For this assignment, you will need to create the ERD for the company database, and then complete the following worksheet based on that ERD.

* Create the ERD using MySQL Workbench.
  + Ensure all entities and attributes have the same names as on the Company DB Handout
  + Each table should have the appropriate PK
  + Each table should have the appropriate FK(s) creating the relationships shown on the Company DB Handout.
  + Use the NOT NULL constraint for attributes that should have data
  + No lines on the ERD should cross or go under an entity
  + Once you have the ERD completed, insert a screenshot of the ERD below. NB you will need to submit the .mwb file too.
* For each entity on the ERD, fill out the appropriate fields in the worksheet.
  + Indicate if the entity is strong or weak. If weak, indicate if ID-dependent or not.
* For each relationship on the ERD, fill out the appropriate fields in the worksheet.
  + List each entity in the relationship
    - The entity whose PK is used in the relationship should be Entity 1
      * For Entity 1, list the PK that is used in the relationship
    - The entity whose FK is used in the relationship should be Entity 2
      * For Entity 2, list the FK that is used in the relationship
  + List the cardinality and participation of each entity in the relationship
  + List the business rules for each relationship
  + Indicate if the relationship is identifying or not

***Paste the Entity Relationship Diagram below this line:***

Diagram

Description automatically generated

**Entities**

|  |  |
| --- | --- |
| employee | strong weak ID-dependent weak non-ID-dependent |
| department | strong weak ID-dependent weak non-ID-dependent |
| dependent | strong weak ID-dependent weak non-ID-dependent |
| workson | strong weak ID-dependent weak non-ID-dependent |
| project | strong weak ID-dependent weak non-ID-dependent |
| deptlocations | strong weak ID-dependent weak non-ID-dependent |

**Relationships**

**1**

|  |  |  |  |  |
| --- | --- | --- | --- | --- |
| Entity 1:employee | | PK:ssn | Optional Mandatory | One Many |
| Entity 2:dependent | | FK:essn | Optional Mandatory | One Many |
| Business Rule 1 | An employee may have zero to many dependents | | | |
| Business Rule 2 | A dependent may have one to and only one employee | | | |
| Identifying Non-identifying | | | | |

**2**

|  |  |  |  |  |
| --- | --- | --- | --- | --- |
| Entity 1:employee | | PK:ssn | Optional Mandatory | One Many |
| Entity 2:department | | FK:mgr\_ssn | Optional Mandatory | One Many |
| Business Rule 1 | An employee may have one and only one department | | | |
| Business Rule 2 | A department may have one and only one empolyee | | | |
| Identifying Non-identifying | | | | |

**3**

|  |  |  |  |  |
| --- | --- | --- | --- | --- |
| Entity 1:employee | | PK:ssn | Optional Mandatory | One Many |
| Entity 2:works\_on | | FK:essn | Optional Mandatory | One Many |
| Business Rule 1 | An employee may have one to many works\_on | | | |
| Business Rule 2 | A works\_on may have one and only one employee | | | |
| Identifying Non-identifying | | | | |

**4**

|  |  |  |  |  |
| --- | --- | --- | --- | --- |
| Entity 1:employee | | PK:ssn | Optional Mandatory | One Many |
| Entity 2: employee | | FK:super\_ssn | Optional Mandatory | One Many |
| Business Rule 1 | An employee may have one and only one employee | | | |
| Business Rule 2 | An employee may have one and only one employee | | | |
| Identifying Non-identifying | | | | |

**5**

|  |  |  |  |  |
| --- | --- | --- | --- | --- |
| Entity 1:department | | PK:dNumber | Optional Mandatory | One Many |
| Entity 2:employee | | FK:dno | Optional Mandatory | One Many |
| Business Rule 1 | A department may have one to many employees | | | |
| Business Rule 2 | A employee may have one and only one department | | | |
| Identifying Non-identifying | | | | |

**6**

|  |  |  |  |  |
| --- | --- | --- | --- | --- |
| Entity 1:department | | PK:dNumber | Optional Mandatory | One Many |
| Entity 2:project | | FK:dNum | Optional Mandatory | One Many |
| Business Rule 1 | A department may have one to many projects | | | |
| Business Rule 2 | A project may have one and only one department | | | |
| Identifying Non-identifying | | | | |

**7**

|  |  |  |  |  |
| --- | --- | --- | --- | --- |
| Entity 1:department | | PK:dNumber | Optional Mandatory | One Many |
| Entity 2:dept\_locations | | FK:dNumber | Optional Mandatory | One Many |
| Business Rule 1 | A department may have one to many dept\_locations | | | |
| Business Rule 2 | A dept\_locations may have one and only one department\* | | | |
| Identifying Non-identifying | | | | |

**8**

|  |  |  |  |  |
| --- | --- | --- | --- | --- |
| Entity 1:project | | PK:pNumber | Optional Mandatory | One Many |
| Entity 2:works\_on | | FK:pno | Optional Mandatory | One Many |
| Business Rule 1 | A project may have one to many works\_on | | | |
| Business Rule 2 | A works\_on may have one and only one project | | | |
| Identifying Non-identifying | | | | |