DEPARTMENT OF COMPUTER SCIENCE & ENGINEERING

CHANDIGARH UNIVERSITY

Discover. Learn. Empower.

Experiment 2

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Subject Name: ADBMS Subject Code: 23CSP-333

1. AIM:

   You are a Database Engineer at Talent Tree Inc., an enterprise HR analytics platform that stores employee data, including their reporting relationships. The company maintains a centralized Employee relation that holds:
   Each employee's ID, name, department, and manager ID (who is also an employee in the same table).

2. Tools Used:

   MySQL on VS CODE.

3. Experiment:

   Task is to generate a report that maps employees to their respective managers, showing:

   The employee's name and department.

   Their manager's name and department (if applicable).

   This will help the HR department visualize the internal reporting hierarchy.

4. Solution:

   Easy-Level

```
use ADBMS;
select * from INFORMATION_SCHEMA.TABLES;
create table emp(
    empID int primary key,
    ename varchar(12),
    dept varchar(12),
    managerID int
)
```

```
insert into emp values(1, 'Kekai', 'HR', NULL),
                      (2, 'Laxman', 'Finance', 1),
                      (3, 'Shakuni', 'IT', 1),
                      (4, 'Dropdhti', 'Finance', 2),
                      (5, 'Alex', 'IT', 3),
                      (6, 'Frank', 'HR', 1);

-- SELF JOIN
select A.ename as EmployeeName, A.dept as EmployeeDept, E.ename as 'Manager
Name', E.dept as ManagerDept
        from emp as A LEFT JOIN emp as E on E.empID = A.managerID;
```

Medium – Level

```
      SELECT * FROM emp;


create table year_tbl(
    ID int,
    YEAR int,
    NPV int
)

create table queries_tbl(
    ID int,
    YEAR int
)

insert into year_tbl values(1, 2018, 100), (7, 2020, 30), (13, 2019, 40),
                           (1, 2019, 113), (2, 2008, 121), (3, 2009, 12),
                           (11, 2020, 99), (7, 2019, 0);

insert into queries_tbl values(1, 2019), (2, 2008), (3, 2009),
                              (7, 2018), (7, 2019), (7, 2020),
                              (13, 2019);

-- LEFT JOIN where missing replaced by 0
select Q.ID as ID, Q.YEAR as YEAR, ISNULL(Y.NPV,0) as NPV
    from queries_tbl as Q LEFT OUTER JOIN year_tbl as Y on
        Q.YEAR=Y.YEAR AND Q.ID = Y.ID;
```

5. **Output:**

Easy-Level

EmployeeName	EmployeeDept	Manager Name	ManagerDept
Filter...	Filter...	Filter...	Filter...
Kekai	HR	NULL	NULL
Laxman	Finance	Kekai	HR
Shakuni	IT	Kekai	HR
Dropdhti	Finance	Laxman	Finance
Alex	IT	Shakuni	IT
Frank	HR	Kekai	HR

Medium-Level

ID	YEAR	NPV
Filter...	Filter...	Filter...
1	2019	113
2	2008	121
3	2009	12
7	2018	0
7	2019	0
7	2020	30
13	2019	40

6. Learning Outcomes:
    - Understood the concept of joins.
    - Learn't about various types of joins such as LEFT and SELF join.
    - Learn't how to apply the joins and add various constraints to them as per the user.
    - Learn't how to replace the NULL value with desired value.