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DEPARTMENT OF MASTER OF COMPUTER APPLICATION

CLASS: F.Y. MCA **SEM: I**

COURSE CODE: MC504 **SUBJECT NAME: DATABASE MANAGEMENT SYSTEM LAB**

ROLL NO. : 2022510034 **BATCH: B**

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EXPERIMENT NO: 01

EXPERIMENT TITLE: Formulate a case study and Create an ER DiagramAssignment

Aim :- Railway Management E-R diagram

Theory :-

E-R diagram is used to give a better understanding and visualization of DBMS.

Entity:

1. These are objects present in the DBMS.
2. It is represented by a rectangle.
3. Here ***passenger, ticket, payment, train, train status, station*** are entities.

Attributes :

1. Attributes are the characteristics that are used to identify an entity.
    - For ***passengers,*** there are 7 attributes ***(pass-id, name, phone_number, DOB, gender,address,email)***.
    - For ***ticket,*** there are 6 attributes ***(PNR, source, destination, date, reservation, pass_id)***.
    - For ***payment,*** there are 4 ***(pay-id, pass_id, online_payment, total_amount)***.
    - For ***train,*** there are 3 attributes ***(trn-no, trn_name, halt_time)***.
    - For ***train status,*** there are 6 attributes ***(trn-no, PNR, avail_seat, wait_seat, booked_seat, total_passengers)***.

Primary key :

1. It uniquely identifies an entity.
    - Primary key of passenger :- ***pass-id***
    - Primary key of ticket :- ***PNR***
    - Primary key of payment :- ***pay-id***
    - Primary key of train :- ***trn-no***

Foreign key :

1. A foreign key is a field (or collection of fields) in one table that refers to the primary key in another table.
2. The foreign key constraint is a key used to link two tables together.
3. Here,
    a. ***pass-id*** is a foreign key for ***ticket and payment*** entities.
    b. ***PNR*** is a foreign key for ***train status*** entity.
    c. ***trn_no*** is a foreign key for ***train status*** entity.

Multi-valued Attribute :

1. If an entity has more than one value for a single attribute then it is called a multi value attribute.
2. Here for example, ***email, phone_number***.

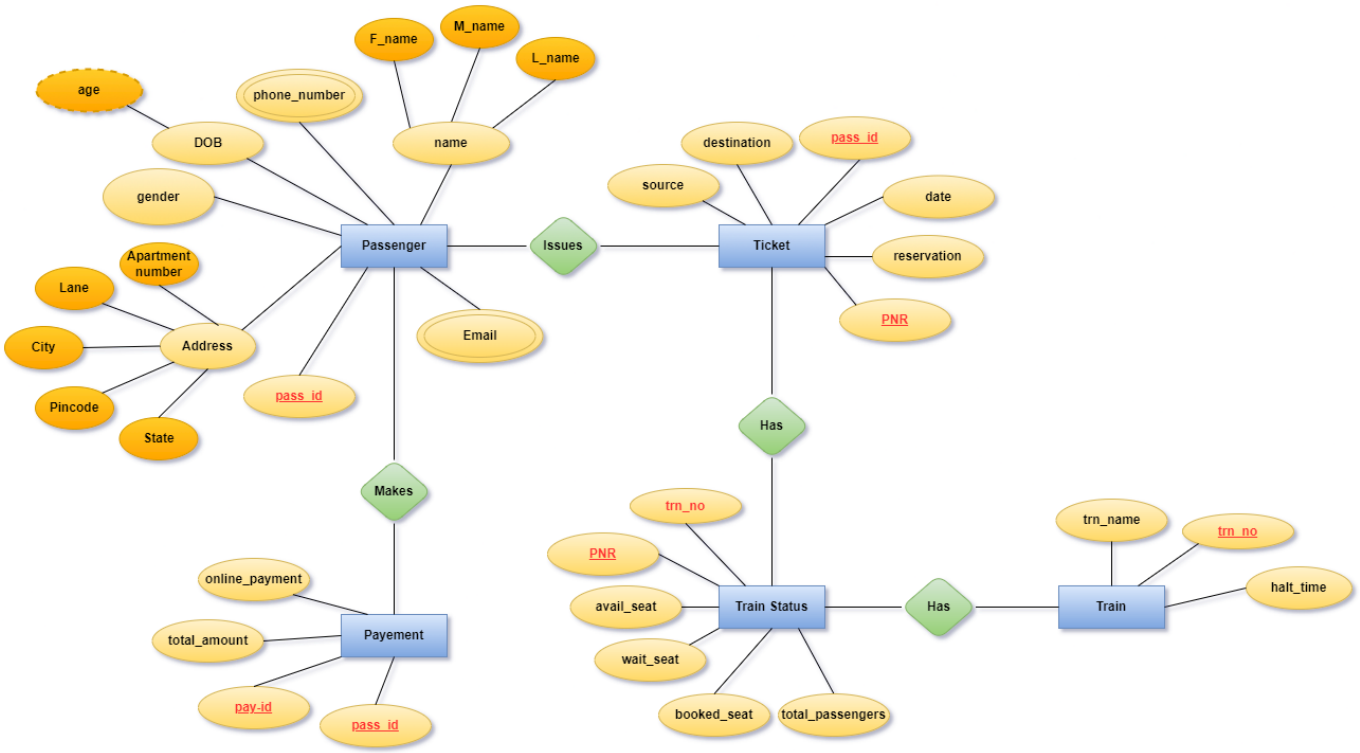
Composite Attribute :

1. The attribute which can be further divided into ‘n’ no. Of attributes is composite attribute.
2. Here for example ***name, address***.

Conclusion :

Thus we have successfully studied the construction of an ER-diagram.

ER-Diagram :-


F_name
M_name
L_name
age
phone_number
name
DOB
gender
Passenger
Issues
Ticket
destination
pass_id
source
date
reservation
PNR
Apartment number
Lane
City
Address
Pincode
State
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trn_no
PNR
avail_seat
wait_seat
booked_seat
total_passengers
Train Status
Has
Train
trn_name
trn_no
halt_time
online_payment
total_amount
pay-id
Payement
pass_id