REVIEW QUESTIONS 3

1. What is the difference between a database and a table?
2. What does a database expert mean when (s)he observes that a database displays both entity integrity and referential integrity?
3. Why are entity integrity and referential integrity important in a database?
4. A database manual notes that "the file contains two hundred records, each one of which contains nine fields." Use appropriate relational database terminology (table, entity set, row, tuple, entity) to "translate" the preceding statement.

Table name: STUDENT

STU_CODE	PROF_CODE
100278	
128569	2
512272	4
531235	2
531268	
553427	1

Table name: PROFESSOR

PROF_CODE	DEPT_CODE
1	2
2	6
3	6
4	4

5. Draw the basic Entity Relationship diagram for the database shown in figure above.
6. Draw the relational schema for the database shown in figure above.
7. Suppose that you are using the following database composed of the two tables shown in figure below.

Table name: DIRECTOR

DIR_NUM	DIR_LNAME	DIR_DOB
100	Broadway	12-Jan-75
101	Hollywoody	18-Nov-63
102	Goofy	21-Jun-72

Table name: PLAY

PLAY_CODE	PLAY_NAME	DIR_NUM
1001	Cat On a Cold, Bare Roof	102
1002	Hold the Mayo, Pass the Bread	101
1003	I Never Promised You Coffee	102
1004	Silly Putty Goes To Washington	100
1005	See No Sound, Hear No Sight	101
1006	Starstruck in Biloxi	102
1007	Stranger In Parrot Ice	101

- Identify the primary keys
- Identify the foreign keys
- Draw the entity relationship model
- Draw the relational schema to show the relationship between DIRECTOR and PLAY.

PROBLEMS 3

PART 1. Use the database shown in figure below to answer problems 1 through 9.

Table name: EMPLOYEE

EMP_CODE	EMP_TITLE	EMP_LNAME	EMP_FNAME	EMP_INITIAL	EMP_DOB	STORE_CODE
1	Mr	Govender	Adimoolam	W	21-May-70	3
2	Ms	Ratula	Nancy		09-Feb-75	2
3	Ms	Greenboro	Lottie	R	02-Oct-67	4
4	Mrs	Rumpersfro	Jennie	S	01-Jun-77	5
5	Mr	Smith	Robert	L	23-Nov-65	3
6	Mr	Renselaer	Cary	A	25-Dec-71	1
7	Mr	Ogallo	Roberto	S	31-Jul-68	3
8	Ms	Van Blerk	Elandri	I	10-Sep-74	1
9	Mr	Eindsmar	Jack	W	19-Apr-61	2
10	Mrs	Jones	Rose	R	06-Mar-72	4
11	Mr	Broderick	Tom		21-Oct-78	3
12	Mr	Washington	Alan	Y	08-Sep-80	2
13	Mr	Smith	Peter	N	25-Aug-70	3
14	Ms	Smith	Sherry	H	25-May-72	4
15	Mr	Olenko	Howard	U	24-May-70	5
16	Mr	Archialo	Barry	V	03-Sep-66	5
17	Ms	Grimaldo	Jeanine	K	12-Nov-76	4
18	Mr	Rosenberg	Andrew	D	24-Jan-77	4
19	Mr	Bophela	Ingwe	F	03-Oct-74	4
20	Mr	Mckee	Robert	S	06-Mar-76	1
21	Ms	Baumann	Jennifer	A	11-Dec-80	3

Table name: STORE

STORE_CODE	STORE_NAME	STORE_YTD_SALES	REGION_CODE	EMP_CODE
1	Access Junction	€792 730.05	2	8
2	Database Corner	€1 123 370.04	2	12
3	Tuple Charge	€779 558.74	1	7
4	Attribute Alley	€746 209.16	2	3
5	Primary Key Point	€2 314 777.78	1	15

Table name: REGION

REGION_CODE	REGION_DESCRIPT
1	East
2	West

1. For each table, identify the primary key and the foreign key(s). If a table does not have a foreign key, write NONE in the assigned space.

Table	Primary key	Foreign Key(s)
EMPLOYEE		
STORE		
REGION		

2. Do the tables exhibit entity integrity? Answer Yes or No, then explain your answer.

Table	Entity Integrity?	Explanation
EMPLOYEE		
STORE		
REGION		

3. Do the tables exhibit referential integrity? Answer Yes or No, then explain your answer. Write NA (Not Applicable) if the table does not have a foreign key.

Table	Referential Integrity?	Explanation
EMPLOYEE		
STORE		
REGION		

4. Describe the type(s) of relationship(s) between STORE and REGION.
5. Draw the Entity Relationship diagram for the relationship between STORE and REGION.
6. Draw the Relational Schema for the relationship between STORE and REGION.
7. Describe the type(s) of relationship(s) between EMPLOYEE and STORE. (*Hint*: Each store employs many employees, one of whom manages the store.)
8. Draw the Entity Relationship diagram to show the relationships among EMPLOYEE, STORE, and REGION.
9. Draw the Relational Schema to show the relationships between EMPLOYEE, STORE, and REGION.

PART 2. Use the database shown in figure below to answer problems 1 through 5.

Table name: PRODUCT Primary key: PROD_CODE

Foreign key: VEND_CODE

PROD_CODE	PROD_DESCRIPTION	PROD_STOCK_DATE	PROD_ON_HAND	PROD_PRICE	VEND_CODE
12-WW/P2	18 cm power saw blade	07-Apr-16	12	10.94	123
1QQ23-55	6 cm wood screw, 100	19-Mar-16	123	13.55	123
231-78-W	PVC pipe, 8 cm, 2.44 m	07-Dec-15	45	17.01	121
33564/U	Rat-tail file, 0.5 cm, fine	08-Mar-16	18	10.94	123
AR/3/TYR	Cordless drill, 0.6 cm	29-Nov-15	8	136.33	121
DT-34-WW	Philips screwdriver pack	20-Dec-15	11	118.40	123
EE3-67/W	Sledge hammer, 7 kg	25-Feb-16	9	114.21	121
ER-56/DF	Houselite chain saw, 40 cm	28-Dec-15	7	1186.04	125
FRE-TRY9	Jigsaw, 30 cm blade	12-Aug-15	67	11.15	125
SE-67-89	Jigsaw, 20 cm blade	11-Oct-15	34	11.07	125
ZW-QR/AV	Hardware cloth, 0.6 cm.	23-Apr-16	14	110.26	123
ZX-WR/FR	Claw hammer	01-Mar-16	15	17.07	121

Table name: VENDOR Primary key: VEND_CODE

Foreign key: none

VEND_CODE	VEND_NAME	VEND_CONTACT	VEND_AREACODE	VEND_PHONE
120	Bargain Snapper, Inc.	Melanie T. Travis	0181	899-1234
121	Cut 'n' Glow Co.	Henry J. Olero	0181	342-9896
122	Rip & Rattle Supply Co.	Anne R. Morrins	0113	225-1127
123	Tools 'R' Us	Juliette G. McHenry	0161	546-7894
124	Trowel & Dowel, Inc.	George F. Frederick	0113	453-4567
125	Bow & Wow Tools	Bill S. Sedwick	0113	324-9988

1. For each table, identify the primary key and the foreign key(s). If a table does not have a foreign key, write NONE in the assigned space.

Table	Primary key	Foreign Key(s)
PRODUCT		
VENDOR		

2. Do the tables exhibit entity integrity? Answer Yes or No, then explain your answer.

Table	Entity Integrity?	Explanation
PRODUCT		
VENDOR		

3. Do the tables exhibit referential integrity? Answer Yes or No, then explain your answer. Write NA (Not Applicable) if the table does not have a foreign key.

Table	Referential Integrity?	Explanation
PRODUCT		
VENDOR		

4. Draw the Entity Relationship diagram for this database.
5. Draw the Relational Schema for this database.

PART 3. Use the database shown in figure below to answer problems 1 through 5.

Table name: TRUCK Primary key: TRUCK_NUM

Foreign key: BASE-CODE, TYPE_CODE

TRUCK_NUM	BASE_CODE	TYPE_CODE	TRUCK_KM	TRUCK_BUY_DATE	TRUCK_SERIAL_NUM
1001	501	1	32123.50	23-Sep-13	AA-322-12212-W11
1002	502	1	76984.30	05-Feb-12	AC-342-22134-Q23
1003	501	2	12346.60	11-Nov-13	AC-445-78656-Z99
1004		1	2894.30	06-Jan-14	WQ-112-23144-T34
1005	503	2	45673.10	01-Mar-13	FR-998-32245-W12
1006	501	2	193245.70	15-Jul-10	AD-456-00845-R45
1007	502	3	32012.30	17-Oct-11	AA-341-96573-Z84
1008	502	3	44213.60	07-Aug-12	DR-559-22189-D33
1009	503	2	10932.90	12-Feb-14	DE-887-98456-E94

Table name: BASE Primary key: BASE_CODE

Foreign key: none

BASE_CODE	BASE_CITY	BASE_PROVINCE	BASE_AREA_CODE	BASE_PHONE	BASE_MANAGER
501	Polokwane	Limpopo	0700	123-4567	Sibusiso Balisa
502	Cape Town	Western Cape	7100	234-5678	Clementine Daniels
503	Best	North Brabant	4567	345-6789	Maria J. Talindo
504	Durban	KwaZulu-Natal	4001	456-7890	Pragasen Khan

Table name: TYPE Primary key: TYPE_CODE

Foreign key: none

TYPE_CODE	TYPE_DESCRIPTION
1	Single box, double-axle
2	Single box, single-axle
3	Tandem trailer, single-axle

1. For each table, identify the primary key and the foreign key(s). If a table does not have a foreign key, write NONE in the assigned space.

Table	Primary key	Foreign Key(s)
TRUCK		
BASE		
TYPE		

2. Do the tables exhibit entity integrity? Answer Yes or No, then explain your answer.

Table	Entity Integrity?	Explanation
TRUCK		
BASE		
TYPE		

3. Do the tables exhibit referential integrity? Answer Yes or No, then explain your answer. Write NA (Not Applicable) if the table does not have a foreign key.

Table	Referential Integrity?	Explanation
TRUCK		
BASE		
TYPE		

4. Draw the Entity Relationship diagram for this database.
5. Draw the Relational Schema for this database.