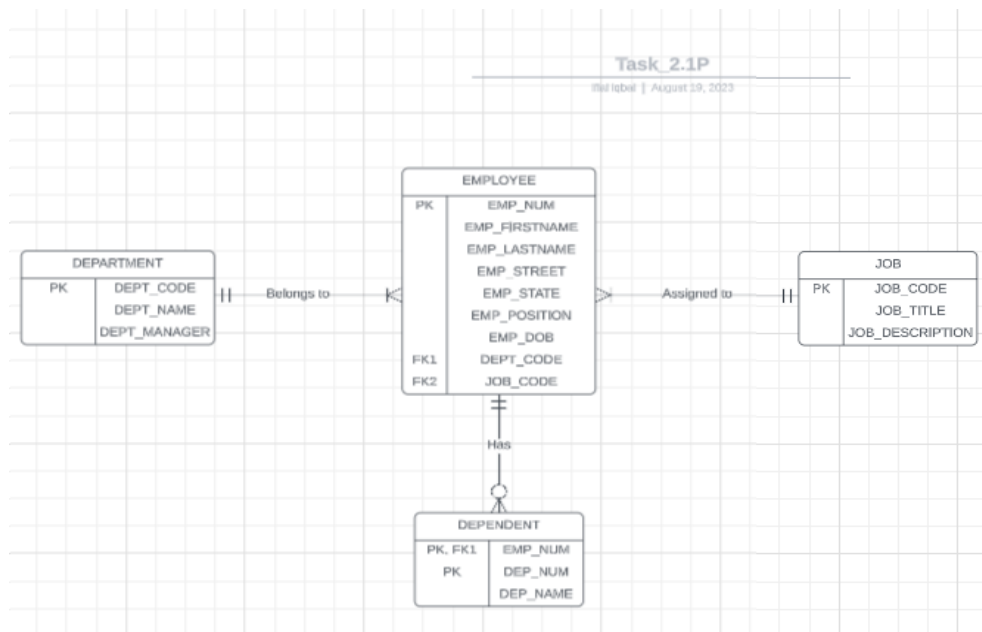


# Data and Information



1. How many Entities are there and what are they?
  - There are 4 entities,
  - EMPLOYEE
  - JOB
  - DEPARTMENT
  - DEPENDENT
2. For the EMPLOYEE Entity: (i) List all attributes; (ii) What is the Primary Key and how do you know that? and (iii) Are there any Foreign Key(s)? If yes, what are they and what are they referring to?
  - (I) Attributes are,
    - EMP\_NUM
    - EMP\_FIRSTNAME
    - EMP\_LASTNAME
    - EMP\_STREET
    - EMP\_STATE
    - EMP\_POSITION
    - EMP\_DOB
    - EMP\_CODE
    - JOB\_CODE

- (II) The primary key is EMP\_NUM, we can see that in the above ER diagram under the EMPLOYEE table it has mentioned as PK (primary key) in the key field of EMP\_NUM attribute.
  - (III) There are 2 foreign keys,
    - DEPT\_CODE is referring to the DEPARTEMENT table.
    - JOB\_CODE is referring to the JOB table.
3. Explain the relationship between EMPLOYEE and DEPENDENT. Your explanation should include how is EMPLOYEE related to DEPENDENT and vice-versa in terms of whether the relationship is Optional/Mandatory and their cardinalities. Also, discuss how is the relationship maintained in the ERD [Hint: Primary and Foreign Keys].
- While considering the relationship between the EMPLOYEE and DEPENDENT we could justify that as,  
An EMPLOYEE can have zero or more DEPENDENT's where its cardinality is denoted as (one to many). But while considering the dependent it is, one DEPENDENT must have one EMPLOYEE it is a mandatory its cardinality is (many to one). Here by we could justify that relationship between EMPLOYEE to DEPENDENT is optional while the relationship between DEPENDENT to EMPLOYEE is mandatory.  
The relationship of EMPLOYEE and DEPENDENT is maintained by having EMP\_NUM as the primary key (PK) of EMPLOYEE and as the foreign key (FK) in DEPENDENT.
4. What is the Primary Key of DEPENDENT? What type of key is it?
- The primary key of DEPENDENT table is a combination of keys (EMP\_NUM and DEP\_NUM) this is also called as the composite key made using the primary key of EMPLOYEE table taken as the foreign key of DEPENDENT table and the primary key of DEPENDENT which is a unique identifier.

## Context diagram

