

Denormalization and NoSQL Modelling

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Part 1 (Denormalization)

Relational dependencies, possible foreign keys:

Store has a manager (managerID - reference to Employee)

Employees work in a Store (whereWork - reference to Store)

A Department is managed by someone (managerID - reference to Employee)

Schedule maps Employees (employeeID) to Departments (departmentID)

Denormalization Opportunities include:

Store - Employee

Schedule - Department - Employee

Schedule acts as an associative entity type between the Department and Employee entity types since their primary keys (departmentID and employeeID) are found in the Schedule entity type. Opportunity for denormalization by adding more attributes to Schedule like employeeName, employeeAddress and salesGoal.

Denormalization is possible and can be done on Store - Employee but the actual data found in the Employee entity type is too vague, for example, what would be found in the whereWork attribute? It references Store but it isn't storeID. Does this mean an Employee can work only in 1 Store or others?

As well as that, managerID in the Store entity raises the question of whether it's referring to an Employee.

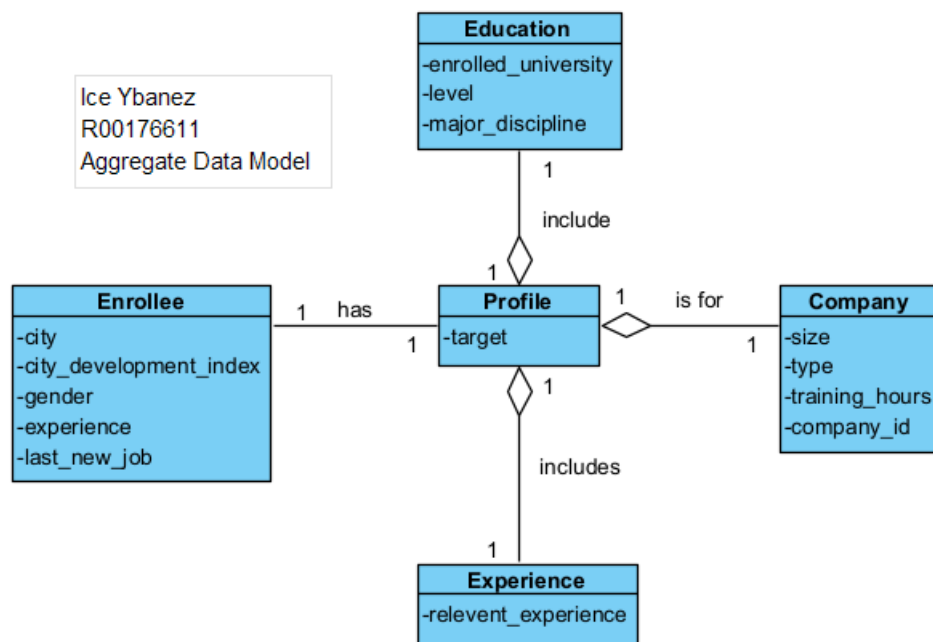
Part 2 (NoSQL Modelling)

Tasks:

Task 1. Based on the given ERD, state an aggregate boundary:

The aggregate boundary is that we don't expect to see an Enrollee's personal details like their gender, city, etc. when we access the Profile aggregate.

Task 2. Draw aggregate data model for the stated aggregate boundary:



Task 3. Use the csv data and aggregate data model to create JSON files:

Profile.json

```
{
  "target": 1,
  "Education": [{
    "enrolled_university": "no_enrollment",
    "major_discipline": "STEM",
    "education_level": "Graduate"
  }],
  "Company": [{
    "company_id": "C01",
    "company_type": "Early Stage Startup",
    "company_size": "<10",
    "training_hours": "28"
  }],
  "Experience": [{
    "relevent_experience": "Has relevent experience"
  }]
}
```

Enrollee.json

```
{
  "enrollee_id" : 85,
  "city": "city_21",
  "city_development_index": 0.624,
  "gender": "Male"
}
```