,
 Primary Key(Trip_id,Username,Dest_Id),
 Foreign Key(Trip_id) References Trip_Plans(Trip_id),
 Foreign Key(Username) References Member(Username),
 Foreign Key(Dest_Id)References Destination(Dest_Id)
);
```

- **Follower_Followed_Member:**

```
Create Table Follower_Followed_Member
(
 Followed_Username Varchar(15),
 Follower_Username Varchar(15),
 Primary Key(Followed_Username,Follower_Username),
 Foreign Key(Followed_Username) References Member(Username),
 Foreign Key(Follower_Username) References Member(Username)
);
```

- **Wish_dest:**

```
Create Table Wish_dest
(
  Username varchar(15),
  Wish_dest int,
  Primary Key(Username,Wish_dest),
  Foreign Key(Username) References Member(Username),
  Foreign Key(Wish_dest) References Destination(dest_Id)
);
```

2.1.2 A Database State

We insert some values into the database in order to test our SQL create view and query statement. The insertion statements are shown as follows:

- **INSERTION OF TABLE Country**

```
INSERT INTO country (Country_Name, Country_Id) VALUES ('United States',
'1');
INSERT INTO country (Country_Name, Country_Id) VALUES ('FRANCE', '2');
```

Country_Name	Country_Id
United States	1
FRANCE	2

- **INSERTION OF TABLE State**

```
INSERT INTO state (State_Name, Country_Id) VALUES ('New York', '1');
INSERT INTO state (State_Name, Country_Id) VALUES ('Texas', '1');
INSERT INTO state (State_Name, Country_Id) VALUES ('Corsica', '2');
INSERT INTO state (State_Name, Country_Id) VALUES ('Ile-de-France', '2');
```

- **INSERTION OF TABLE City**

```
-----------------------------------------------------------------------------------------------

INSERT INTO city (City_Name, State_Name, Country_Id) VALUES ('Albany',
'New York', '1');
INSERT INTO city (City_Name, State_Name, Country_Id) VALUES ('Tyler',
'Texas', '1');
INSERT INTO city (City_Name, State_Name, Country_Id) VALUES ('Bastia',
'Corsica', '2');
INSERT INTO city (City_Name, State_Name, Country_Id) VALUES ('Paris',
'Ile-de-France', '2');
INSERT INTO city (City_Name, State_Name, Country_Id) VALUES ('Chatou',
'Ile-de-France', '2');
INSERT INTO city (City_Name, State_Name, Country_Id) VALUES ('Chelles',
'Ile-de-France', '2');
INSERT INTO city (City_Name, State_Name, Country_Id) VALUES ('Clichy',
'Ile-de-France', '2');
INSERT INTO city (City_Name, State_Name, Country_Id) VALUES ('Colombes',
'Ile-de-France', '2');

-----------------------------------------------------------------------------------------------
```

- **INSERTION OF TABLE Destination_Type**

```
-----------------------------------------------------------------------------------------------

INSERT INTO destination_type (Destination_Type_Id, Destination_Type_Name)
VALUES ('1', 'Other Attractions');
INSERT INTO destination_type (Destination_Type_Id, Destination_Type_Name)
VALUES ('2', 'Restaurants');
INSERT INTO destination_type (Destination_Type_Id, Destination_Type_Name)
VALUES ('3', 'Shopping Mall');

-----------------------------------------------------------------------------------------------
```

- **INSERTION OF TABLE Business_Partner**

```
-----------------------------------------------------------------------------------------------

INSERT INTO business_partner (Bs_Name, Contact_Person, Bs_Id, Phone,
Bs_Type) VALUES ('Rolers', 'John', '1', '1032629199', 'Restaurants');
INSERT INTO business_partner (Bs_Name, Contact_Person, Bs_Id, Phone,
Bs_Type) VALUES ('Rockers', 'Steve', '2', '19032629199', 'Restaurants');
INSERT INTO business_partner (Bs_Name, Contact_Person, Bs_Id, Phone,
Bs_Type) VALUES ('MMT', 'Jake', '3', '9032629198', 'Restaurants');

-----------------------------------------------------------------------------------------------
```

- **INSERTION OF TABLE Destination**

```
INSERT INTO destination (Dest_Id, Dest_Name, Description, Cost_Price,
City_Name, State_Name, Country_Id, Street_No, Zip_code, Bs_Id,
Destination_Type_Id) VALUES ('1', 'YONO', 'Global menu emphasizing
Indonesian cuisine .', '10', 'Albany', 'New York', '1', '25', '12210',
'1', '2');
INSERT INTO destination (Dest_Id, Dest_Name, Description, Cost_Price,
City_Name, State_Name, Country_Id, Street_No, Zip_code, Bs_Id,
Destination_Type_Id) VALUES ('2', 'Athos', 'Authentic Greek fare in an
upscale setting with a lively bar.', '8', 'Albany', 'New York', '1',
'4602', '12203', '2', '2');
INSERT INTO destination (Dest_Id, Dest_Name, Description, Cost_Price,
City_Name, State_Name, Country_Id, Street_No, Zip_code, Bs_Id,
Destination_Type_Id) VALUES ('3', 'A Tana', 'just wow', '25', 'Bastia',
'Corsica', '2', '2', '20200', '3', '2');
INSERT INTO destination (Dest_Id, Dest_Name, Description, Cost_Price,
City_Name, State_Name, Country_Id, Street_No, Zip_code, Bs_Id,
Destination_Type_Id) VALUES ('4', 'Caffe Italia', 'A veteran family-run
standby for classic Italian dishes.', '20', 'Albany', 'New York', '1',
'662', '12206', '2', '2');
INSERT INTO destination (Dest_Id, Dest_Name, Description, Cost_Price,
City_Name, State_Name, Country_Id, Street_No, Zip_code, Bs_Id,
Destination_Type_Id) VALUES ('5', '677 Prime', 'Upscale steakhouse with
mahogany accents art features 400+ wines  bar deals.', '15', 'Albany',
'New York', '1', '677', '12207', '3', '2');
INSERT INTO destination (Dest_Id, Dest_Name, Description, Cost_Price,
City_Name, State_Name, Country_Id, Street_No, Zip_code, Bs_Id,
Destination_Type_Id) VALUES ('6', 'Grazie Mille', 'vegetarian food is
great.', '12', 'Bastia', 'Corsica', '2', '32', '20287', '2', '2');
INSERT INTO destination (Dest_Id, Dest_Name, Description, Cost_Price,
City_Name, State_Name, Country_Id, Street_No, Zip_code, Bs_Id,
Destination_Type_Id) VALUES ('7', 'Eiffel Tower', 'Romantic place to
visit.', '50', 'Paris', 'Ile-de-France', '2', '21', '20222', '3', '1');
INSERT INTO destination (Dest_Id, Dest_Name, Description, Cost_Price,
City_Name, State_Name, Country_Id, Street_No, Zip_code, Bs_Id,
Destination_Type_Id) VALUES ('8', 'Lmao', 'best pasta here.', '30',
'Chatou', 'Ile-de-France', '2', '42', '29222', '1', '2');
INSERT INTO destination (Dest_Id, Dest_Name, Description, Cost_Price,
City_Name, State_Name, Country_Id, Street_No, Zip_code, Bs_Id,
Destination_Type_Id) VALUES ('9', 'Musee du Louvre', 'A sumptuous palace
that was once the home of France Kings', '10', 'Chelles', 'Ile-de-France',
'2', '92', '20250', '2', '1');
INSERT INTO destination (Dest_Id, Dest_Name, Description, Cost_Price,
City_Name, State_Name, Country_Id, Street_No, Zip_code, Bs_Id,
Destination_Type_Id) VALUES ('10', 'Rono', 'Awesome Chinese food.', '33',
'Clichy', 'Ile-de-France', '2', '122', '20290', '3', '2');
INSERT INTO destination (Dest_Id, Dest_Name, Description, Cost_Price,
City_Name, State_Name, Country_Id, Street_No, Zip_code, Bs_Id,
```

```
Destination_Type_Id) VALUES ('11', 'Eats', 'Mixture of all Cousines.',
'22', 'Colombes', 'Ile-de-France', '2', '222', '20270', '2', '2');
```

- **INSERTION OF TABLE Member_Type**

```
INSERT INTO member_type (Member_Type_Id, Member_Type_Name) VALUES ('1',
'Preferred');
INSERT INTO member_type (Member_Type_Id, Member_Type_Name) VALUES ('2',
'Regular');
```

- **INSERTION OF TABLE Member**

```
INSERT INTO member (Username, Password, Email, Street_No, Zip_code,
City_Name, State_Name, Country_Id, Member_Type_Id) VALUES ('pprasun',
'124578', 'pprasun@patriots.uttyler.edu', '3700', '75701', 'Tyler',
'Texas', 1, 1);
INSERT INTO member (Username, Password, Email, Street_No, Zip_code,
City_Name, State_Name, Country_Id, Member_Type_Id) VALUES ('rpawan',
'12457888', 'rpawan@patriots.uttyler.edu', '3700', '75701', 'Tyler',
'Texas', 1, 1);
INSERT INTO member (Username, Password, Email, Street_No, Zip_code,
City_Name, State_Name, Country_Id, Member_Type_Id) VALUES ('ecisneros',
'wow', 'ecisneros@patriots.uttyler.edu', '51', '20200', 'Bastia',
'Corsica', 2, 1);
INSERT INTO member (Username, Password, Email, Street_No, Zip_code,
City_Name, State_Name, Country_Id, Member_Type_Id) VALUES ('ssagar',
'wow', 'ssagar@gmail.com', '91', '20201', 'Bastia', 'Corsica', 2, 1);
INSERT INTO member (Username, Password, Email, Street_No, Zip_code,
City_Name, State_Name, Country_Id, Member_Type_Id) VALUES ('kkapoor',
'test', 'kkapoor@gmail.com', '101', '20251', 'Bastia', 'Corsica', 2, 1);
INSERT INTO member (Username, Password, Email, Street_No, Zip_code,
City_Name, State_Name, Country_Id, Member_Type_Id) VALUES ('knikhil',
'123rwrcs', 'knikhil@gmail.com', '3352', '12207', 'Albany', 'New York', 1,
2);
INSERT INTO member (Username, Password, Email, Street_No, Zip_code,
City_Name, State_Name, Country_Id, Member_Type_Id) VALUES ('rschumaker',
'derdsws', 'rschumaker@gmail.com', '2152', '22074', 'Albany', 'New York',
1, 2);
```

• INSERTION OF TABLE Visited_Dest

```
INSERT INTO visited_dest (Username, Visited_Dest_Id, Start_Date, End_Date)
VALUES ('pprasun', '1', TO_DATE('2019-04-01 00:00:00', 'yyyy-mm-dd
hh24:mi:ss'), TO_DATE('2019-04-15 18:00:00', 'yyyy-mm-dd hh24:mi:ss'));
INSERT INTO visited_dest (Username, Visited_Dest_Id, Start_Date, End_Date)
VALUES ('rpawan', '3', TO_DATE('2019-04-01 00:00:00', 'yyyy-mm-dd
hh24:mi:ss'), TO_DATE('2019-04-06 18:00:00', 'yyyy-mm-dd hh24:mi:ss'));
INSERT INTO visited_dest (Username, Visited_Dest_Id, Start_Date, End_Date)
VALUES ('rpawan', '6', TO_DATE('2019-04-07 00:00:00', 'yyyy-mm-dd
hh24:mi:ss'), TO_DATE('2019-04-08 18:00:00', 'yyyy-mm-dd hh24:mi:ss'));
INSERT INTO visited_dest (Username, Visited_Dest_Id, Start_Date, End_Date)
VALUES ('rpawan', '7', TO_DATE('2019-04-09 00:00:00', 'yyyy-mm-dd
hh24:mi:ss'), TO_DATE('2019-04-10 18:00:00', 'yyyy-mm-dd hh24:mi:ss'));
INSERT INTO visited_dest (Username, Visited_Dest_Id, Start_Date, End_Date)
VALUES ('rpawan', '8', TO_DATE('2019-04-11 00:00:00', 'yyyy-mm-dd
hh24:mi:ss'), TO_DATE('2019-04-13 18:00:00', 'yyyy-mm-dd hh24:mi:ss'));
INSERT INTO visited_dest (Username, Visited_Dest_Id, Start_Date, End_Date)
VALUES ('rpawan', '9', TO_DATE('2019-04-14 00:00:00', 'yyyy-mm-dd
hh24:mi:ss'), TO_DATE('2019-04-16 18:00:00', 'yyyy-mm-dd hh24:mi:ss'));
INSERT INTO visited_dest (Username, Visited_Dest_Id, Start_Date, End_Date)
VALUES ('rpawan', '10', TO_DATE('2019-04-17 00:00:00', 'yyyy-mm-dd
hh24:mi:ss'), TO_DATE('2019-04-19 18:00:00', 'yyyy-mm-dd hh24:mi:ss'));
INSERT INTO visited_dest (Username, Visited_Dest_Id, Start_Date, End_Date)
VALUES ('rpawan', '11', TO_DATE('2019-04-20 00:00:00', 'yyyy-mm-dd
hh24:mi:ss'), TO_DATE('2019-04-22 18:00:00', 'yyyy-mm-dd hh24:mi:ss'));
INSERT INTO visited_dest (Username, Visited_Dest_Id, Start_Date, End_Date)
VALUES ('rpawan', '1', TO_DATE('2019-04-20 00:00:00', 'yyyy-mm-dd
hh24:mi:ss'), TO_DATE('2019-04-22 18:00:00', 'yyyy-mm-dd hh24:mi:ss'));
```

• INSERTION OF TABLE Trip_Plans

```
INSERT INTO trip_plans (Trip_Name, Trip_id, Trip_Start, Trip_End) VALUES
('France tour', '1', TO_DATE('2019-04-01 00:00:00', 'yyyy-mm-dd
hh24:mi:ss'), TO_DATE('2019-04-15 18:00:00', 'yyyy-mm-dd hh24:mi:ss'));
INSERT INTO trip_plans (Trip_Name, Trip_id, Trip_Start, Trip_End) VALUES
('World tour', '2', TO_DATE('2019-04-01 00:00:00', 'yyyy-mm-dd
hh24:mi:ss'), TO_DATE('2019-04-22 18:00:00', 'yyyy-mm-dd hh24:mi:ss'));
INSERT INTO trip_plans (Trip_Name, Trip_id, Trip_Start, Trip_End) VALUES
('US tour', '3', TO_DATE('2019-04-02 00:00:00', 'yyyy-mm-dd hh24:mi:ss'),
TO_DATE('2019-04-23 18:00:00', 'yyyy-mm-dd hh24:mi:ss'));
INSERT INTO trip_plans (Trip_Name, Trip_id, Trip_Start, Trip_End) VALUES
('New year Tour', '4', TO_DATE('2019-01-01 00:00:00', 'yyyy-mm-dd
hh24:mi:ss'), TO_DATE('2019-04-07 18:00:00', 'yyyy-mm-dd hh24:mi:ss'));
```

- **INSERTION OF TABLE Trip_Plan_Includes**

```
INSERT INTO trip_plan_includes (Trip_id, Arrival_Time, Departure_Time,
Username, Dest_Id) VALUES ('1', TO_DATE('2019-04-01 10:00:00', 'yyyy-mm-dd
hh24:mi:ss'), TO_DATE('2019-04-15 10:00:00', 'yyyy-mm-dd hh24:mi:ss'),
'pprasun', 3);
INSERT INTO trip_plan_includes (Trip_id, Arrival_Time, Departure_Time,
Username, Dest_Id) VALUES ('2', TO_DATE('2019-04-01 10:00:00', 'yyyy-mm-dd
hh24:mi:ss'), TO_DATE('2019-04-16 10:00:00', 'yyyy-mm-dd hh24:mi:ss'),
'pprasun', 1);
INSERT INTO trip_plan_includes (Trip_id, Arrival_Time, Departure_Time,
Username, Dest_Id) VALUES ('2', TO_DATE('2019-04-16 10:00:00', 'yyyy-mm-dd
hh24:mi:ss'), TO_DATE('2019-04-22 10:00:00', 'yyyy-mm-dd hh24:mi:ss'),
'pprasun', 3);
INSERT INTO trip_plan_includes (Trip_id, Arrival_Time, Departure_Time,
Username, Dest_Id) VALUES ('3', TO_DATE('2019-03-16 10:00:00', 'yyyy-mm-dd
hh24:mi:ss'), TO_DATE('2019-03-22 10:00:00', 'yyyy-mm-dd hh24:mi:ss'),
'rpawan', 3);
```

- **INSERTION OF TABLE Comments**

```
INSERT INTO comments (Replies, Post_Time, Username, Dest_Id, Content)
VALUES ('', SYSDATE, 'pprasun', '1', 'This place is good.');
INSERT INTO comments (Replies, Post_Time, Username, Dest_Id, Content)
VALUES ('', SYSDATE, 'pprasun', '2', 'This place is okay.');
INSERT INTO comments (Replies, Post_Time, Username, Dest_Id, Content)
VALUES ('', SYSDATE, 'pprasun', '3', 'This place is wow.');
INSERT INTO comments (Replies, Post_Time, Username, Dest_Id, Content)
VALUES ('', SYSDATE, 'rpawan', '1', 'I love food and this place satisfies
my cravings.');
INSERT INTO comments (Replies, Post_Time, Username, Dest_Id, Content)
VALUES ('', SYSDATE, 'rpawan', '2', 'This place is not that good');
INSERT INTO comments (Replies, Post_Time, Username, Dest_Id, Content)
VALUES ('', SYSDATE, 'rpawan', '3', 'this is the place to be');
INSERT INTO comments (Replies, Post_Time, Username, Dest_Id, Content)
VALUES ('', SYSDATE, 'rpawan', '6', 'This vegetarian is so yum.');
INSERT INTO comments (Replies, Post_Time, Username, Dest_Id, Content)
VALUES ('', SYSDATE, 'rschumaker', '7', 'One of best tourist place.');
INSERT INTO comments (Replies, Post_Time, Username, Dest_Id, Content)
VALUES ('', SYSDATE, 'ssagar', '8', 'Best Pasta Ever');
INSERT INTO comments (Replies, Post_Time, Username, Dest_Id, Content)
VALUES ('', SYSDATE, 'pprasun', '9', 'Well it is artistic.');
INSERT INTO comments (Replies, Post_Time, Username, Dest_Id, Content)
VALUES ('', SYSDATE, 'kkapoor', '10', 'Best Chinese.');
```

```
INSERT INTO comments (Replies, Post_Time, Username, Dest_Id, Content)
VALUES ('', SYSDATE, 'knikhil', '11', 'Well go if you want to really
eat.');
INSERT INTO comments (Replies, Post_Time, Username, Dest_Id, Content)
VALUES ('', TO_DATE('2019-01-02 10:00:00', 'yyyy-mm-dd hh24:mi:ss'),
'pprasun', '7', 'Happy new year in France.');
```

- **INSERTION OF TABLE Dest_Post**

```
INSERT INTO dest_post (Username, Dest_Id, Dest_Rating, Post_Time) VALUES
('pprasun', '1', '9', TO_DATE('2019-04-28 15:34:45', 'yyyy-mm-dd
hh24:mi:ss'));
INSERT INTO dest_post (Username, Dest_Id, Dest_Rating, Post_Time) VALUES
('pprasun', '2', '10', TO_DATE('2019-04-28 15:34:45', 'yyyy-mm-dd
hh24:mi:ss'));
INSERT INTO dest_post (Username, Dest_Id, Dest_Rating, Post_Time) VALUES
('pprasun', '3', '10', TO_DATE('2019-04-28 15:34:45', 'yyyy-mm-dd
hh24:mi:ss'));
INSERT INTO dest_post (Username, Dest_Id, Dest_Rating, Post_Time) VALUES
('rpawan', '1', '10', TO_DATE('2019-04-28 15:34:45', 'yyyy-mm-dd
hh24:mi:ss'));
INSERT INTO dest_post (Username, Dest_Id, Dest_Rating, Post_Time) VALUES
('rpawan', '2', '8', TO_DATE('2019-04-28 15:34:45', 'yyyy-mm-dd
hh24:mi:ss'));
INSERT INTO dest_post (Username, Dest_Id, Dest_Rating, Post_Time) VALUES
('rpawan', '3', '10', TO_DATE('2019-04-28 15:34:45', 'yyyy-mm-dd
hh24:mi:ss'));
INSERT INTO dest_post (Username, Dest_Id, Dest_Rating, Post_Time) VALUES
('rpawan', '6', '9', TO_DATE('2019-04-28 15:34:45', 'yyyy-mm-dd
hh24:mi:ss'));
INSERT INTO dest_post (Username, Dest_Id, Dest_Rating, Post_Time) VALUES
('rschumaker', '7', '8', TO_DATE('2019-04-28 15:34:45', 'yyyy-mm-dd
hh24:mi:ss'));
INSERT INTO dest_post (Username, Dest_Id, Dest_Rating, Post_Time) VALUES
('ssagar', '8', '9', TO_DATE('2019-04-28 15:34:45', 'yyyy-mm-dd
hh24:mi:ss'));
INSERT INTO dest_post (Username, Dest_Id, Dest_Rating, Post_Time) VALUES
('pprasun', '9', '5', TO_DATE('2019-04-28 15:34:45', 'yyyy-mm-dd
hh24:mi:ss'));
INSERT INTO dest_post (Username, Dest_Id, Dest_Rating, Post_Time) VALUES
('kkapoor', '10', '6', TO_DATE('2019-04-28 15:34:45', 'yyyy-mm-dd
```

```
hh24:mi:ss'));
INSERT INTO dest_post (Username, Dest_Id, Dest_Rating, Post_Time) VALUES
('knikhil', '11', '8', TO_DATE('2019-04-28 15:34:45', 'yyyy-mm-dd
hh24:mi:ss'));
```

- **INSERTION OF TABLE Follower_Followed_Member**

```
INSERT INTO follower_followed_member (Followed_Username,
Follower_Username) VALUES ('ecisneros', 'kkapoor');
INSERT INTO follower_followed_member (Followed_Username,
Follower_Username) VALUES ('ecisneros', 'knikhil');
INSERT INTO follower_followed_member (Followed_Username,
Follower_Username) VALUES ('ecisneros', 'pprasun');
INSERT INTO follower_followed_member (Followed_Username,
Follower_Username) VALUES ('ecisneros', 'rpawan');
INSERT INTO follower_followed_member (Followed_Username,
Follower_Username) VALUES ('ecisneros', 'ssagar');
INSERT INTO follower_followed_member (Followed_Username,
Follower_Username) VALUES ('kkapoor', 'ecisneros');
INSERT INTO follower_followed_member (Followed_Username,
Follower_Username) VALUES ('knikhil', 'rschumaker');
INSERT INTO follower_followed_member (Followed_Username,
Follower_Username) VALUES ('knikhil', 'pprasun');
INSERT INTO follower_followed_member (Followed_Username,
Follower_Username) VALUES ('knikhil', 'rpawan');
```

- **INSERTION OF TABLE Photo**

```
INSERT INTO photo (Photo_Id, Link, Visit_Dest_Id, Username) VALUES ('1',
'https://www.google.com/url?img', '1', 'pprasun');
INSERT INTO photo (Photo_Id, Link, Visit_Dest_Id, Username) VALUES ('2',
'https://www.google.com/url?img', '1', 'pprasun');
INSERT INTO photo (Photo_Id, Link, Visit_Dest_Id, Username) VALUES ('3',
'https://www.google.com/url?img', '1', 'pprasun');
INSERT INTO photo (Photo_Id, Link, Visit_Dest_Id, Username) VALUES ('4',
'https://www.google.com/url?img', '6', 'rpawan');
```

- **INSERTION OF TABLE Wish_Dest**

```
INSERT INTO wish_dest (Username, Wish_dest) VALUES ('ecisneros', '1');
INSERT INTO wish_dest (Username, Wish_dest) VALUES ('ecisneros', '3');
INSERT INTO wish_dest (Username, Wish_dest) VALUES ('knikhil', '3');
INSERT INTO wish_dest (Username, Wish_dest) VALUES ('rschumaker', '6');
```

- **INSERTION OF TABLE Likes_Dislikes_Comment**

```
INSERT INTO likes_dislikes_comment (Username, Dest_Id, Post_Time,
Member_Username, Like_Dislike) VALUES ('pprasun', '7', TO_DATE('2019-01-02
10:00:00', 'yyyy-mm-dd hh24:mi:ss'), 'rpawan', '1');
INSERT INTO likes_dislikes_comment (Username, Dest_Id, Post_Time,
Member_Username, Like_Dislike) VALUES ('pprasun', '7', TO_DATE('2019-01-02
10:00:00', 'yyyy-mm-dd hh24:mi:ss'), 'rschumaker', '1');
INSERT INTO likes_dislikes_comment (Username, Dest_Id, Post_Time,
Member_Username, Like_Dislike) VALUES ('rschumaker', '7',
TO_DATE('2019-04-28 15:34:45', 'yyyy-mm-dd hh24:mi:ss'), 'pprasun', '1');
INSERT INTO likes_dislikes_comment (Username, Dest_Id, Post_Time,
Member_Username, Like_Dislike) VALUES ('pprasun', '7', TO_DATE('2019-01-02
10:00:00', 'yyyy-mm-dd hh24:mi:ss'), 'knikhil', '0');
```

- **INSERTION OF TABLE Dest_Desc_Modified**

```
INSERT INTO dest_desc_modified (Pref_Username, Dest_Id, Date_Modified)
VALUES ('knikhil', '5', SYSDATE);
INSERT INTO dest_desc_modified (Pref_Username, Dest_Id, Date_Modified)
VALUES ('rschumaker', '6', SYSDATE);
```

- **INSERTION OF TABLE Business_Partner_Rating**

```
INSERT INTO business_partner_rating (Bs_Id, Rate, Username) VALUES ('1',
'9', 'ecisneros');
INSERT INTO business_partner_rating (Bs_Id, Rate, Username) VALUES ('2',
'6', 'pprasun');
```

Till now we have finished the process of creating tables and database states.

2.2 Creation of Views (including answers for Question d.)

View 01: Retrieve all the restaurants in New York city, US.

```
Create View view1 AS Select DEST_NAME from destination
wheredestination_type_Id=2 AND State_Name = 'New York' AND Country_Id =
(select Country_Id from country where country.Country_Name='United
States');
```

View 02: Retrieve countries and the members who have visited them.

```
Create View subview2 AS select * from visited_dest V Join destination D On
V.Visited_Dest_Id=D.Dest_Id;

Create View view2 AS select Dest_Name,Username,Country_Name from subview21
s Join country C On  s.country_Id=C.Country_Id;
```

View 03: Retrieve itineraries to France.

```
Create View view3 AS select *  from Trip_Plans
where Trip_Id in(select Trip_id from Trip_Plan_Includes
where dest_Id in(select dest_Id from Trip_Plan_Includes where Dest_Id in
(select dest_id from destination where country_id =(select Country_Id from
country where Country_Name ='FRANCE'))));
```

View 04: Retrieve the country(s) visited by whom also visits/visited US in the same trip (within 15 days).

```
Create view  subview41 as select * from visited_dest where end_date >=
(CURRENT_DATE - 15);

Create view view4 as Select Country_Name from Country where Country_Id
In(Select Country_Id from destination where Dest_Id in(Select
Visited_Dest_Id  from subview41 where username in(Select
distinct(username) from subview41 where Visited_Dest_Id in (Select
Visited_Dest_Id from visited_dest  where Visited_Dest_Id in (select
Dest_id from destination where Country_Id =(select Country_Id from country
where Country_name='United States')))) AND Visited_Dest_Id != 1)) ;
```

2.3 Creation of SQL Queries (Answer for Question f)

Now we give out the SQL Queries for each of 14 questions listed in Question e. as follows:

Query 1. Retrieve the names, addresses, and estimated-prices of the 3 most popular restaurants in New York city, US.

```
Create View V1_Q1
As
Select
D.Dest_id,AVG(Dest_rating) AS AVG_RATING
from
Destination D full Outer Join Dest_post DP
On
D.dest_id= Dp.dest_id
Group by D.Dest_id
Order by AVG(Dest_rating);


Create View V1_Q2
As
select
Dest_Name,Street_No,Zip_code,City_Name,
State_Name,Country_Id,Cost_Price,AVG_RATING
from
V1_Q1 FULL OUTER JOIN Destination D
on
D.dest_id=V1_Q1.dest_id;

select * from V1_Q2 where rownum<=3;
```

Query 2. Retrieve the username, status (*regular* or *preferred*), and ranking of the member who has uploaded the most pictures.

```
Create view query21 as SELECT COUNT(USERNAME) as count, USERNAME
FROM photo GROUP BY USERNAME;

Create View query22 As Select username, Member_Type_Id from member
where username in (Select username from query21 where count in
(select max(count) from query21));
```

```
Select Username,mt.Member_Type_Id ,Member_Type_name from query22
q22 Join member_type Mt on q22.Member_Type_Id =mt.Member_Type_Id ;
```

Query 3. For each country in the system, retrieve the username, address and the number of followers of the members who live in this country and has the most followers.

```
create view subview31 as select m.country_id, f.followed_username,
f.follower_username from follower_followed_member f join member m on
f.followed_username = m.username;

create view subview32 as select m.country_id as follower_country_id,
f.country_id as followed_country_id, f.followed_username,
f.follower_username from subview31 f join member m on f.follower_username
= m.username;

create view subview33 as SELECT  followed_username,
COUNT(followed_country_id) AS total_follower FROM subview32 GROUP BY
followed_username;

create view subview34 as select m.country_id, m.Street_No, m.Zip_code,
m.City_Name, m.State_Name, f.followed_username, f.total_follower from
subview33 f join member m on f.followed_username = m.username;

 select * from subview34 order by total_follower FETCH FIRST (select
count(*) from country) ROWS ONLY;
```

Query 4. Retrieve the names, addresses, and estimated-prices of the 3 most popular restaurants in New York city, US.

```
Create View V1_Q1
As
Select
D.Dest_id,AVG(Dest_rating) AS AVG_RATING
from
Destination D full Outer Join Dest_post DP
On
D.dest_id= Dp.dest_id
Group by D.Dest_id
Order by AVG(Dest_rating);
```

```
Create View V1_Q2
As
select
Dest_Name,Street_No,Zip_code,City_Name,
State_Name,Country_Id,Cost_Price,AVG_RATING
from
V1_Q1 FULL OUTER JOIN Destination D
on
D.dest_id=V1_Q1.dest_id;

select * from V1_Q2 where rownum<=3;
```

Query 5. For all country(s) visited by whom also visits/visited US in the same trip (within 15 days), retrieve the distinct names of the countries.

```
select * from View4;
```

Query 6. Retrieve the contact information of the business owner who owns the most expensive restaurant and the owner who owns the most assets in the system.

```
Create View Business_Partner_Q6
 AS select Bs_id,Count(dest_id) As Number_Of_locations
    from Destination group by Bs_id order by count(dest_id) DESC;
Create View Business_Partner_Q6_1 As select Bs_id from Business_Partner_Q6
where rownum=1;
Create View Business_Partner_Q6_2
 AS select Bs_id,Max(Cost_price) As
    Max_Cost_Price from Destination
    group by Bs_id order by Max(Cost_price) DESC;
Create View Business_Partner_Q6_3 AS select Bs_id from
Business_Partner_Q6_2 where rownum=1;

Select DISTINCT(Contact_Person),D.Bs_id,Phone from Destination D Join
Business_Partner B ON (D.BS_id=(Select Bs_Id from Business_Partner_Q6_3)
OR  D.Bs_Id =(Select Bs_Id from Business_Partner_Q6_1 )) AND  B.Bs_Id =
D.Bs_Id AND Destination_Type_Id = 2 ;
```

Query 7. Retrieve the names of the 5 most desirable France cities to visit.

```
Create view query7 as Select dest_id from dest_post where dest_id in
(Select dest_id from destination where country_id = 2) AND ROWNUM <= 5
order by DEST_RATING DESC ;
```

```
Select Distinct(city_name) from destination where dest_id in (select *
from query7 );
```

Query 8. Retrieve the username and status of the member who either posted any comments or created any itinerary between 12/01/2018 and 1/31/2019.

```
Create View Q8_Comments

AS

select Username

from Comments

where

(Post_Time)>TO_DATE('2018-12-01 00:00:00', 'yyyy-mm-dd hh24:mi:ss')

And

(Post_Time)<TO_DATE('2019-01-31 00:00:00', 'yyyy-mm-dd hh24:mi:ss')


Create view Q8_Trip

AS

select Created_by

from Trip_Plans

where

Trip_Start<=TO_DATE('2018-12-01 00:00:00', 'yyyy-mm-dd hh24:mi:ss')

OR

(Trip_Start )<=TO_DATE('2019-01-31 00:00:00', 'yyyy-mm-dd hh24:mi:ss');

Select Username,M.Member_Type_id,MT.Member_Type_Name

from

Member M join Member_Type MT

ON
```

```
MT.Member_Type_Id=M.Member_Type_Id

AND

(M.Username In(Select Username From Q8_Comments)

Or

M.Username In (Select * from Q8_Trip))Order by(Username);
```

Query 9. For each member who has visited all the states/provinces in France, retrieve the maximum, minimum and average daily cost per person, per day across all these related itineraries (**considering restaurant and attraction cost only*).

Create View Q91V As select Dest_id from destination where Country_id =(Select Country_Id from country where Country_Name='FRANCE') AND Destination_Type_id IN(2,1);

Create View Q92V AS select Username,Count(DISTINCT(visited_Dest_id)) AS No_Of_Dest from Visited_Dest where visited_Dest_id IN (select Dest_id from Q91V) Group by Username Order by No_Of_Dest DESC;

Create View Q93V As select Username from Q92V where No_Of_Dest=(select Count(Dest_Id) from Q91V);

Create View Q94V
AS
select VD.Username,D.Dest_Id,D.Cost_Price,Start_Date,End_Date
From
Visited_dest VD JOIN DESTINATION D
On VD.Visited_Dest_Id =D.Dest_ID
AND
username IN (Select Distinct(Username) from Q92V);

Create View Q95V AS select Username,D.Dest_Id,D.City_Name ,Q94V.Cost_Price from Q94V join Destination D on D.Dest_id=Q94V .Dest_id;

Create View Q96V AS select AVG(COST_PRICE) AS AVG_COST ,Max(COST_PRICE) AS MAx_COST ,MIN(COST_PRICE) AS MIN_COST from Q95V ;

Create View Q97V as select Distinct(Username), AVG_COST , MAX_COST , MIN_COST from Q95V Join Q96V on Avg_Cost>0 ;

Query 10. For each country, retrieve the total number of original comments, the total number of related itineraries, and the total number of members from this country, and the total number of members who have visited.

```
Create view v11 AS select D.Country_Id,Count(Co.dest_id) AS Comment_Count
from Destination D Full Outer Join  Comments Co on Co.dest_id=D.dest_id
Group by Country_Id;

Create view v22 AS select   D.Country_Id, Count(Trip_Id) As Trip_Count
from Destination D Full Outer Join Trip_Plan_Includes TPI  On
TPI.dest_id=D.dest_id Group by country_id;
Create view v33 AS select  Country_Id,Count(Username) As
Members_From_Country from  Member Group by Country_id;

Create view v44 AS select  Country_id ,Count(VD.Username) As
Members_Visited_Country from Visited_dest VD Full Outer Join Destination D
ON VD.Visited_dest_Id = D.dest_Id Group by Country_id;

Create View v55 As select
v33.Country_id,Members_From_Country,Members_Visited_Country from v33 FULL
OUTER JOIN v44 on v33.Country_id=v44.Country_id;

Create View v66 As select v11.Country_id, Comment_Count,Trip_Count  from
v11 FULL OUTER JOIN v22 on v11.Country_id=v22.Country_id;

Create View v77 As select
V66.Country_id,Comment_Count,Trip_Count,Members_From_Country,Members_Visit
ed_Country from v55 FULL OUTER JOIN v66 on v55.Country_id=v66.Country_id;

Create view v88 As select
Country_Name,C.Country_id,Comment_Count,Trip_Count,Members_From_Country,Me
mbers_Visited_Country From Country C FULL OUTER JOIN v77 on
v77.Country_id=C.Country_id;
```

3. Conclusion

In this report we have modified the EER diagram and relational schemas for XXX Database according to the requirement of Phase III. We also have given dependency diagrams for each relational schema in the database. Then we created tables for each relational schema and write the SQL statements for the views and queries listed in Question d. and Question e..