CW1 – group number 43

2319060

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Problem 13:

**Relational Algebra:**

T1 <— (Attendee ⋈ Register ⋈ Event ⋈ Organise ⋈ Company)

σ Attendee.city ≠ σ Company.city

ΠAname(T1)

* The natural join (⋈) has been used in the first line as we have are combined multiple different tables, in order to create a comprehensive dataset where the relevant attributes match across tables.
* **We have used the ‘**σ Attendee.city ≠ σ Company.city’ **as it**  filters out the rows from the join that meet the condition where the **city of the attendee** is **not the same** as the **city of the company**.
* The final step we have used ‘ΠAname(T1)’ which extracts the **names of attendees** from the filtered dataset T1.

Problem 14:

**Relational Algebra:**

T1 <— σ City=’ London’(Company)

T2 <— σ City ≠ ‘London’(Company)

T3 <— T1 x T2

T4 <— σ AgeT2 > AgeT1 (T3)

T5 <— ΠCname(T4)

* The first line you are selecting all the companies that are located in London in the tables and putting them in the filtered dataset.
* And then you are selecting all the companies that aren’t located in London and putting them in the filtered dataset.
* Then in the third line we performed the cartesian product between the companies that are in and outside of London eg. T1xT2
* This line we filter out the pairs where the **age** of the company in **T2** (outside London) is **greater than** the **age** of the company in **T1** (London).
* Finally we’ve projected the **company** from the filtered set.