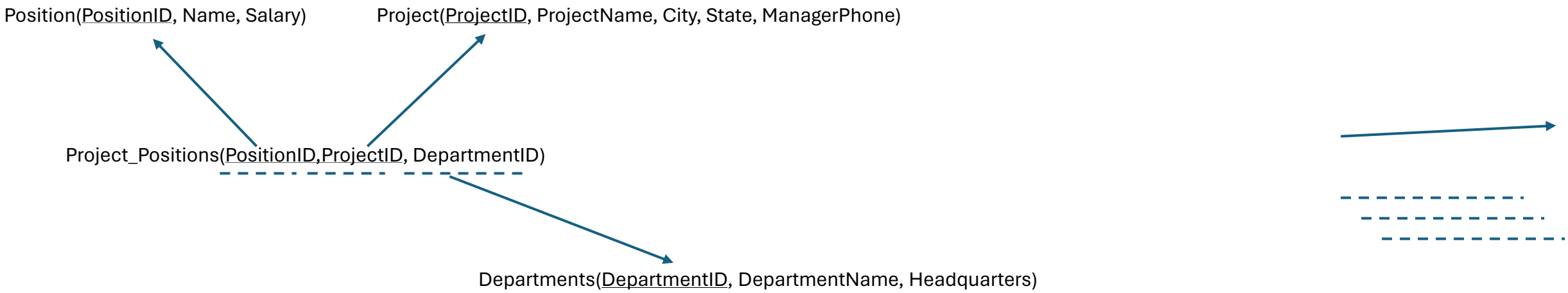
1. what is the primary key for this relation

PositionID,ProjectID -> DepartmentID, DepartmentName, Headquarters, ProjectName, City, State, ManagerPhone, PositionID, ProjectID

2. Remove any partial key dependencies to create a set of linked relational schemas in Second Normal Form.

Primary keys require a solid underline. Foreign keys require a dotted underline and an arrow to the attribute(s) they reference.



3. Remove any transitive dependencies: The Above satisfies 3NF. There are no transitive dependencies.

4. To store multiple skills for each employee, how would you alter the relation so that it is in proper 1NF? Show the proper 1NF schema.

Original:
Employee(EmployeeID, Name, DOB, PositionID, Skills)

New:
Employee(EmployeeID, Name, DOB, PositionID)

Emp_skills(EmployeeID, Skill)

5. Did your new relation in 1NF introduce any redundancies?

Yes, If the DB is not managed properly, an employee can be listed with the same skill multiple times. Also, Data duplication. EmplyeeID and Skills don’t depend on each other because the functional dependencies are maintained. If many employees have the same skills, the Skill attribute is repeated multiple times across the table.

6. Using the functional dependencies you identified, show the new relation(s) in proper 3NF.

Original:
Employee(EmployeeID, Name, DOB, PositionID, Skills)

New:
Employee(EmployeeID, Name, DOB, PositionID)

Emp_skills(EmployeeID, Skill)

7. Using your answers from Task1 and Task2, draw the updated schema for the entire employee database in proper 3NF.