National University of Computer and Emerging Sciences, Lahore Campus

Course:	**Database Systems**
Program:	**BS(Computer Science)**
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Practice Problem:	**Relational Model (3) - SOLUTION**

Consider the following relational database state. Primary keys (PKs) are underlined and foreign keys (FKs) are in *italic* font. Assume referential integrity constraint(RIC) on FKs (Sites.*ownerID* and Entries.*siteID*) are ON DELETE CASCADE and ON UPDATE SET NULL.

Users

userID	popularity	name
23	4	Isbah
31	1	Izaan
13	4	Tahreem
22	5	Khadija

Sites

siteID	siteName	ownerID	viewCount
3	FAN	22	200
5	W3Schools	13	400
6	Online DB	22	300
8	SQL Guru	23	250

Entries

entryID	siteID	rating	createdDate	tag
1	3	5	2018-05-11	BP
2	3	10	2018-08-11	Views
3	5	15	2018-05-11	
4	8	10	2018-07-11	
5	6	19	2018-05-11	FR
6	8	4	2018-05-17	Views

Q. Apply following operations on the above database. State if the operation would be carried out successfully or not. **Explain your answer briefly.** In case of successful operation indicate the changes that will be made to the above database and in case of Reject state the error that occurred. Please note that all operations are independent.

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a. UPDATE users SET userID=55 WHERE popularity=4;

Accept ○   **Explain:** Multiple entries have popularity =4, thus when we update their userID to 55, the key constraint will

Reject ○   be violated.

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b. UPDATE entries SET siteID = 1 WHERE rating=10;

Accept ○   **Explain:** Referential constraint violated, no site with siteID 1 exists.

Reject ○

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c. DELETE FROM entries WHERE siteID=3;

Accept ○   **Explain:** First two tuples of entries table are deleted.

Reject ○

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d. DELETE FROM sites WHERE ownerID=22

Accept ○   **Explain:** referential action is cascade on delete, this will lead to deletion of site 3 and 6 in sites and deletion

Reject ○   of entries 1,2,5 from Entries table.

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e. INSERT INTO entries VALUES (6,7 ,5, 2012-05-11, 115);

Accept ○   **Explain:** key constraint (6), referential constraint (as there is no value= 7 in sites table) and domain

Reject ○   constraint (115 not a string) are violated.