Quiz 0 : Frequence DB

Q1 *In relational DB model, a relation instance is a…*

- **set of tuple**
- list of tuple => order is important so can't be
- *collection of tuples* => can contain multiple duplicate, order etc.
- bag of tuples => duplicates are allowed, which shouldn't be. relation is a set doesn't have a duplicate.

Q2 *Let R(a) be a relation schema in which the domain of A includes all integers. Then which of following statements is NOT correct about an instance r of R?*

- r can have any nb of tuples
- ***r can be infinite*** (limited space in DB)
- r can be empty

Q3 *Let R(A,B) be a relation that has n tuples. Suppose null is allowed for A. Then of the following statements, which ones describes best the number of tuples returned by the query:*

- SELECT A FROM R GROUP BY A;
- At least n
- Exactly n (if there no null, then exactly n)
- **At most n** (if there is at most n as null are counted)

Quiz 1 :

Q1: in company's DBS, the DBMS acts as an interface between which of following 2 components:

A) **DB app and DB**
B) *end user and DB app* (user interacts with DB via application)
C) DB app and SQL
D) DB and data

Q2: Which of not a DB components

A. user data
B. meta-data
C. reports
D. indexes

Q3: SQL stands for

A. structured query language
B. standard query language
C. sequential query language

Q4: SELECT * FROM students;

A. data definition command
B. data manipulation command
C. relation instance
D. transaction

Quiz 2

Q1) tuples in relation R(A,B,C). What is result of submitting :

SELECT * FROM R WHERE A=D;

A. syntax error
B. semantics/logical error
C. query executes successfully but returns no tuples
D. query result includes all tuples in R

Q2) null meaning

A. don't know
B. don't care
C. not applicable
D. all of above

Q3) R(A). Q1: SELECT COUNT(A) from R; Q2: SELECT COUNT(*) from R;
Which is NOT possible ?

A. I1= I2
B. I1< I2
C. I1> I2
D. I1 <= I2

Q4) CREATE TABLE R(A int PRIMARY KEY, B int NOT NULL, C int);

Q1: insert into R(B,C) values (353,1);
Q2: insert into R(A,C) values (1,353);
Q3: insert into R(A,B) values (1,353)

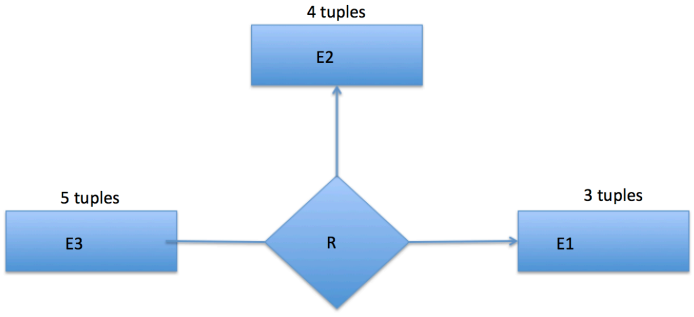
execution of above which statement will fail:

A. q1 only
B. q2 only
C. **both q1 and q2**
Because A must be specified and B must be not null

Q5) Suppose R is an n-ray relationship between entity sets E1, E2, E3, which sharp arrows only at E1 and E2. If E1 has 3 tuples. E2 has 4 tuples, and E3 has 5 tuples. Then what maximum of tuples R would be?

A. 12 **B. 15** C. 20 *D. 60*

Because of arrows: at most 20= 5*4(e3*e1) at most 15= 3*5 (e2*e3)



Quiz 3 Frequency DB

Q1: relation schema R with set of FD's suppose R is 1NF, Which is correct

a) R is 3NF (How do we know, no information)
b) R is 3NF but not in BNCF
c) R is not 3NF but in BNCF
d) **none**

Q2: F, G, H be any sets of FD's. Which is NOT correct

A) F=G, then F and G are equivalent
B) **If F equivalent G, then F=G**
C) if H is minimal basis for F and G, F equivalent to G.

Q3: FD F={A→C} covers H ={A→B, B→C}

A) True
B) **False**

A	B	C
a1	b	c1
a2	b	c2

there could be different value for c for a b

Q4: F={A→BC} and H={A→B, B→C} are equivalent

A) True
B) **False**

A controls BC. If they are equivalent, they give you the same key. They are not equivalent because they do not do the same thing.

Q5: G and H be any sets of FDs which define same (set of) keys. G and H are equivalent.

A) True
B) **False**

Quiz 4 Frequency DB

Q1: FD: ABC→CD which Not hold R?

a) ABC → C (valid)
b) ABC → D (valid)
c) ABC → ø syntax wrong and not relevant
*d) **AB → D*** not correct do not eliminate C from both side

Q2: R={A,B,C} S={B,C}. Which statement is correct

a) R-S is {A} not compatible operators, 2 schemas must be identical
b) R x S = {A,R.B, B.C} wrong All attributes of As followed by all attributes of Bs
c) **R / S is {A}** division means by define if S subset of R
d) R u S is {A,B,C} syntax is wrong like b)

Q3: Result over R{A,B,C} has 3 tuples, no null values:
SELECT * FROM R WHERE A NOT IN(SELECT A FROM R);
a) R executes correctly and return exactly 3 tuples
b) **Executes correctly but returns no tuples**
c) Not execute at all
d) R executes and may return all tuples.

Quiz 5

Q1: R(A,B,C) is a relation R ={R1(A), R2(B), R3(C)} is a decomposition of R.
a) **true** (it is a decomposition because: all attributes of R is present, not introduce anything new, not identical)
b) false

Q2: R(A,B,C) with FD's: {A-B, B→C, C→A} and decomposition R={r1(A,B), r2(B,C)} is dependency-preserving. Key 3: A, B, C are keys, 3NF and BCNF
a) true
b) **false because C controls A is not present**

Q3: Returns data about e very student whose name begins with r
a) **SELECT * FROM students WHERE Name Like 'r%%'**
b) SELECT * FROM students WHERE Name Like '%r%'
c) SELECT * FROM students WHERE Name Like '%%r'
d) SELECT * FROM students WHERE Name Like '%r_%'

*final: 'r_%' means starts with r followed by one more character So it is asking for more than what asked.

Q4: Best way to enforce a key constraint in SQL is to use
a) triggers
b) checks
c) **neither above because we use primary key**