



*Update Operations, Transactions,  
and Dealing with Constraint Violations*

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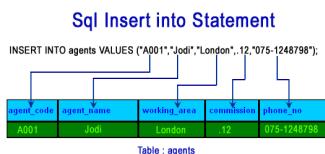


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## Insert Operations



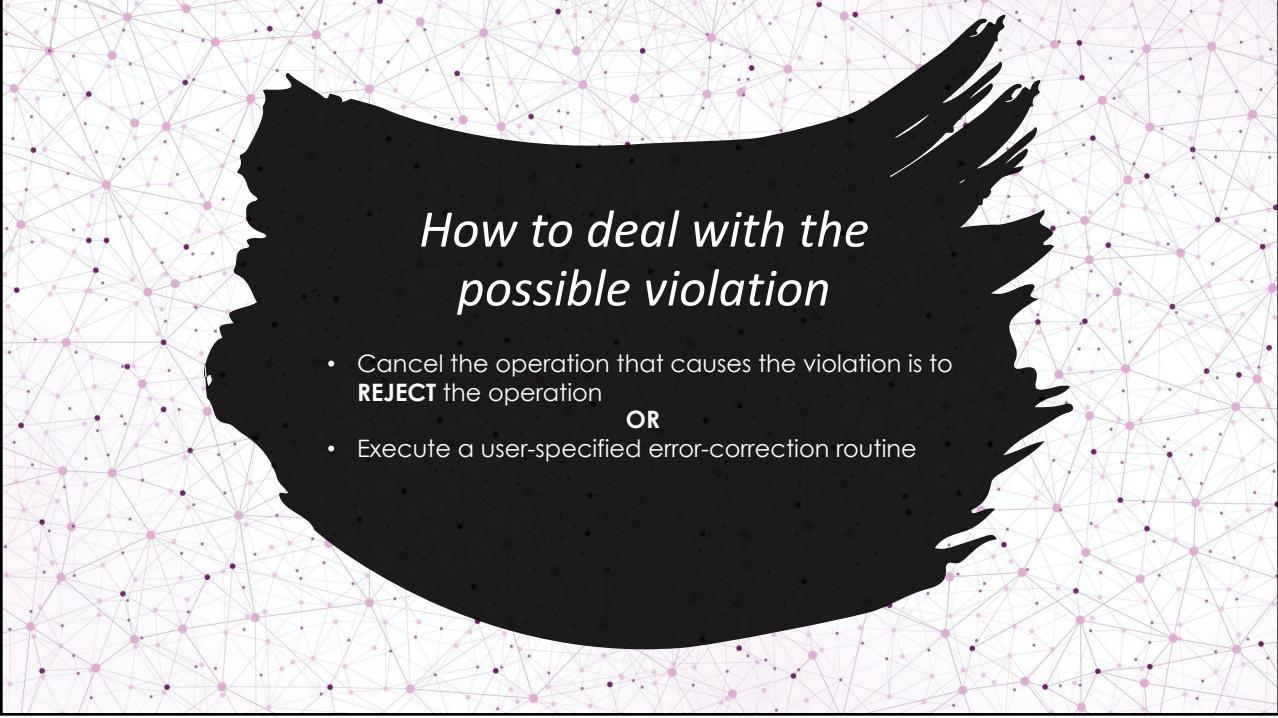
- **INSERT may violate any of the constraints:**
  - **Domain constraint:**
    - if one of the attribute values provided for the new tuple is not of the specified attribute domain
  - **Key constraint:**
    - if the value of a key attribute in the new tuple already exists in another tuple in the relation
  - **Referential integrity:**
    - if a foreign key value in the new tuple references a primary key value that does not exist in the referenced relation
  - **Entity integrity:**
    - if the primary key value is null in the new tuple

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*Example*

STUDENTS				RESULTS			
SID	FIRST	LAST	...	SID	CAT	ENO	POINTS
101	Ann	Smith	...	101	H	1	10
102	Michael	Jones	...	101	H	2	8
103	Richard	Turner	...	102	H	1	9
104	Maria	Brown	...	102	H	2	9
				103	H	1	5

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## *How to deal with the possible violation*

- Cancel the operation that causes the violation is to **REJECT** the operation  
**OR**
- Execute a user-specified error-correction routine