

CIS560

Set Operators

KANSAS STATE
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Computer Science



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Set Operators

- Operates on two input sets
 - Each input set is represented by a complete query.
- Logical Processing order
 - All logical processing phases are completed on each input query... excluding ORDER BY.
 - The two intermediate results serve as inputs to the set operator.
 - An optional ORDER BY is then applied to the resulting set.
- Syntax
 - Input Query 1
 - <Set Operator>
 - Input Query 2
 - [ORDER BY ...]

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Multiset Operators

- Standard SQL defines a multiset variations for each set operator.
- Set operators are concerned with the existence of a row in each set.
- Multiset operators are concerned with the number of occurrences that exist in each set.



UNION – $A \cup B$

- The union of two sets, A and B, is a set containing all members from A and B.
- UNION ALL Multiset Operator
- UNION Distinct Set Operator



INTERSECT – $A \cap B$

- The intersection of two sets, A and B, is a set of all elements that belong to both A and B.
- INTERSECT Distinct Set Operator
- INTERSECT ALL Multiset Operator
 - Not supported in T-SQL
 - It's possible to work around this limitation.



EXCEPT: $A - B$

- The difference of two sets, $A - B$, is the set of elements that belong to A and not B.
- EXCEPT Distinct Set Operator
- EXCEPT ALL Multiset Operator
 - Not supported in T-SQL
 - It's possible to work around this limitation.



Precedence of Set Operators

1. INTERSECT
2. UNION, EXCEPT

- You can use parentheses to control the evaluation order.



Syntax

Input Query 1

<Set Operator>

Input Query 2

[ORDER BY ...]

