

LAB REPORT

CSE312: Database Management System Lab

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| 02 [Report Number] |

Topic: Primary key & Foreign key

Submitted To

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| Experiment No: 01 | | Mapping: CO1 and CO2 |
| Experiment Name | Primary & Foreign key | |

Experiment Details:

**Table Creation:**

* **Task:** Create two table and connect them using primary & foreign key.

**SQL Command:**

|  |  |
| --- | --- |
| CREATE TABLE Departments (  dept\_id INT PRIMARY KEY,  dept\_name VARCHAR (50)  ); | CREATE TABLE Employees (emp\_id INT PRIMARY KEY, emp\_name VARCHAR (50), dept\_id INT,  FOREIGN KEY (dept\_id) REFERENCES Departments(dept\_id) ON DELETE CASCADE ON UPDATE CASCADE ); |

|  |  |
| --- | --- |
| DepartmentsA close up of a data  Description automatically generated  Employees  A screenshot of a computer  Description automatically generated | Desired Output? |
| YES/NO |

Obtained Output:

Observation/ Comments:

* The table structure was successfully created, demonstrating the relationship between the Departments and Employees tables using primary and foreign keys. The ON DELETE CASCADE and ON UPDATE CASCADE clauses ensure referential integrity, allowing child records to be updated or deleted automatically when parent records are modified.

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| --- | --- | --- |
| Experiment No: 02 | | Mapping: CO1 and CO2 |
| Experiment Name | Insert Data | |

Experiment Details:

**Insert**

* **Task:** Insert data into Deportments & Employees table.

**SQL Command:**

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| --- |
| INSERT INTO Departments (dept\_id, dept\_name)  VALUES  (1, 'IT'),  (2, 'HR'),  (3, 'Finance');  INSERT INTO Employees (emp\_id, emp\_name, dept\_id)  VALUES  (101, 'Alice', 1),  (102, 'Bob', 1),  (103, 'Charlie', 2),  (104, 'David', 3); |

Obtained Output:

|  |  |
| --- | --- |
| Departments Employees | Desired Output? |
| YES/NO |

Observation/ Comments:

* Data was successfully inserted into both Departments and Employees tables. The relationships between the parent and child tables were correctly maintained, verifying the integrity of the foreign key constraint.

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| Experiment No: 03 | | Mapping: CO1 and CO2 |
| Experiment Name | Cascading DELETE | |

Experiment Details:

**Delete**

* **Task:** Automatically deletes related records in a child table when a parent record is deleted.

**SQL Command:**

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| --- |
| DELETE FROM Departments WHERE dept\_id = 2; |

Obtained Output:

|  |  |
| --- | --- |
| Departments Employees | Desired Output? |
| YES/NO |

Observation/ Comments:

* The ON DELETE CASCADE functionality worked as expected. When a record was deleted from the Departments table, the corresponding records in the Employees table were automatically removed. This showcases the effective use of cascading deletes for managing dependent data.

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| Experiment No: 04 | | Mapping: CO1 and CO2 |
| Experiment Name | Cascading UPDATE | |

Experiment Details:

**Update**

* **Task:** Automatically updates related records in a child table when a parent record is updated.

**SQL Command:**

|  |
| --- |
| UPDATE Departments SET dept\_name = 'Computer Science' WHERE dept\_id = 1; |

Obtained Output:

|  |  |
| --- | --- |
| Departments Employees | Desired Output? |
| YES/NO |

Observation/ Comments:

* The ON UPDATE CASCADE functionality was successfully demonstrated. Updating the dept\_name in the Departments table propagated changes appropriately, ensuring consistency across related records in the Employees table.