

### Laboratory Work #3

#### Part A

- CREATE DATABASE advanced\_lab;
- CREATE TABLE employees (

emp_id	SERIAL PRIMARY KEY,
first_name	VARCHAR(255),
last_name	VARCHAR(255),
department	VARCHAR(255),
salary	INT,
hire_date	DATE,
status	VARCHAR(255) DEFAULT 'Active'

);
- CREATE TABLE departments (

dept_id	SERIAL PRIMARY KEY,
dept_name	VARCHAR(255),
budget	INT,
manager_id	INT

);
- CREATE TABLE projects (

project_id	SERIAL PRIMARY KEY,
project_name	VARCHAR(255),
dept_id	INT,
start_date	DATE,
end_date	DATE,
budget	INT

);

#### Part B

- INSERT INTO employees (first\_name, last\_name, department)  
VALUES  
(‘Matt’, ‘Horner’, ‘Captain’s Bridge’);
- INSERT INTO employees (first\_name, last\_name, department, salary, hire\_date, status)  
VALUES  
(‘Mira’, ‘Horner’, ‘Mira’s Spacebase’, DEFAULT, ‘2011-02-15’, DEFAULT);
- INSERT INTO employees (first\_name, last\_name, department, salary, hire\_date, status)  
VALUES  
(‘Andrei’, ‘Voron’, ‘Voron 12’, DEFAULT, ‘2013-02-15’, DEFAULT),  
(‘Maksim’, ‘Vostok’, ‘Vostok v9.3’, DEFAULT, ‘2018-03-25’, DEFAULT),  
(‘Valera’, ‘Ghoster’, ‘MyTube’, DEFAULT, ‘2008-11-05’, DEFAULT);
- INSERT INTO employees (first\_name, last\_name, department, salary, hire\_date, status)  
VALUES  
(‘Van’, ‘Darkholme’, ‘Gym’, 50000\*1.1, CURRENT\_DATE, DEFAULT);
- CREATE TEMP TABLE temp\_employees AS  
SELECT \*  
FROM employees  
WHERE department = 'IT';

## Part C

- UPDATE employees  
SET salary = salary \* 1.1;
- UPDATE employees  
SET status = 'Senior'  
WHERE salary >= 60000 AND hire\_date > '2020-01-01';
- UPDATE employees  
SET department = CASE  
WHEN salary > 80000 THEN 'Management'  
WHEN salary BETWEEN 50000 AND 80000 THEN 'Senior'  
ELSE 'Junior'  
END;
- UPDATE employees  
SET department = DEFAULT  
WHERE status = 'Inactive';
- UPDATE departments  
SET budget = (  
SELECT AVG(employees.salary) \* 1.2  
FROM employees  
WHERE employees.department = departments.dept\_name  
);
- UPDATE employees  
SET salary = salary \* 1.15, status = 'Promoted'  
WHERE department = 'Sales';

## Part D

- DELETE FROM employees  
WHERE status = 'Terminated';
- DELETE FROM employees  
WHERE salary < 40000  
AND hire\_date > '2023-01-01'  
AND department IS NULL;
- DELETE FROM departments  
WHERE dept\_name NOT IN (  
SELECT DISTINCT department  
FROM employees  
WHERE department IS NOT NULL  
);
- DELETE FROM projects  
WHERE end\_date < '2023-01-01'  
RETURNING \*;

## Part E

- INSERT INTO employees (salary, department)  
VALUES (NULL, NULL);
- UPDATE employees  
SET department = 'Unassigned'  
WHERE department IS NULL;
- DELETE FROM employees  
WHERE department IS NULL  
OR salary IS NULL;

## Part F

- INSERT INTO employees (first\_name, last\_name)  
VALUES ('Jackie', 'Chan')  
RETURNING emp\_id, first\_name || ' ' || last\_name;
- UPDATE employees  
SET salary = salary + 5000  
WHERE department = 'IT'  
RETURNING emp\_id, salary - 5000 AS old\_salary, salary AS new\_salary;
- DELETE FROM employees  
WHERE hire\_date < '2020-01-01'  
RETURNING \*;

- 
- UPDATE employees
 

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      SET salary = CASE
          WHEN 100000 < (
              SELECT budget
              FROM departments
              WHERE employees.department = departments.dept_name
          ) THEN salary * 1.1
          ELSE salary * 1.05
      END;
      
```
- INSERT INTO employees (first\_name, last\_name, salary, department)
 

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      VALUES
          ('Alice', 'Smith', 50000, 'IT'),
          ('Bob', 'Johnson', 55000, 'IT'),
          ('Carol', 'Williams', 60000, 'HR'),
          ('David', 'Brown', 45000, 'Sales'),
          ('Eve', 'Davis', 48000, 'Marketing');
      
```

 UPDATE employees
 

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      SET salary = salary * 1.10
      WHERE (first_name, last_name) IN (
          ('Alice','Smith'),
          ('Bob','Johnson'),
          ('Carol','Williams'),
          ('David','Brown'),
          ('Eve','Davis')
      );
      
```
- CREATE TABLE employee\_archive (LIKE employees INCLUDING ALL);
 INSERT INTO employee\_archive
 

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      SELECT *
      FROM employees
      WHERE status = 'Inactive';
      DELETE FROM employees
      WHERE status = 'Inactive';
      
```
- UPDATE projects
 

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      SET end_date = end_date + INTERVAL '30 days'
      WHERE projects.budget > 50000
      AND 3 < (
          SELECT COUNT(*)
          FROM employee
          WHERE employees.department_id = project.department_id
      );
      
```