**Solution Notes for Tutorial Week 3**

**KIT712**

**Part 1: Relational Algebra**

Formulate a Relational Algebra Query on the Location database for the following:

1. Find the name of the person who live in the city “XYZ”

**Π person\_name (σ city = xyz (lives))**

1. List the person name and the city they work in.

**Π person\_name, city (works** ⋈company\_name **located\_in))**

1. Find the name for all persons that **do not** work for the company "Acme"

**Π person\_name (σ company\_name** ≠ **ACME (works))**

1. Find the name for all persons who live in the same city in which their company is located

**Π person\_name (σ** lives.city=located\_in.city **(lives** ⋈person\_name **works** ⋈company\_name **located\_in))**

1. Find the name of companies where **all** its (every single) employees live in the same city where the company is located in (i.e., companies that do not have any commuting employee).

**H1 = Π** company\_name **(σ** lives.city **≠** located\_in.city **(lives** ⋈person\_name **works** ⋈company\_name **located\_in))**

**Result** = **Π** company\_name **(located\_in) – H1**