

INDIAN INSTITUTE OF INFORMATION TECHNOLOGY, DESIGN & MANUFACTURING, JABALPUR

DBMS Assignment 11

- 1 Consider the following two relations:

EMPS(ID, NAME, DEPT, SALARY)

MANAGERS(DEPT, MGR)

The first gives the employee ID, their name, department, and salary; the second gives for each department, the manager of that department, which is the employee ID of the person managing the department.

We wish to constrain relations so that in the MGR attribute of a MANAGERS tuple there must appear the ID of an employee in EMPS. Which of the following changes, by itself, enforces that constraint?

- (i) In the declaration of MANAGERS, add for attribute MGR the attribute-based check CHECK (EXISTS (SELECT * FROM EMPS WHERE ID = MGR)).
- (ii) In the declaration of EMPS, add the constraint FOREIGN KEY ID REFERENCES MANAGERS (MGR).
- (iii) In the declaration of MANAGERS, add the constraint FOREIGN KEY MGR REFERENCES EMPS (ID).
- (iv) More than one of the above.

- 2 Follow these instructions to attempt part (a) and (b).

Each of the following two cases compares two queries Q1 and Q2. You have to find out true statement. General advice:

- Do not assume a query has a trivial syntactic error and therefore produces nothing.
- Relations may have NULL's.

In the following, R is a relation with schema R(A, B). The result of each sequence of modifications is the value of R at the end.

- (a) Q1: UPDATE R SET B = 3 WHERE B = 2

Q2: INSERT INTO R

SELECT A, 3 FROM R WHERE B=2

DELETE FROM R WHERE B = 2

- (i) Q1 and Q2 produce the same answer.
- (ii) The answer of Q1 is always contained in the answer to Q2.
- (iii) The answer of Q2 is always contained in the answer to Q1.
- (iv) Q1 and Q2 produce different answers.

- (b) Q1: SELECT * FROM R WHERE A LIKE '%NULL%'

Q2: SELECT * FROM R WHERE A LIKE '%NULL' OR A LIKE 'NULL%'

- (i) Q1 and Q2 produce the same answer.
- (ii) The answer of Q1 is always contained in the answer to Q2.
- (iii) The answer of Q2 is always contained in the answer to Q1.
- (iv) Q1 and Q2 produce different answers.