

Assignment 5

- 1) **Consider the General Hardware Corp. database of Figure 6.1. Describe the problem of referential integrity in terms of the CUSTOMER and CUSTOMER EMPLOYEE relations if the record for customer 2198 in the CUSTOMER relation is deleted. (Assume that no delete rules exist.)**

Every relation has a unique primary key and the same attribute when included in another relation is said to be a foreign key. Customer Key is the primary key in Customer relation and a foreign key in Customer Employee relation. And, if there is no delete rule then one can easily delete the records.

If the record which consists Customer Number 2198 in Customer relation is deleted, then referential integrity problem is raised as there are still records for four employees in the Customer employee relation. If someone wants to check the data for Customer named Smith and start looking at Customer Employee relation, then Customer number 2198 referring to Smith is pulled, and the same customer number refers to the Customer number 2198 in Customer relation. But no data will be retrieved as the records for this customer number was deleted in Customer relation. When no data is retrieved one might think that there is no such Customer which leads to a misunderstanding that Customer Smith might have been added by mistake in Customer Employee relation.

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- (a) **The delete rule between the CUSTOMER and CUSTOMER EMPLOYEE relations is restrict and an attempt is made to delete the record for customer 2198 in the CUSTOMER relation?**

The foreign key relation between Customer and Customer Employee made by Customer Number column, if the relation is restricted that is Foreign key with ON DELETE RESTRICT, it rejects the delete operation of a row in parent table, if a child row exists that references the value for that parent row. So, if attempt is made to delete the record for customer 2198 in customer relation it will not go through as it also exists in Customer Employee relation and it is one-many relationship.

- (b) **The delete rule between the CUSTOMER and CUSTOMER EMPLOYEE relations is cascade and an attempt is made to delete the record for customer 2198 in the CUSTOMER relation?**

The foreign key relation between Customer and Customer Employee made by Customer Number column, if the relation is restricted that is Foreign key with ON DELETE CASCADE, it deletes the referencing rows in the child table when the referenced row is deleted in the parent table which has a primary key. Using the same CUSTOMER table, CUSTOMER_EMPLOYEE table with foreign key constraint ON DELETE CASCADE. So, the records

for customer 2198 is deleted from both the relations when an attempt is made to delete the records for customer 2198 in the Customer relation.

(c) The delete rule between the CUSTOMER and CUSTOMER EMPLOYEE relations is set-to-null and an attempt is made to delete the record for customer 2198 in the CUSTOMER relation?

The foreign key relation between Customer and Customer Employee made by Customer Number column, if the relation is restricted that is Foreign key with ON DELETE SET NULL, if a record in the parent table is deleted, then the corresponding records in the child table will have the foreign key fields set to null. So, when an attempt is made to delete the records for customer 2198 in Customer Employee relation Customer number will be set to null.

(d) The delete rule between the CUSTOMER and CUSTOMER EMPLOYEE relations is restrict and an attempt is made to delete the record for employee 33779 of customer 2198 in the CUSTOMER EMPLOYEE relation?

The foreign key relation between Customer and Customer Employee made by Customer Number column, if the relation is restrict that is Foreign key with ON DELETE RESTRICT, it rejects the delete operation of a row in parent table, if a child row exists that references the value for that parent row. If the parent row has no referencing child rows, then you can delete that parent row.

Here an attempt is made to delete the records of employee 33779 in the Customer Employee relation, so the data will be deleted but there will be no changes in the Customer relation.

(e) The delete rule between the CUSTOMER and CUSTOMER EMPLOYEE relations is cascade and an attempt is made to delete the record for employee 33779 of customer 2198 in the CUSTOMER EMPLOYEE relation?

If The delete rule between the CUSTOMER and CUSTOMER EMPLOYEE relations is cascade and an attempt is made to delete the record for employee 33779 of customer 2198 in the CUSTOMER EMPLOYEE relation .When such attempt is made then all the records with customer number same as 2198 in Customer Employee Relation also gets deleted because Customer number in Customer Employee Relation is foreign key so if we delete any record in Customer Relation table , all the records with same Customer Number in Customer Employee Relation also gets deleted.

(f) The delete rule between the CUSTOMER and CUSTOMER EMPLOYEE relations is set-to- null and an attempt is made to delete the record for employee 33779 of customer 2198 in the CUSTOMER EMPLOYEE relation?

When an attempt is made to delete the record for employee 33779 of customer 2198 in the CUSTOMER EMPLOYEE relation, the record would be deleted in the customer employee

relation however, there would be now need for the null option in the customer relation for that Customer Number.