TUTORIAL 5

SOLUTION

--1

π\_emp\_id, first\_name, last\_name, salary, department\_id (σ\_department\_name='Engineering'(employees))

-- 2

π\_first\_name, salary(employees)

-- 3

σ\_manager\_id IS NOT NULL(employees)

-- 4

σ\_salary > 60000(employees)

-- 5

employees ⨝ department\_id = department\_id(departments)

-- 6

employees × projects

-- 7

employees - (σ\_manager\_id IS NOT NULL(employees))

-- 8

departments ⋈ projects

-- 9

π\_department\_name, location(departments)

-- 10

σ\_budget > 100000(projects)

-- 11

π\_emp\_id, first\_name, last\_name, salary, department\_id (σ\_department\_name='Sales' ^ manager\_id IS NOT NULL(employees))

-- 12

π\_emp\_id, first\_name, last\_name, salary, department\_id (σ\_department\_name='Engineering'(employees)) ∪ π\_emp\_id, first\_name, last\_name, salary, department\_id (σ\_department\_name='Finance'(employees))

-- 13

employees - (employees ⨝ employees.emp\_id = projects.emp\_id(projects))

-- 14

employees ⨝ employees.emp\_id = projects.emp\_id(projects)

-- 15

σ\_salary < 50000 OR salary > 70000(employees)