

CIS560

Joins – Part 2

KANSAS STATE
UNIVERSITY

Computer Science



1

Topics

- OUTER JOIN
 - LEFT
 - RIGHT
 - FULL

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2

Table Operators - Review

- Used in the FROM element.
- Perform operations on input tables and produce an output table.
- SQL Server supports four table operators:
 - JOIN
 - APPLY
 - PIVOT
 - UNPIVOT
- JOIN is the only standard operator.



Joins - Review

- Joins operate on two input tables.
- Produce a single output table.
- There are three types of joins:
 - CROSS JOIN
 - INNER JOIN
 - OUTER JOIN
- All differ in their logical processing phases.



Review CROSS and INNER JOINS

- CROSS JOIN has a single logical processing phase:
 1. Produces a Cartesian Product
- INNER JOIN has two logical processing phases:
 1. Produces a Cartesian Product
 2. Filters rows based on a provided predicate



OUTER JOIN

- Three logical processing phases:
 1. Produces a Cartesian Product
 2. Filters rows based on a provided predicate
 3. Adds rows from preserved table
- The preserved table is identified by one of the following key words:
 - LEFT – The left table is preserved.
 - RIGHT – The right table is preserved.
 - FULL – Both tables are preserved.
- Only one syntax is supported:
 - ~~ANSI SQL-89~~ – **Not supported**
 - ANSI SQL-92



Syntax

```
FROM <table_source>  
  CROSS JOIN <table_source>  
  | [ INNER ] JOIN <table_source> ON <condition>  
  | { LEFT | RIGHT | FULL } [ OUTER ] JOIN <condition>
```

