28/07/25

TASK-1

Title: conceptual design using ER Model. Hotel management system

steps involved in creating ER diagram.

step1:- Problem understanding & requirement analysis.

* Analyze the real world application: Hotel management system.
* understand the domain: costmer registration.
* room reservation and availability.

step2:

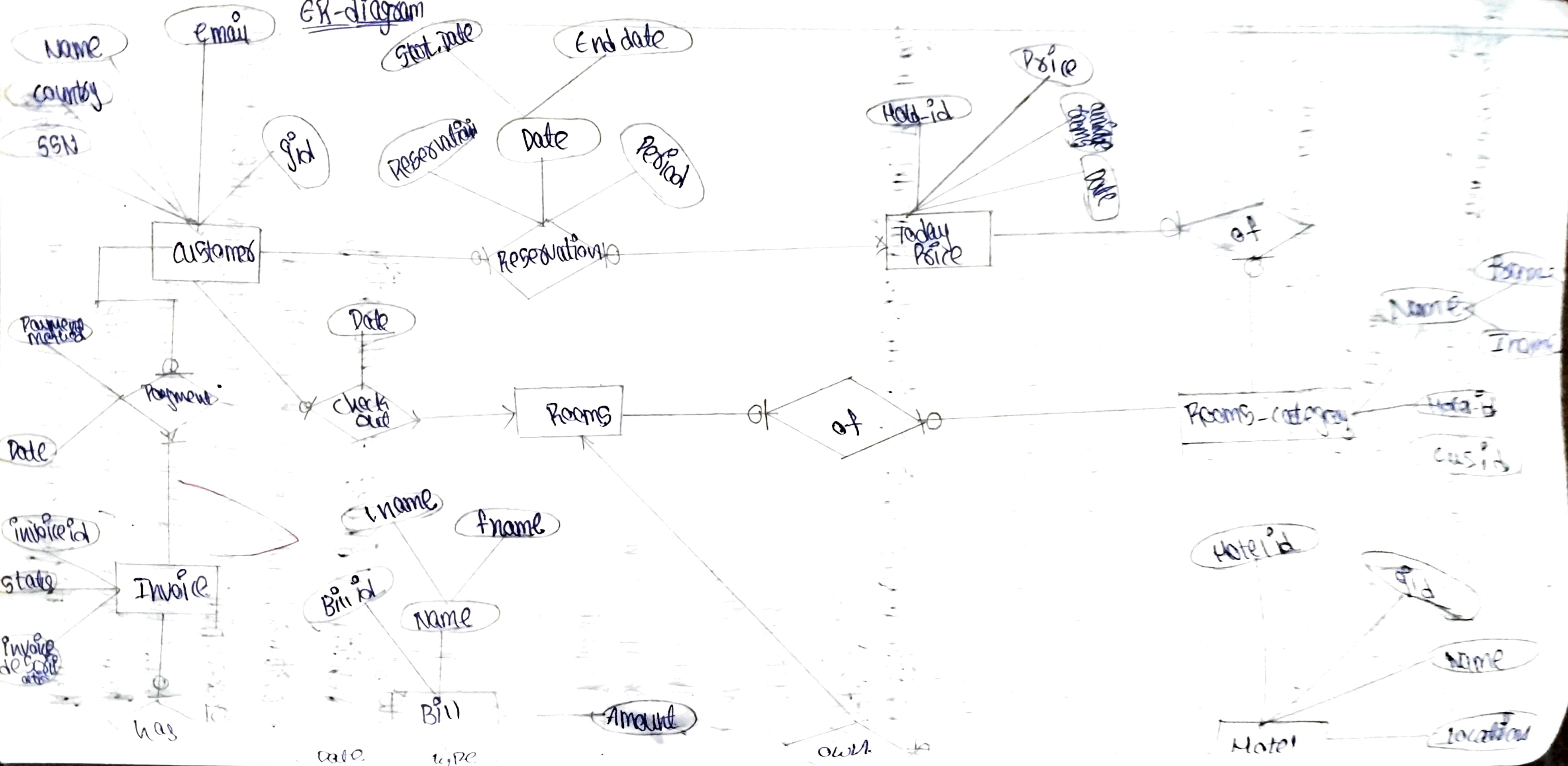
Identify major entities from the diagram, the main entities are:

* customer
* Reservation
* Hotel
* Room - category
* Payment
* Invoice
* Bill
* Tody Price

step3:

Identify Attributes for each entity.

* customer: Name, Email, country, SSN, Gid
* Reservation: Reservation-id, start Date., End date., Date, Period
* Hotel: Hotel-id, Name, location, Gid
* Room: Room-id, check, out, Date.
* Room - category: Room-id, Name, Hotel-id, Gid


ER-diagram
Name
country
SSN
email
id
Customer
Start date
End date
Reservation
Date
Period
Reservation
Hold-id
Price
Date
Today Price
of
Name
Payment method
Payment
Date
check out
Date
Rooms
of
Rooms_category
cus id
invoice id
state
Invoice
Invoice
has
lname
fname
Bill id
Name
Bill
Amount
date
type
own
Hotel id
id
Name
location
Hotel

* today_Price : Data, Price, available rooms.
* Payment : Data, Payment method
* Invoice : invoice id, status, invoice description
* Bill : Bill_id, Name, Data, type, Amount

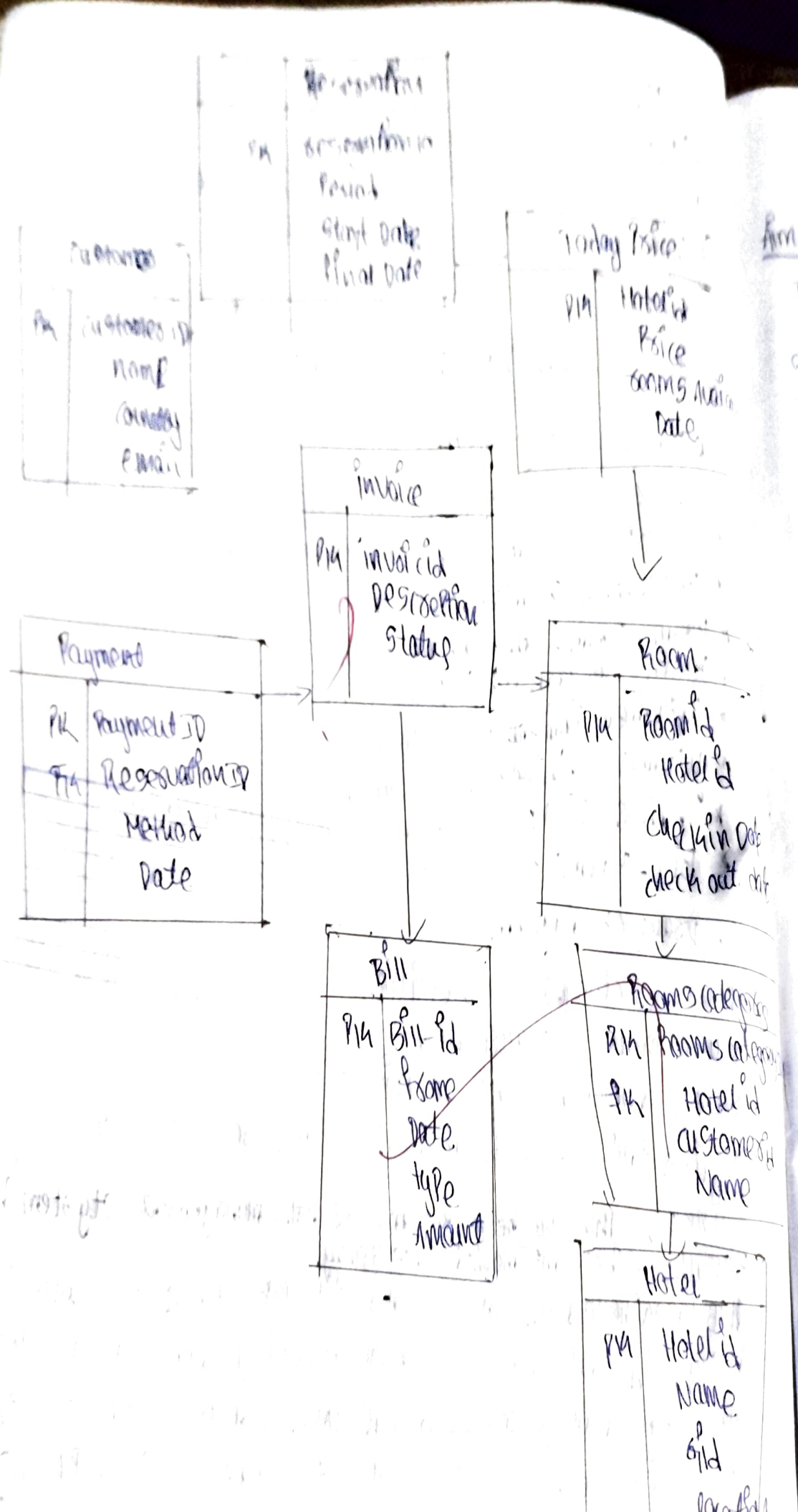
Step 4 :
Define relationships Between Entities

Customer - Reservation :
one-to-many (Customer can make many reservations)
* Reservation - today Price : linked via date
* Reservation - Rooms : one-to-many
* Room - Room_category : many-to-one
* Room_category - Hotel : many-to-one
* customer - Payment : one-to-many
* customer - invoice : one-to-many
* invoice - Bill : one-to-one
* Bill - Rooms : one-to-one

5. Draw ER diagram
* use rectangles for entities
* use ovals for attributes
* use diamonds for relationship
* link entities with attributes and relationship using lines,

VELTECH	
EX No.	1
PERFORMANCE (5)	5
RESULT AND ANALYSIS (5)	5
VIVA VOCE (5)	5
RECORD (5)	-
TOTAL (20)	15
SIGN WITH DATE	28/3/25

Result :- thus the ER diagram for hotel management system has been implemented sucessfully.
This task helped us understand the importance of conceptual design in data base management, using draw.io, we were able to visually model a real time hotel ER system into a ER diagram, which form the foundation for Phase 2


Payment
PK Payment ID
FK Reservation ID
Method
Date
Invoice
PK invoice id
Description
Status
Room
PK Room id
Hotel id
Check in Date
Bill
PK Bill id
Name
Date
type
Amount
Hotel
PK Hotel id
Name
GM id

1.2 Convert ER diagram into Relational model

Aim:

To design the relational model for a hotel management system

Steps for converting the ER diagram to the value

Entity type renames a table

All single value attribute become.

* Each entity in the ER diagram become the table
* the entity's attributes becomes the columns of the

Any attribute of the entity type represence by the Primary key

the multi valued attribute is represented by a separate table

Composite attribute represented by components

Derived attributes are not considered in the table.

Using these values can convert the ER diagram to tables and columns are align the mapping between the table,

VEL TECH - CSE	
EX NO.	01
PERFORMANCE (5)	5
RESULT AND ANALYSIS (5)	5
VIVA VOCE (5)	4
RECORD (5)	—
TOTAL (20)	14

18/8/25

Result:-

Thus the ER diagram and conversion of ER diagram to database relational model for Hotel management System has been implemented successfully.