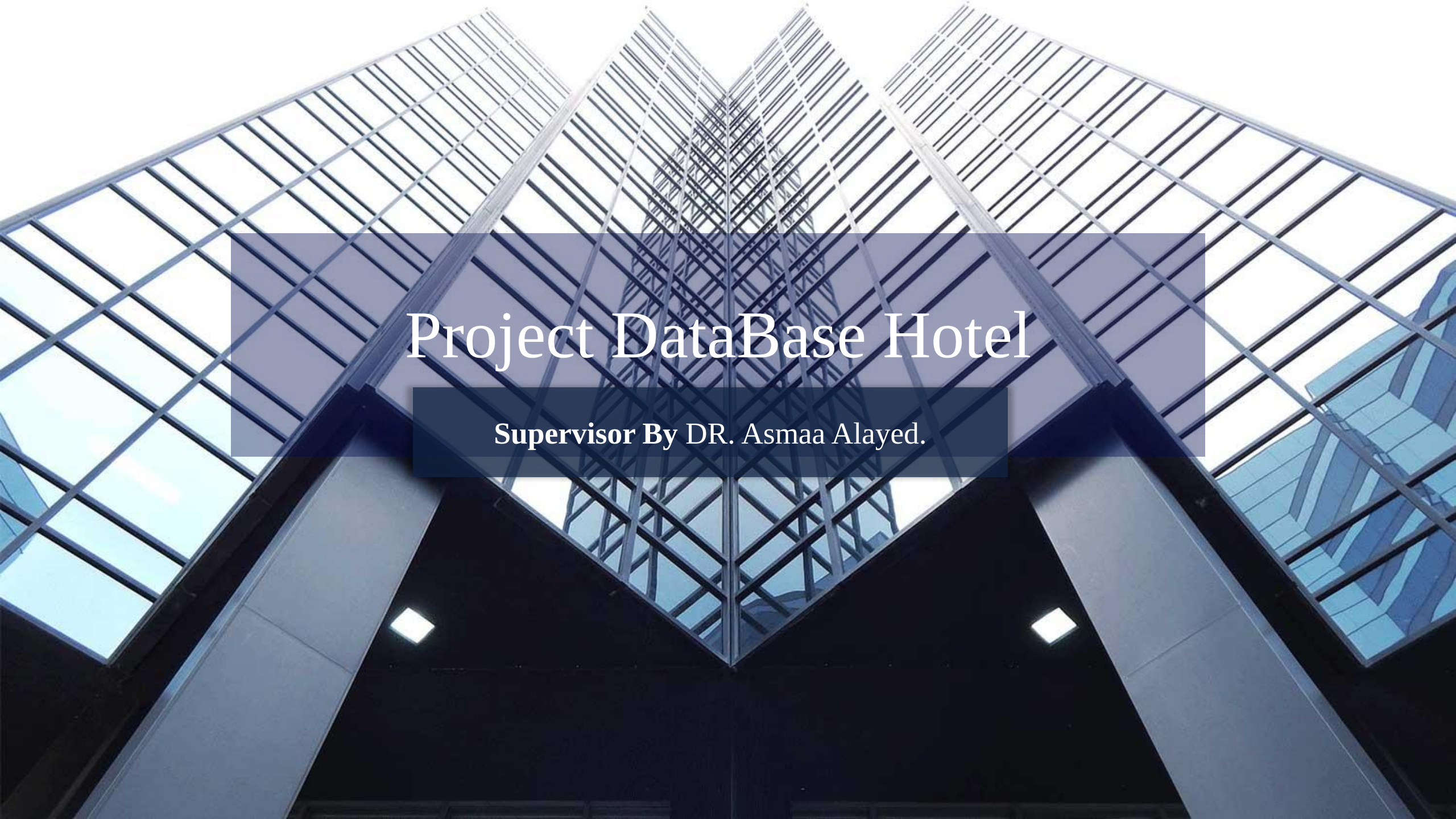

Project DataBase Hotel

Supervisor By DR. Asmaa Alayed.

Students’ names of project

Leader

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Project Phase

1

Phase 1

Conceptual Design

2

Phase 2

Logical Design

3

Phase 3

Physical Design

4

Phase 4

Collection of all previous phases.

1

Phase 1

Conceptual Design

The Description

An Investment company named Wyndham International Hotel Chain (WIHC) plans to create a database system for its new hotels in Saudi Arabia specifically in Jeddah city, to keep track of the information about its employees, guests, and Reservations.

• The Hotel has name, hotel Id, location, star rate, and many branches. Also, the hotel consists of employees service the guests, and Reservations and owns a number of rooms, where receptionist employee are assigned to confirm reservations.

• Each employee has a ID, first name, last name, address, phone number and salary.

• One of the most important employees has in the hotel is the receptionist, each receptionist confirms one or more reservations for more than one guest at the time his work, Also each receptionist work on hotel has a name, Email and work time.

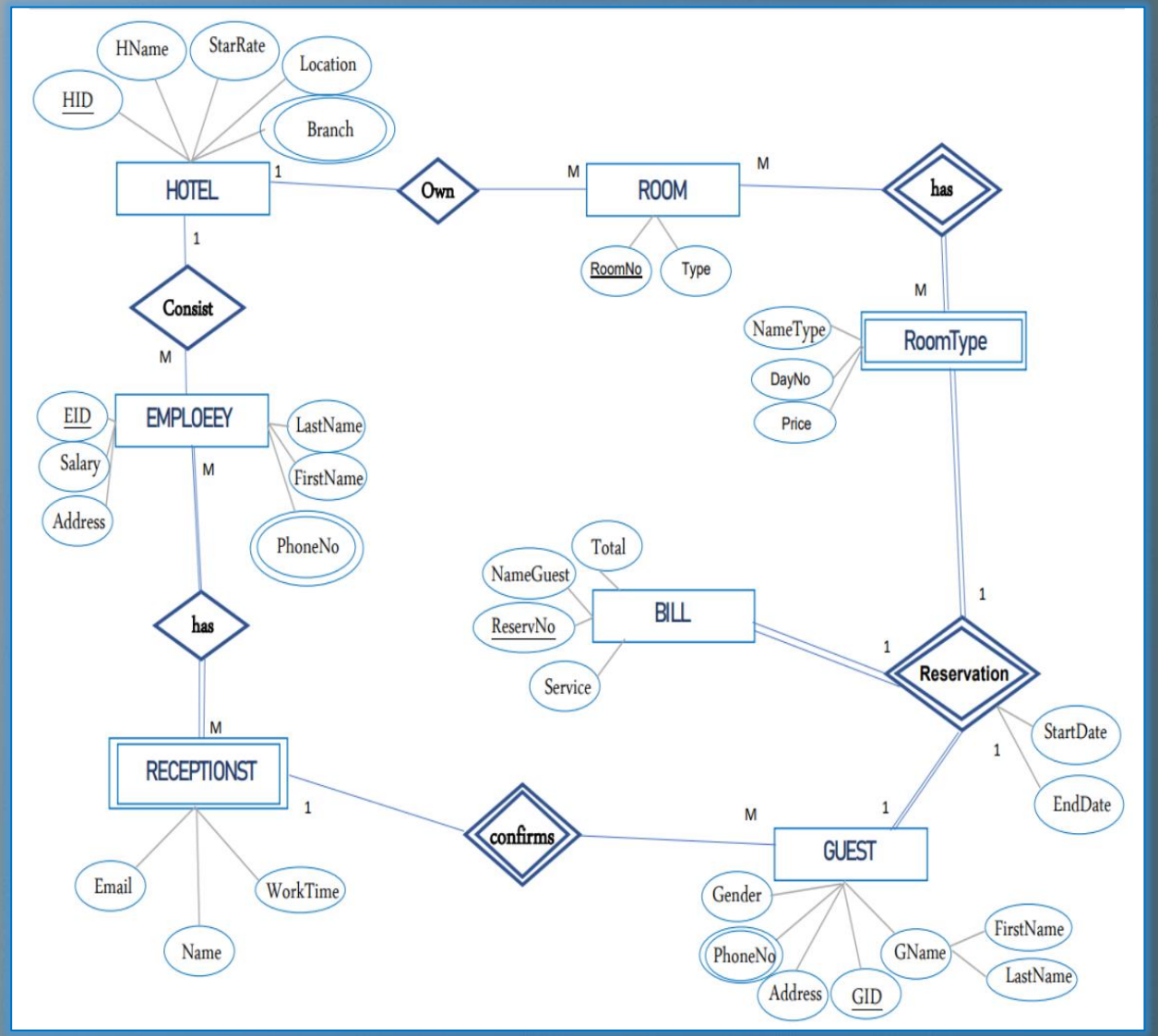
• In WIHC hotels have many guests from all over the country, And for each guest has an ID, first name, last name, address, phone number, gender.

• In hotel, each guest can be make reservation specifically for the room type of his choice, and the reservation in hotel must have a start date and end date to issue bill containing the guest's name, reservation number, total amount of the reservation and services.

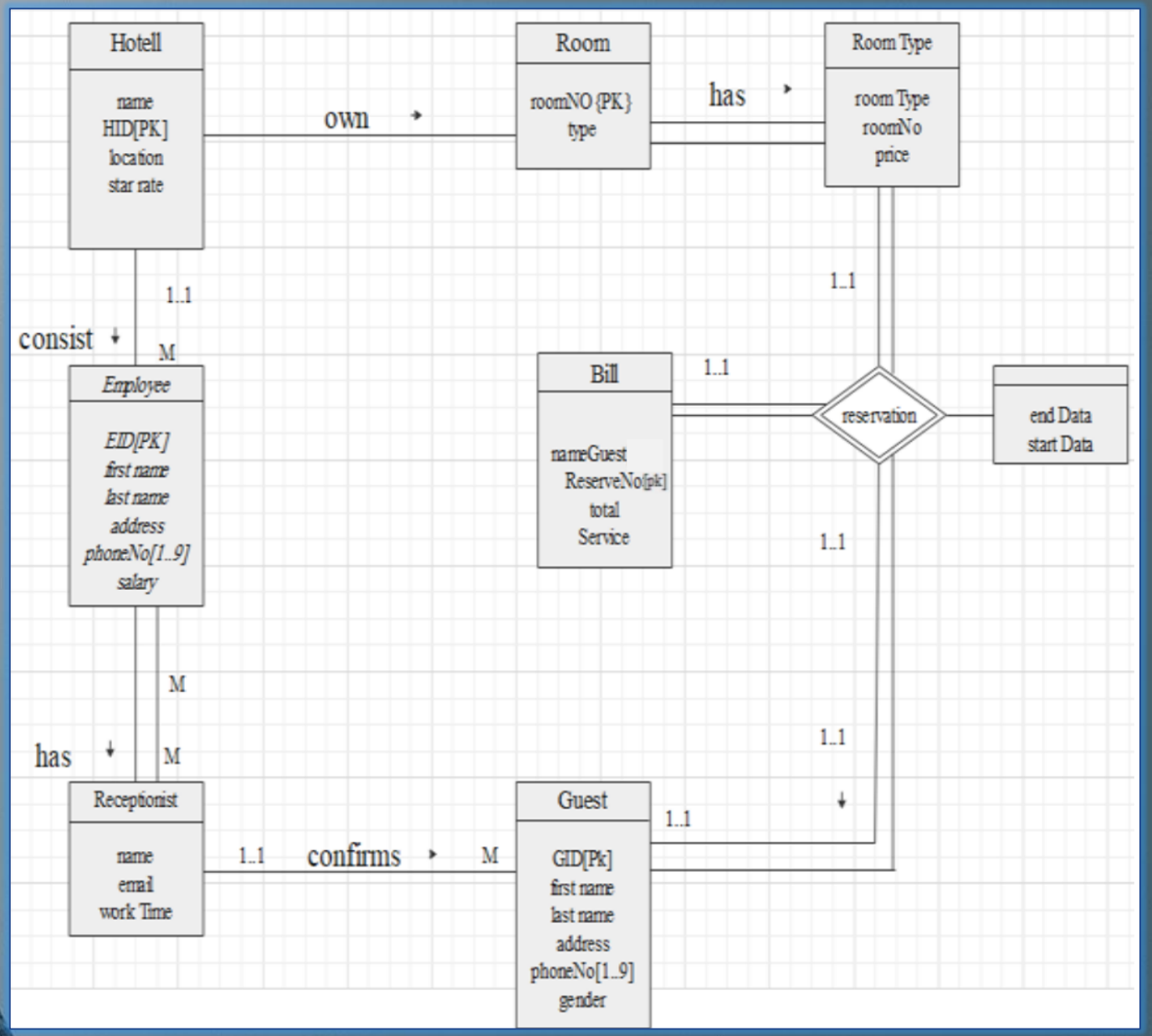
• Also, each room in the Hotel has a number of rooms and different room types, and the room type has room name, room number and price.

• The bill according to the room type they have reserved, And each reservation is confirmed with only one billed.

Chen's Notation



UML Notation



2
Phase 2
Logical Design

Relational Schema

STEP 1

Mapping of Regular Entity Type

HOTEL

HID	HName	StarRate	Location

ROOM

RoomNo	Type

BILL

Total	NameGuest	ReswNo	Service

GUEST

Gender	Address	GID	FirstName	LastName

EMPLOEEY

EID	Salary	Address	FirstName	LastName

STEP 2

Mapping of Weak Entity Type

RoomType

NameType	DayNo	Price	RoomNo

RECEPTIONST

Email	Name	WorkTime	GID

STEP 3

Mapping of Binary 1:1 Relationship Type

No binary 1:1 relationship in the ER Model

STEP 4

Mapping of Binary 1:M Relationship Type

Relationship: Consist

EMPLOEEY

EID	Salary	Address	FirstName	LastName	HID

Relationship: Own

ROOM

RoomNo	Type	HID

Relational Schema

STEP 5

Mapping of Binary M:N Relationship Type

Relationship: Has

RECEPTIONST

Email	Name	WorkTime	EID

Relationship: Has

RoomType

NameType	DayNo	Price	RoomNo

STEP 6

Mapping of Multivalued Attributes

HOTEL_Branch

HID	Branch

GUEST_PhoneNo

GID	PhoneNo

EMPLOEEY_PhoneNo

EID	PhoneNo

STEP 7

Mapping of N-ary Relationship Types

Reservation

GID	ReservNo	NameType	DayNo	Price	SartDate	EndDate

Final Mapping

HOTEL

HID	HName	StarRate	Location

BILL

Total	NameGuest	ResweNo	Service

GUEST

Gender	Address	GID	FirstName	LastName

EMPLOEEY

EID	Salary	Address	FirstName	LastName	HID

ROOM

RoomNo	Type	HID

RECEPTIONST

Email	Name	WorkTime	EID

RoomType

NameType	DayNo	Price	RoomNo

HOTEL_Branch

HID	Branch

GUEST_PhoneNo

GID	PhoneNo

EMPLOEEY_PhoneNo

EID	PhoneNo

Reservation

GID	ReservNo	NameType	DayNo	Price	SartDate	EndDate

Normalization

❖ Second normal form 2NF:

Second normal form 2NF:

HOTEL

HID	HName	StarRate	Location

BILL

Total	NameGuest	ReservNo	Service

GUEST

Gender	Address	GID	FirstName	LastName

EMPLOEEY

EID	Salary	Address	FirstName	LastName	HID

ROOM

RoomNo	Type	HID

RECEPTIONST

Email	Name	WorkTime	EID

RoomType

NameType	DayNo	Price	RoomNo

HOTEL_Branch

HID	Branch

GUEST_PhoneNo

GID	PhoneNo

❖ First normal form NF1:

The schema is already in final map

EMPLOEEY_PhoneNo

EID	PhoneNo

Reservation_Guest

GID	ReservNo	SartDate	EndDate

Reservation-Info

ReservNo	NameType	DayNo	Price

❖ Third Normal Form NF3:

The No Transitive Dependency

CREATE SCHEMA

```
5 •    CREATE SCHEMA `hotel_phase3` ;
```

CREATE TABLE

INSERT

UPDATE

DELETE

```
279 •    insert into Reservation_Info
280      values
281      ('876','Hair stylist','9-Dec-01','36.6'),
282      ('222','Washing','10-Dec-01','65.4'),
283      ('111','cleaning','22-Dec-01','52.3'),
284      ('333','Sauna','9-Dec-02','43.6'),
285      ('113','car rental','7-Dec-01','76.2'),
286      ('622','Ironing','20-Dec-01','87.6'),
287      ('262','Concerts','24-Dec-01','98.1');
288
```

3
Phase 3
Physical Design

```
308 •   SELECT *
309     FROM guest
310     ORDER BY Gender,Address DESC;
311
312
313 •   SELECT *
```

Result Grid | Filter Rows: | Edit:

Gender	Address	GID	FirstName	LastName
Female	Riyadh	12344	alhanof	Saad
Female	Riyadh	12346	Roba	Abdullah
Female	Makkah	13578	Reema	Abdullah
Male	Yanbu	12337	Saad	Hamad
Male	Makkah	12333	Ahmed	Faisal
Male	Jeddah	12345	Abdullah	Ahmed
Male	Jazan	13567	Faisal	Ahmed
NULL	NULL	NULL	NULL	NULL

CREATE SCHEMA

INSERT

UPDATE

DELETE

```
343 •  UPDATE EMPLOYEEY
344    SET FirstName = 'Roaa', LastName = 'Zaid', Address = 'jeddah'
345    WHERE EID = '123886';
346
```

Result Grid | Filter Rows: | Edit: | Export/Import:

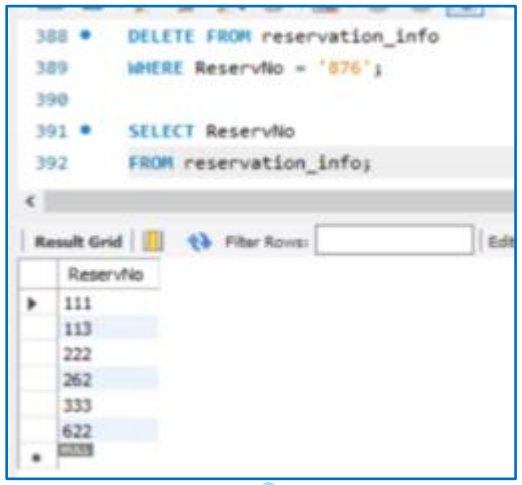
EID	Salary	Address	FirstName	LastName	HID
112356	3000.00	Jeddah	alhanof	Faisal	12234502
123116	4000.00	Jeddah	Thekra	Hamad	12464567
123336	3000.00	Jeddah	Nurah	Khalid	12398567
123443	3000.00	Jeddah	Reema	Ahmed	12297567
123453	4000.00	Jeddah	Roba	Abdullah	12234567
123886	4000.00	jeddah	Roaa	Zaid	10534567
126546	3000.00	Jeddah	Asma	Saad	12990767
NULL	NULL	NULL	NULL	NULL	NULL

CREATE SCHEMA

INSERT

UPDATE

DELETE



CREATE SCHEMA

INSERT

UPDATE

DELETE

1

```
427 •  SELECT FirstName, LastName, Salary
428    FROM EMPLOYEEY
429    WHERE Salary > (SELECT AVG(Salary) FROM EMPLOYEEY);
430
```

Result Grid | Filter Rows: | Export: | Wrap Cell Content:

FirstName	LastName	Salary
Thekra	Hamad	4000.00
Roba	Abdullah	4000.00
Roaa	Zaid	4000.00

2

```
399
400 •  SELECT *
401    FROM HOTEL
402    ORDER BY HID,HName,StarRata DESC;
```

Result Grid | Filter Rows: | Edit:

HID	HName	StarRata	Location
10534567	WIHC	five	AlRahmaniyah
12234502	WIHC	five	ALTahlia
12234567	WIHC	four	Alhmra
12297567	WIHC	five	Alhamdniya
12398567	WIHC	five	Alruwduh
12464567	WIHC	seven	AlSafa
12990767	WIHC	seven	AlAzizia

3

```
408 •  SELECT HID,StarRata,COUNT(StarRata) AS StarRataOfHotel
409    FROM HOTEL
410    GROUP BY StarRata
411    ORDER BY HID DESC;
```

Result Grid | Filter Rows: | Export: | Wrap Cell Content:

HID	StarRata	StarRataOfHotel
12464567	seven	2
12234567	four	1
10534567	five	4

4

```
416 •  SELECT HID,StarRata,COUNT(StarRata) AS StarRataOfHotel
417    FROM HOTEL
418    GROUP BY StarRata
419    HAVING COUNT(StarRata)>2 ;
```

Result Grid | Filter Rows: | Export: | Wrap Cell Content:

HID	StarRata	StarRataOfHotel
10534567	five	4

5

```
326 •   SELECT *
327     FROM hotel_branch
328     ORDER BY 1 DESC;
329
330
331 •   SELECT *
```

Result Grid | Filter Rows:

HID	Branch
12990767	7
12464567	5
12398567	2
12297567	3
12234567	1
12234502	4
10534567	6

6

```
450 •   SELECT B.ReservNo, NameGuest, Total ,i.ReservNo, NameType, DayNo
451     FROM  bill B, reservation_info i
452     WHERE B.ReservNo = i.ReservNo
453     ORDER BY NameGuest ASC;
```

Result Grid | Filter Rows: | Export: | Wrap Cell Content:

ReservNo	NameGuest	Total	ReservNo	NameType	DayNo
111	WIHC	5678.00	111	cleaning	3
113	WIHC	1246.00	113	car rental	30
222	WIHC	2680.00	222	Washing	2
262	WIHC	1400.00	262	Concerts	5
333	WIHC	1300.00	333	Sauna	7
622	WIHC	3990.00	622	Ironing	1

7

```
460 •   SELECT FirstName, LastName
461     FROM GUEST
462     WHERE GID IN ( SELECT GID
463                    FROM reservation_guest
464                    WHERE ReservNo IN (SELECT ReservNo
```

Result Grid | Filter Rows: | Export: | Wrap Cell Content

FirstName	LastName
Ahmed	Faisal
Saad	Hamad
Reema	Abdullah

8

```
308 •   SELECT *
309     FROM guest
310     ORDER BY Gender,Address DESC;
311
312
```

Result Grid | Filter Rows: | Edit:

Gender	Address	GID	FirstName	LastName
Female	Riyadh	12344	alhanof	Saad
Female	Riyadh	12346	Roba	Abdullah
Female	Makkah	13578	Reema	Abdullah
Male	Yanbu	12337	Saad	Hamad
Male	Makkah	12333	Ahmed	Faisal
Male	Jeddah	12345	Abdullah	Ahmed
Male	Jazan	13567	Faisal	Ahmed

```
303 •  SELECT *
304    FROM EMPLOYEEY
305    ORDER BY FirstName,LastName DESC;
306
```

Result Grid | Filter Rows: | Edit:

EID	Salary	Address	FirstName	LastName	HID
112356	3450.00	Jeddah	alhanof	Faisal	12234502
126546	3450.00	Jeddah	Asma	Saad	12990767
123336	3450.00	Jeddah	Nurah	Khalid	12398567
123443	3450.00	Jeddah	Reema	Ahmed	12297567
123886	4000.00	jeddah	Roaa	Zaid	10534567
123453	4000.00	Jeddah	Roba	Abdullah	12234567
123116	4000.00	Jeddah	Thekra	Hamad	12464567
NULL	NULL	NULL	NULL	NULL	NULL

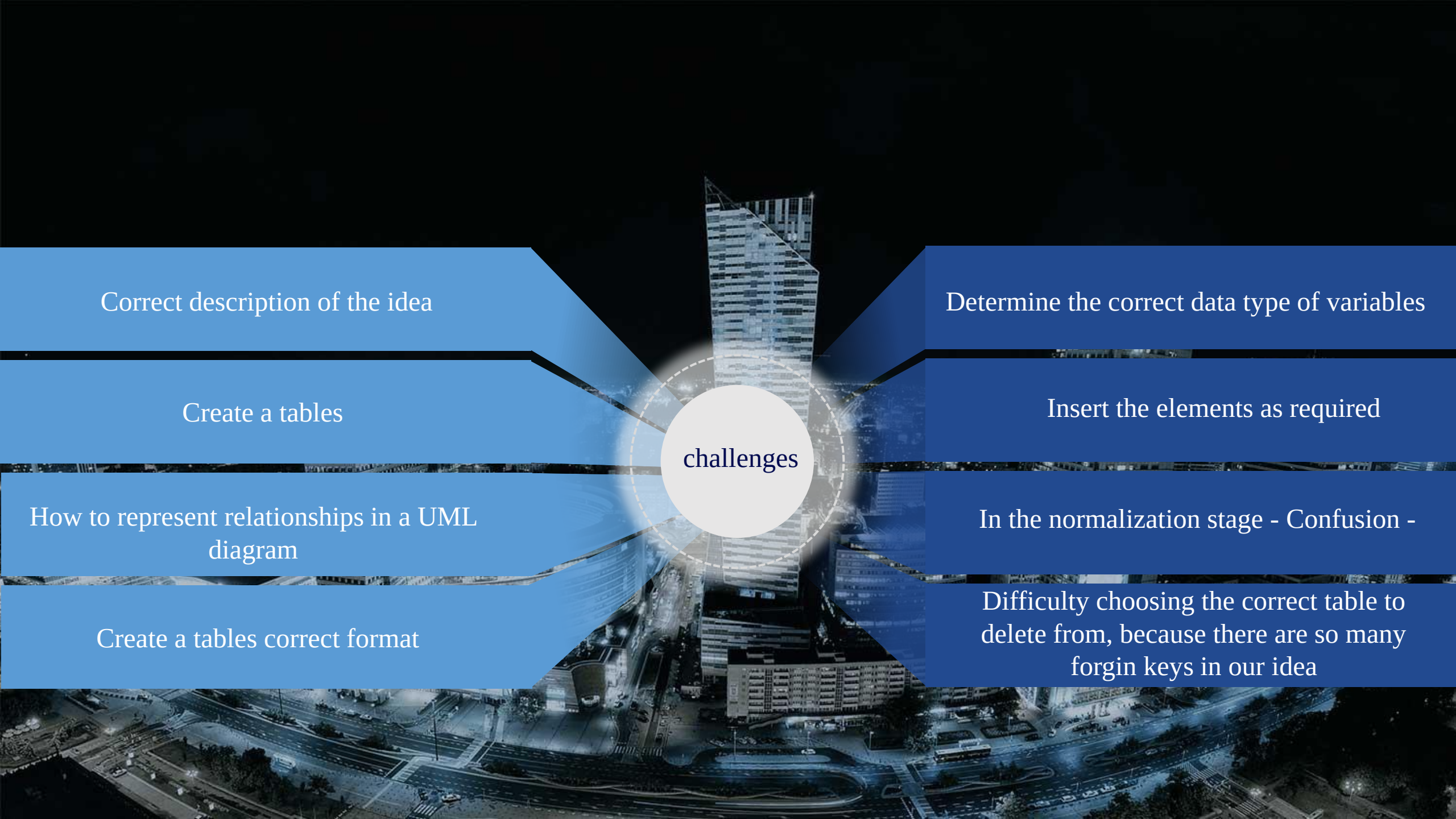
9

10

```
298 •  SELECT *
299    FROM BILL
300    ORDER BY Total DESC;
301
```

Result Grid | Filter Rows: | Edit:

Total	NameGuest	ReservNo	Service
7000.00	WIHC	876	Breakfast
5678.00	WIHC	111	Dinner
3990.00	WIHC	622	Dinner
2680.00	WIHC	222	Lunch
1400.00	WIHC	262	Breakfast
1300.00	WIHC	333	Washing clothes
1246.00	WIHC	113	Dinner
NULL	NULL	NULL	NULL


Correct description of the idea
Create a tables
How to represent relationships in a UML diagram
Create a tables correct format
challenges
Determine the correct data type of variables
Insert the elements as required
In the normalization stage - Confusion -
Difficulty choosing the correct table to delete from, because there are so many forgin keys in our idea

THANK YOU