INFO90002 Week 5 Tutorial - Relational Algebra

Objectives:

This tutorial will cover:

I. Relational algebra (RA) review – 15 mins
II. Relational algebra and SQL statements – 35 mins

Exercises:

NOTE for students: *This is a brief summary of some of the concepts taught in lecture 8. The lectures contain detailed content related to these and many more concepts. These notes should be considered quick revision instead of a sole resource for the course material.*

1) Relational Algebra review

Review the following relational algebra concepts:

Fundamental operations

Removal operators: Selection (σ) and Projection (π)

Set operators: Set-difference ($-$) and Union ($\cup$)

Combine the rows from two relations: Cross Product ($\times$)

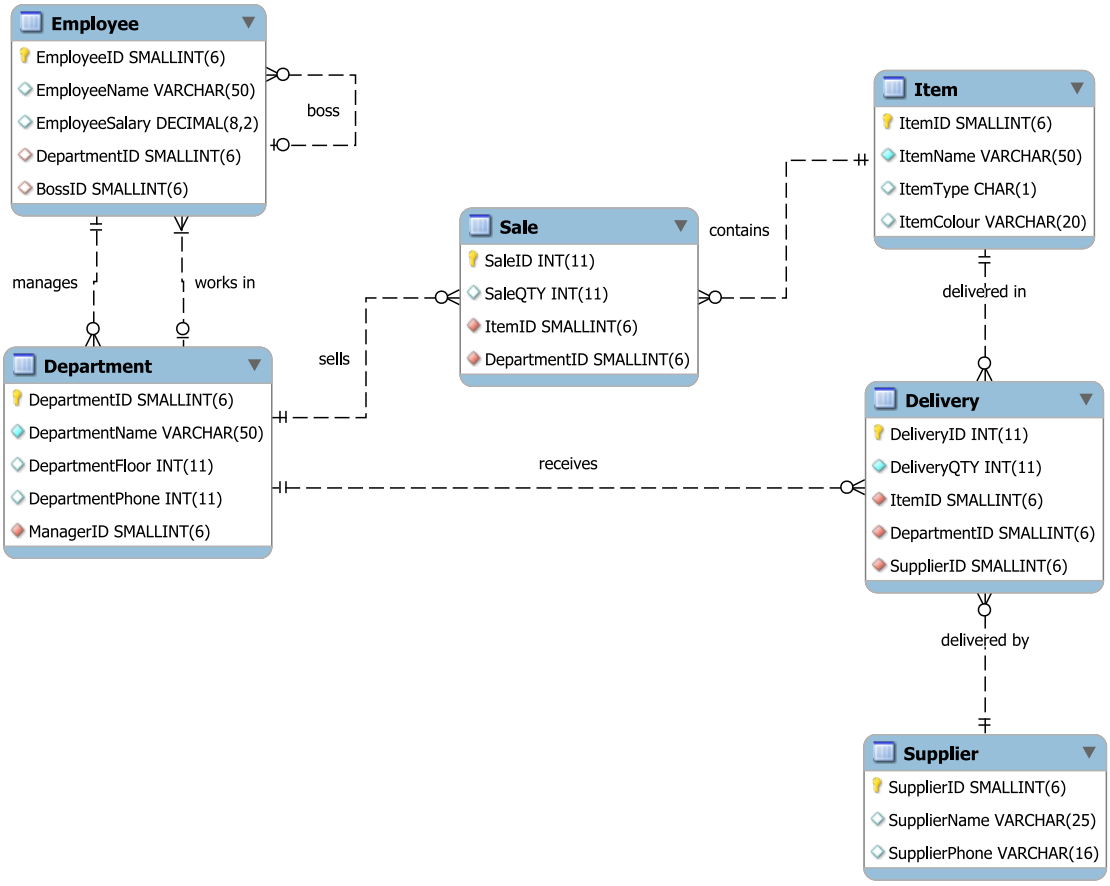
Compound operations

Intersection ($\cap$)

Natural Join ($\bowtie$)

Condition Join (Theta/Inner Join)

Consider the following schema:



Solve the following problems using relational algebra (RA) and resolve to SQL

2) Find the names of all employees.

3) Find the names of all employees in department number 1.

4) List the names of green items of type C.

Solve the following problems using relational algebra (RA)

5) Find the items sold by the departments on the second floor (only show ItemID).

6) Find the names of brown items sold by the Recreation department.

END OF TUTORIAL