

## ERD & mapping lab

### 1. Intermediary Car rental company:

An intermediary car rental company has branches across the city; intended to construct a system to facilitate its transactions. You are asked to build an ER diagram and mapping based on the following information.

- The company has many offices to serve a big sector; each office has an ID, address and a contact no.
- The owner willing to rent his car/s needs to provide the office with data about the full name and national ID and the bank account number to which the company will transfer the money.
- The owner must apply for car renting in only one office.
- Owner can apply for renting one or more cars. In addition, it is not allowed to save a car information that is not related to owner.
- Data about car is ID, model (brand, model name, model year), image of its valid license, the rent value and the car status (if the car is booked, in maintenance or available)
- In regard to the tenant (the person who pays rent for the use of a car); the system has to save information about National ID, valid driving license to secure the car and a mobile number as a contact.
- When a tenant orders a car, some information about this transaction have to be known such as the starting date of renting, duration and payment method.

## 2. XX medical analysis laboratory

A medical analysis laboratory decided to design a system to facilitate data gathering and hence improve the service quality to reach the maximum result accuracy and patient satisfaction accordingly.

You are asked to draw an ER diagram and mapping based on the following information.

- The laboratory has branches in different locations; each branch has a code, short name, detailed address contains the city and area where the branch located in, in addition to the street, building number and floor number as well.
- There is a group of medical tests, which the branch provides. Each test has a code beside the name and cost. Some tests have related conditions to apply to guarantee the result accuracy. The system has to save the duration that each test spends until the result is ready (E.g., each test has specific duration from taking the sample until showing the examination result).
- When the patient visits the branch to perform a test or more, there are some data needed about this patient to record by the system: patient ID, full name, age, mobile number, date of birth, gender and if he/she has chronic diseases.
- The system needs to save the information of which patient visited which branch to perform which test/s, in addition to storing the date and time of performing the test.
- Finally, the system has to keep track of the employees working in each branch. Each employee must serve in one branch only.

- Information required about the employees is; employee ID, full name, salary, team (each employee belongs to a specific team ex: chemists' team, clean workers team, accountants' team, doctors team, etc.).
- Each employee has specific duration (e.g. from 8:00 am to 5:00 pm). This duration, starting and ending time have to be recorded.
- In addition, the direct supervisor of each employee has to be considered (if any).
- Every branch must have only one manager who is responsible for it. In addition, no manager is allowed to manage more than one branch.