1.

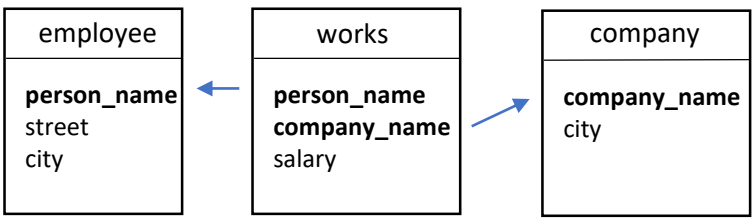
(a)primary key 為 person_name 因為一個人只對應到一間公司，且人名不重複。

(b)primary key 為 person_name+company_name 因為person_name會對應到多個company_name，而company_name會對應到多個person_name，所以person_name+company_name才唯一。

2.

(a) person_name和company_name為兩個foreign keys。

(b)



3.

(a) ∏person_name(σcity='Miami'(employee))

(b) ∏person_name(σcity='Miami' ^ salary>100000 ^ employee.person_name=works.person_name(employee X works))

(c) ∏person_name,city(σcompany_name='FirstBank' ^ employee.person_name = works.person_name ^ company.company_name = works.company_name (employee X works X company))

(d) ∏person_name(employee)- ∏person_name(σcompany_name='FirstBank' (works))

4.

(a)SQL:2023。Property Graph Queries , Multidimensional arrays.(https://www.iso.org/standard/79473.html https://www.iso.org/standard/76583.html https://www.iso.org/standard/84807.html)

(b)T-SQL (https://learn.microsoft.com/zh-tw/sql/t-sql/lesson-1-creating-database-objects?view=sql-server-ver16)

(c)PL/SQL(https://www.oracle.com/tw/database/technologies/appdev/plsql.html)