

CS3700 : DBMS ASSIGNMENT

BY:

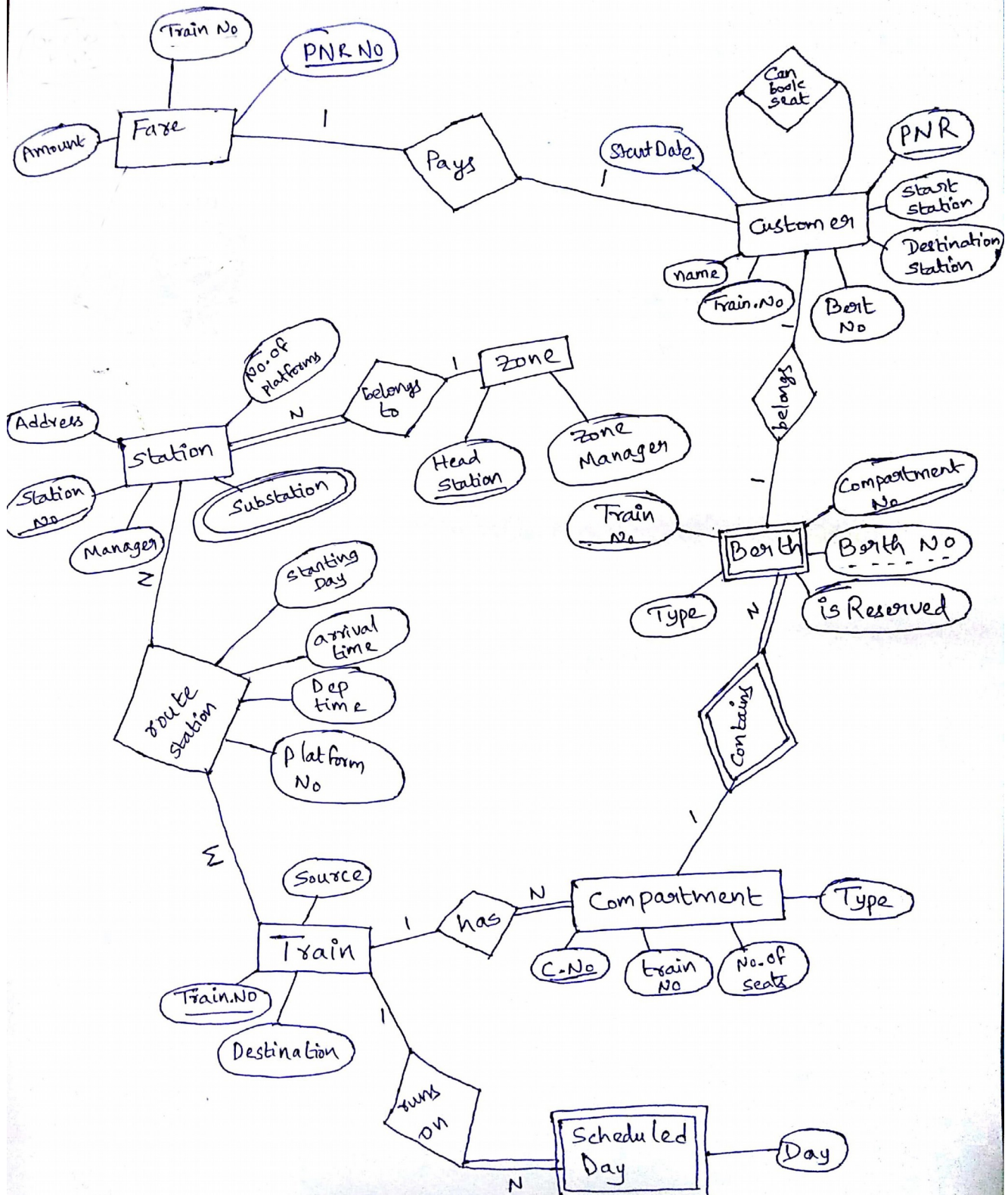
CS15B049

DATABASE DESCRIPTION : RAILWAY DATABASE

Railways Database which keep track of the Trains and its Coaches and seats etc and Stations and Scheduling of Trains and Fares of Tickets between Stations.

- Train has a train number and starts from source station from its scheduled day and travels through different stations to reach the destination station.
- Compartment has compartment no. It is of different types i.e sleeper class, AC class etc. and the number of seats contained in that compartment and the train number it belongs to.
- The Berth of compartment are numbered with seat number and whether its Middle, upper or lower berth, a berth can be reserved or un-reserved also.
- Customer books a berth from a starting station to some end station which the train travels, a single customer can have at most one berth but can book berths for multiple customer for each booking customer pays the fare of journey and a PNR or booking number.
- Train stops at several stations in the course of its journey and each station have name and address and one or many sub-stations that falls under it, it has a number of platforms. And it also has the trains arrival and departure timings and the platform at which it arrives.
- Fare is fixed amount of money which a customer pays for specific train for the ticket PNR.

ER DIAGRAM



RELATIONAL SCHEMA:

Train(TrainNo, Source, Destination)

Compartment(CompartmentNo, TrainNo, Type, NoOfSeats)

Beath(BeathNo, TrainNo, CompNo, Type, IsReserved)

Customer(PNRNo, Name, start, end, SeatNo, AmountPaid, startData)

Station(stationNo, Address, Manager, Platform-Nos)

substation(substationNo, PstationNo)

Zone(Headstation, Manager)

Fare(Amount, trainNo, PNR No)

Route Stations(TrainNo, statNo, platform's, Deptt, Arrt, S-Day)

scheduled Day (TrainNo, Day)

SQL queries based on the above database

1. all the trains from station NDL to MAS running on wednesday .

: SELECT distinct(T.trainNo) FROM train as T, scheduleDay as D WHERE
T.source = "NDL" AND T.dest = "MAS" AND D.day = "WED" ;

2. the common station where trains with trainNo 18203 , 14690 and 12056
are scheduled to stop.

:

SELECT S.stationNo FROM station as S WHERE

S.stationNo IN (select R.stationNo from routeStation as R where R.trainNo =
18203)

AND S.stationNo IN (select R.stationNo from routeStation as R where
R.trainNo = 14690)

AND S.stationNo IN (select R.stationNo from routeStation as R where
R.trainNo = 12056) ;

3. Names of passenger which traveled in trainNo 12058

: SELECT C.name FROM customer as C, fare as F WHERE F.trainNo=12058
AND F.pnrNo = C.pnrNo;

4. number of seats and compartmentNo of compartment which has maximum
number number of seats and belongs to the longest train.

:

SELECT MAX(C.noOfSeats) FROM compartment as C ,train as T WHERE
C.trainNo = T.trainNo AND T.trainNo IN

(SELECT TR.trainNo FROM train as TR WHERE(select
COUNT(CP.compartmentNo) from compartment as CP where CP.trainNo =
TR.trainNo)

>= ALL(select COUNT(CP.compartmentNo) from compartment as CP , train as
TRN where CP.trainNo = TRN.trainNo group by TRN.trainNo)) ;

5. Average Fair of train with train No 16508

: SELECT AVG(F.amount) FROM fare as F WHERE F.trainNo = 16508;

6. the number of unreserved seat of train with trainNo 16508.

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: SELECT COUNT( B.berthNo ) FROM Berth as B, compartment as C  
WHERE C.trainNo = 16508 AND B.compartmentNO = C.compartmentNo AND  
B.isReserved = 'N';
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