

### 1. Find out the entity type

- {strong entity} Employee (Bdate, Name, Ssn, Sex, Salary, Address)
- {strong entity} Department(Name, Location, Number )
- {strong entity} Project(Location, Name, Number)
- {weak entity} Dependent(Name, ,Sex, Birth\_date, Relationship)

### 2. Find out the relationships

- Employee Works for Department      many - one      {part participation relationship}
- Department Manages Employee      one - one      {Total participation relationship}
- Department Controls Project      one - one      {Total participation relationship}
- Project Control Department      many - one      {part participation relationship}
- Employee Works\_on Project      one - one      {Total participation relationship}
- The project to Employee      one - many      {part participation relationship}
- Employee Dependents\_of Dependent      one -one      {Total participation relationship}
- Dependent to Employee      many -one      {part participation relationship}

### 3. Describe the ER Diagram in words

There are four Entities in this diagram. EMPLOYEE Entity have 6 attributes. They are Ssn, Bdate, Name, Address, Salary, Sex. Ssn is a primary key for this entity. Fname, Minit and Lname are composite attributes of Name attribute. EMPLOYEE Entity have two full participations of DEPARTMENT Entity and PROJECT Entity and two partial participation of DEPARTMENT entity and EMPLOYEE Entity. Name, Number, Locations, Number\_of\_employees are attributes of DEPARTMENT Entity. Name and Number are primary keys of DEPARTMENT Entity. Locations is a multi value attribute of this Entity. Number\_of\_employees is a descriptive attribute of this entity. DEPARTMENT Entity has a full participation of EMPLOYEE Attribute and a partial participation of a PROJECT Entity. Name, Number, Location are Attributes of PROJECT Entity. Name and Number are primary keys of PROJECT Entity. PROJECT ENTITY has a full participation of DEPARTMENT Entity and a full participation of EMPLOYEE Entity. Name, Sex, Birth\_Date, Relationship are attributes of DEPENDENT Entity. DEPENDENT Entity has a full participation of EMPLOYEE Entity.