Database systems

Relational model – exercises

Exercise 1: The following relational table is given (primary keys are underlined, optional attributes are denoted as '*'):

LESSON (CourseCode, Date, Hour, Classroom, TeacherID*)

Check whether the following instance is consistent with the table schema. Justify the answer.

CourseCode	Date	Hour	Classroom	TeacherID*
01_TA	17/10/2021	10:00	12A	TID1
02_XA	22/1/2022	17:00	NULL	TID2
011_TO	30/9/2021	NULL	11	TID3
07_XB	18/12/2021	15:00	2P	TID3
07_XB	18/12/2021	15:00	21A	TID4
20_7TT	2/2/2022	21:00	12B	NULL

Exercise 2: The following relational tables are given (primary keys are underlined, optional attributes are denoted as '*'):

OFFERED_SERVICES (CompanyID, ServiceID, Amount)

SERVICES_USED (CompanyID, ServiceID, Date)

Note: (CompanyID, ServiceID) in table SERVICES_USED references (CompanyID,ServiceID) in table

OFFERED_SERVICES

Check whether the following instance of the SERVICES_USED table is consistent with the table schemas above. Justify the answer.

OFFERED_SERVICES

CompanyID	ServiceID	Amount
C1	S1	100
C1	S2	200
C2	S1	150
C3	S3	150

SERVICES_USED

CompanyID	ServiceID	Date
C1	S1	D1
C1	S2	D2
C2	S1	D2
C1	S1	D1
C1	S3	D1
C1	S2	NULL

The following relational tables are given (primary keys are underlined, optional attributes are denoted as '*'):

ROOM (Cinema, Room, Seats)

MOVIE (MovieID, Title, Duration)

MOVIE_PROJECTION (Cinema, Room, Date, StartTime, EndTime, MovieID)

Check whether the following instances of the tables are consistent with the table schemas above. Justify the answer.

ROOM

Cinema	Room	Seats
C1	1	100
C1	2	200
C2	1	150

MOVIE

MovieID	Title	Duration
M1	Star Wars II	150
M2	Minions	80
M3	Indiana Jones	90
M1	Star Wars I	120

MOVIE_PROJECTION

Cinema	Room	Date	StartTime	EndTime	MovieID
C1	1	D1	T1	NULL	M1
C2	1	D2	T3	T6	M3
C1	1	D2	T3	T4	M4
C1	3	D3	T5	T2	M1