**Case 1**

**A big company has decided to store information about its projects and employees in a database. The company has wisely chosen to hire you as a database designer. Prepare an E-R diagram for this Company according to The following Description:**

* The company has a number of employees each employee has SSN, Birth Date, Gender and Name which represented as Fname and Lname.
* The company has a set of departments each department has a set of attributes .0DName, DNUM (unique) and locations.
* Employees work in several projects each project has Pname, PNumber as an identifier, Location and City.
* Each employee may have a set of dependent; each dependent has Dependent Name (unique), Gender, and Birth Date.

Note: if the employee left the company no needs to store his dependents info

* For each Department, there is always one employee assigned to manage that Department and each manager has a hiring Date
* Department may have employees but employee must work on Only One department
* Each department may have a set of projects and each project must assigned to one department
* Employees work in several projects and each project has several employees and each employee has a number of working hours in each project
* Each employee has a supervisor

**Case 2**

**(Note that the Identification number is unique)**

**Musicana records have decided to store information on musicians who perform on their albums in a database. The company has wisely chosen to hire you as a database designer.  
• Each musician that is recorded at Musicana has an ID number, a name, an address (street, city) and a phone number.  
• Each instrument that is used in songs recorded at Musicana has a unique name and a musical key (e.g., C, B-flat, E-flat).  
• Each album that is recorded at the Musicana label has a unique title, a copyright date, and an album identifier.  
• Each song recorded at Musicana has a unique title and an author.  
• Each musician may play several instruments, and a given instrument may be played by several musicians.  
• Each album has a number of songs on it and song must appear on one ablum.  
• Each song is performed by one or more musicians, and a musician may perform a number of songs.  
• Each album has exactly one musician who acts as its producer. A producer may produce several albums.  
Design a conceptual schema for Musicana. Be sure to indicate all keys and cardinality constraints and any assumptions that you make.**

**Lab**

1. **Mapping case 1**
2. **ERD case 2**
3. **mapping case 2**