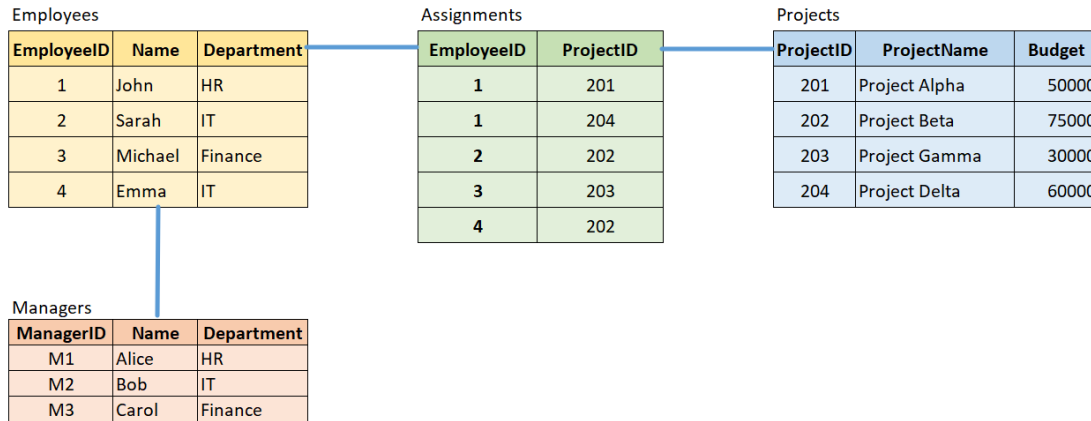


# LAB 1

## RELATIONAL ALGEBRA

Questions	1	2	3	4	5	6	7
Grade							



### Questions

1) Retrieve the names of all employees in the "IT" department. **(2 point)**

$\pi_{\text{Name}}(\sigma_{\text{Department}='IT'}(\text{Employees}))$

2) List the project names and their budgets for projects that have a budget greater than 50000. **(1 point)**

$\pi_{\text{ProjectName}, \text{Budget}}(\sigma_{\text{Budget}>50000}(\text{Projects}))$

3) Find the names of employees who are assigned to the "Project Beta." **(1 point)**

$\pi_{\text{Name}}(\text{Employees} \bowtie (\sigma_{\text{ProjectName}='Project Beta'}(\text{Assignments} \bowtie \text{Projects})))$

4) Identify the names of all managers in the "HR" department. **(1 point)**

$\pi_{\text{Name}}(\sigma_{\text{Department}='HR'}(\text{Managers}))$

5) Get the list of employees assigned to projects with a budget of less than 40000. **(2 point)**

$\pi_{\text{Name}}(\text{Employees} \bowtie (\text{Assignments} \bowtie \sigma_{\text{Budget} < 40000}(\text{Projects})))$

6) Find the total budget of projects that John is assigned to. (1 point)

$\gamma_{\text{SUM}(\text{Budget})}(\text{Projects} \bowtie \text{Assignments} \bowtie \sigma_{\text{Name} = \text{'John'}}(\text{Employees}))$

7) List the names of employees who are assigned to projects managed by Bob. (2 point)

$\pi_{\text{Name}}(\text{Employees} \bowtie \text{Assignments} \bowtie (\text{Projects} \bowtie \sigma_{\text{Name} = \text{'Bob'}}(\text{Managers})))$

