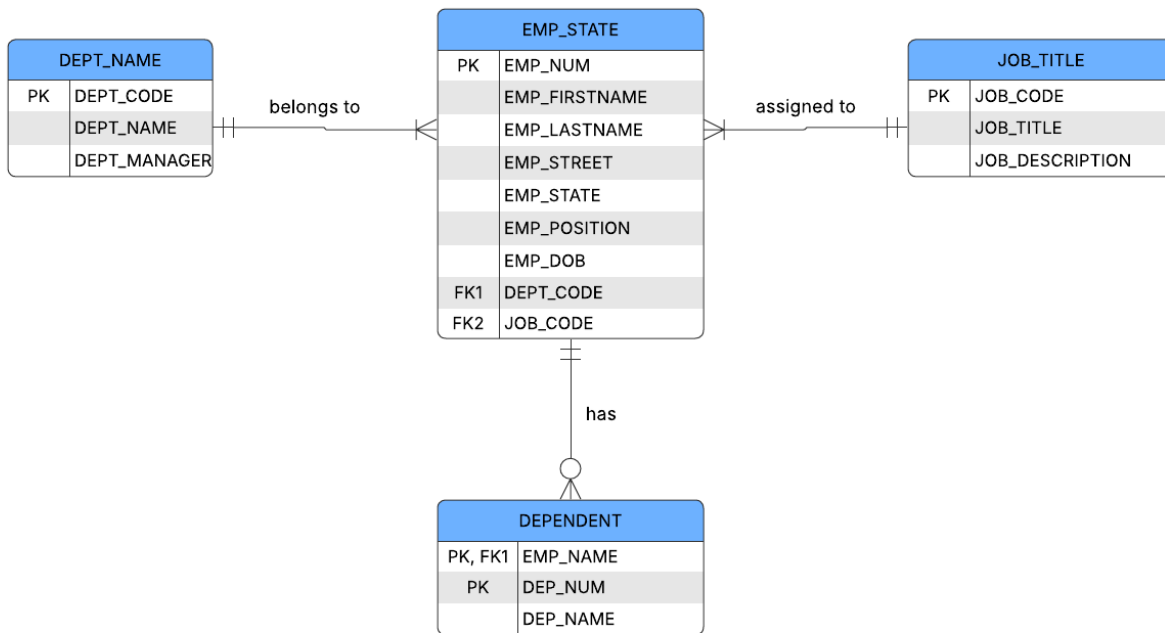


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Task 2.1P: Entity Relationship Diagram



4. ANSWER:

Based on the ERD above:

a) There are four entities in the ERD:

- EMPLOYEE
- DEPENDENT
- DEPARTMENT
- JOB

b) For the EMPLOYEE entity (EMP_STATE):

(i) List of all attributes:

- EMP_NUM
- EMP_FIRSTNAME
- EMP_LASTNAME
- EMP_STREET

- EMP_STATE
- EMP_POSITION
- EMP_DOB
- DEPT_CODE (Foreign Key)
- JOB_CODE (Foreign Key)

(ii)

The Primary Key is EMP_NUM.

This is indicated in the ERD by the "PK" label and the fact that it's underlined, showing it uniquely identifies each employee.

(iii)

Yes, there are two Foreign Keys:

- DEPT_CODE → refers to the DEPARTMENT entity.
- JOB_CODE → refers to the JOB entity.

c) The relationship between *EMPLOYEE* and *DEPENDENT*:

- Each employee (EMPLOYEE) can have many dependents (DEPENDENT) – this is a one-to-many (1:N) relationship.
- Each dependent must be associated with one employee – the relationship is mandatory on the side of DEPENDENT, but optional on the side of EMP_STATE.

Relationship type:

- From EMPLOYEE to DEPENDENT: Optional and 1:N
- From DEPENDENT to EMPLOYEE: Mandatory and N:1

How the relationship is maintained in the ERD:

The attribute EMP_NAME in the DEPENDENT table is part of the composite primary key, and it also acts as a foreign key referring to EMP_NUM in EMP_STATE.

d) The Primary Key of DEPENDENT is a combination of EMP_NAME and DEP_NUM.

This is a composite primary key, as it consists of two attributes that together uniquely identify each dependent.

5. Context Diagram:

