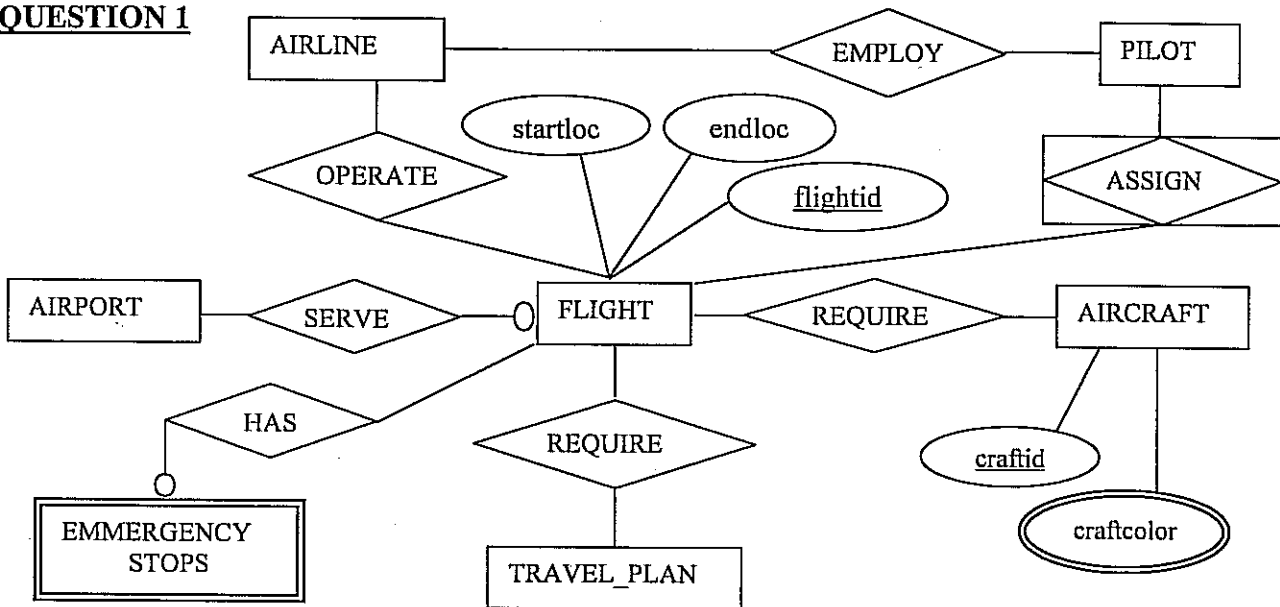




Answer All Questions

QUESTION 1



Use the partially completed ER diagram (ERD) given above to answer the question 1.

- 1.1) By means of an example, explain the term *cardinality* ?
- 1.2) Give one example each for *multivalued attribute*, *weak entity* and a *composite entity* using the ERD above.
- 1.3) Redraw only the required portion of the above ERD removing the multivalued attribute using the best method of removal of such multivalued attribute.
- 1.4) Extend the above ERD and redraw it completely with all attributes and cardinalities. Use the additional information provided below. State all the assumptions you make.

Multiple airlines may register at multiple airports to get the airport services. A customer may request for a travel plan which may contain multiple flights. Travel agent may book a flight or multiples of them (max 4) based on a travel plan. Travel plans are handled by travel agents. There should be at least one pilot for a flight and maximum of 3 pilots per flight. The most senior pilot is supervising the other pilots in a particular flight. The number of passengers per flight has to be recorded. A pilot is having a pilot id, pilot grade information in their records. An airline is having an airline id, airline name while airport is having an airportid, airportname, country and a town.

QUESTION 2

Seminar						
SeminarID	Seminar name	locationid	Attendance	Lecid	RateofPay	Lecturerpay
S001	AssetMgt	L001	250	K010	400	6500
S002	ProjectPlanning	L002	300	K010	600	7500
S003	Cprogramming	L001	100	K011	250	6000

Lecturer						
Lecid	LectFname	LectLname	DateofBirth	sex	JoinDate	BasicSal
K010	Sriyani	Perera	1980-08-07	F	2008-01-01	25000
K011	Prashantha	Kumarage		M	2007-02-02	31000

- 2.1) What is meant by DDL and DML in the context of Structured Query Language (SQL)?
- 2.2) Write SQL statements to create the above two tables with appropriate keys and data types. (SQLs for data insertion not required)
- 2.3) Using abbreviated names (SE for seminar, LE for lecturer) for above tables, write appropriate SQL statements to obtain the following
 1. Full Name of the lecturer (as a single field) who conducts the seminar named AssetMgt.
 2. Total salary of the lecturer who does not have the date of birth filled in the Lecturer table. (total salary = basic salary + total of lecturerpay for seminars)
 3. Profit value for each seminar in the descending order of the profit after the reduction of the lecturer's payment. (totalprofit = (Rateofpay X attendance) – Lecturerpay)

QUESTION 3

- 3.1) Normalize the following dataset and obtain appropriate 1NF, 2NF, 3NF relations separately. Use appropriate relation names. State all the assumptions you make. (NF – Normal Form)

Overtime Schedule					
Date	21-10-2011				
driver no	driver name	vehicle no	OT hour rate	vehicle class	OThrsworked
D001	kamal	HX-6597	250	1	10
D002	janaka	KE-2345	400	2	25
D003	palitha	KE-2345	400	2	15
Date	22-10-2011				
driver no	driver name	vehicle no	OT hour rate	vehicle class	OThrsworked
D001	kamal	KE-2345	400	2	15
D002	janaka	HX-6597	250	1	10
D004	prasad	HX-6597	250	1	18

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