

CS 4332 Project 4  
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Query 1)

Create a table of all employees who are working on projects under different departments than the one they are employed in. The table should include first and last name, project name, department they are employed in, and department the project is under.

```
CREATE VIEW ListOfCrossDepartmentEmployees AS
SELECT EMPLOYEE.FirstName, EMPLOYEE.LastName, PROJECT.ProjectName,
EMPLOYEE.Department, PROJECT.Department as ProjectDepartment
FROM EMPLOYEE
INNER JOIN ASSIGNMENT ON EMPLOYEE.EmployeeNumber = ASSIGNMENT.EmployeeNumber
INNER JOIN PROJECT ON ASSIGNMENT.ProjectID = PROJECT.ProjectID
WHERE EMPLOYEE.Department != PROJECT.Department
```

FirstName	LastName	ProjectName	Department	ProjectDepartment
Mary	Jacobs	2021 Q3 Production Plan	Administration	Production
Ken	Evans	2021 Q3 Production Plan	Finance	Production
Ken	Numoto	2021 Q3 Production Plan	Sales and Marketing	Production
Mary	Jacobs	2021 Q3 Marketing Plan	Administration	Sales and Marketing
Ken	Evans	2021 Q3 Marketing Plan	Finance	Sales and Marketing
Richard	Bandalone	2021 Q3 Portfolio Analysis	Legal	Finance
Tom	Caruthers	2021 Q3 Portfolio Analysis	Accounting	Finance
Richard	Bandalone	2021 Q3 Tax Preparation	Legal	Accounting
Ken	Evans	2021 Q3 Tax Preparation	Finance	Accounting
Mary	Jacobs	2021 Q4 Production Plan	Administration	Production
Ken	Evans	2021 Q4 Production Plan	Finance	Production
Ken	Numoto	2021 Q4 Production Plan	Sales and Marketing	Production
Mary	Jacobs	2021 Q4 Marketing Plan	Administration	Sales and Marketing
Ken	Evans	2021 Q4 Marketing Plan	Finance	Sales and Marketing
Richard	Bandalone	2021 Q4 Portfolio Analysis	Legal	Finance
Tom	Caruthers	2021 Q4 Portfolio Analysis	Accounting	Finance

Query 2)

List who has worked the most hours on each project. The list should include, the project name, first and last name, and hours worked.

```
WITH MaxHoursCTE AS (  
    SELECT ProjectID, MAX(HoursWorked) As MaxHours  
    FROM ASSIGNMENT  
    GROUP BY ProjectID  
)  
SELECT  
    PROJECT.ProjectName,  
    EMPLOYEE.FirstName,  
    EMPLOYEE.LastName,  
    ASSIGNMENT.HoursWorked  
From ASSIGNMENT  
JOIN EMPLOYEE ON ASSIGNMENT.EmployeeNumber = EMPLOYEE.EmployeeNumber  
JOIN PROJECT ON ASSIGNMENT.ProjectID = PROJECT.ProjectID  
JOIN MaxHoursCTE ON ASSIGNMENT.ProjectID = MaxHoursCTE.ProjectID AND  
ASSIGNMENT.HoursWorked = MaxHoursCTE.MaxHours  
ORDER BY ProjectName
```

ProjectName	FirstName	LastName	HoursWorked
2021 Q3 Marketing Plan	Ken	Evans	75.00
2021 Q3 Portfolio Analysis	Mary	Abemathy	45.00
2021 Q3 Portfolio Analysis	Tom	Caruthers	45.00
2021 Q3 Production Plan	Mary	Smith	75.00
2021 Q3 Production Plan	Tom	Jackson	75.00
2021 Q3 Tax Preparation	Tom	Caruthers	50.00
2021 Q3 Tax Preparation	Heather	Jones	50.00
2021 Q4 Marketing Plan	Ken	Evans	75.00
2021 Q4 Portfolio Analysis	Mary	Abemathy	45.00
2021 Q4 Portfolio Analysis	Tom	Caruthers	45.00
2021 Q4 Production Plan	Mary	Smith	75.00
2021 Q4 Production Plan	Tom	Jackson	75.00

Query 3)

Find employees that are working on multiple projects. The list should include first and last name, and the total number of projects they are working on

```
SELECT e.FirstName, e.LastName, COUNT(a.ProjectID) AS ProjectCount
FROM EMPLOYEE e
JOIN ASSIGNMENT a ON e.EmployeeNumber = a.EmployeeNumber
GROUP BY e.FirstName, e.LastName
HAVING COUNT(a.ProjectID) > 1;
```

FirstName	LastName	ProjectCount
Mary	Abemathy	2
Richard	Bandalone	3
Tom	Caruthers	3
Ken	Evans	7
Linda	Granger	2
Tom	Jackson	2
Mary	Jacobs	4
Ken	Numoto	4
Mary	Smith	2

Query 4)

List what employees are assigned to what project. The list should include first and last name, the project name, and the hours they have worked on it.

```
SELECT e.FirstName, e.LastName, p.ProjectName ,a.HoursWorked
FROM EMPLOYEE e
JOIN ASSIGNMENT a ON e.EmployeeNumber = a.EmployeeNumber
JOIN PROJECT p ON a.ProjectID = p.ProjectID
ORDER BY e.LastName;
```

First Name	Last Name	Project Name	Hours Worked
Mary	Abemathy	2021 Q3 Portfolio Analysis	45.00
Mary	Abemathy	2021 Q4 Portfolio Analysis	45.00
Richard	Bandalone	2021 Q3 Portfolio Analysis	20.00
Richard	Bandalone	2021 Q3 Tax Preparation	25.00
Richard	Bandalone	2021 Q4 Portfolio Analysis	20.00
Tom	Caruthers	2021 Q3 Portfolio Analysis	45.00
Tom	Caruthers	2021 Q3 Tax Preparation	50.00
Tom	Caruthers	2021 Q4 Portfolio Analysis	45.00
Ken	Evans	2021 Q3 Production Plan	50.00
Ken	Evans	2021 Q3 Marketing Plan	75.00
Ken	Evans	2021 Q3 Portfolio Analysis	40.00
Ken	Evans	2021 Q3 Tax Preparation	40.00
Ken	Evans	2021 Q4 Production Plan	50.00
Ken	Evans	2021 Q4 Marketing Plan	75.00
Ken	Evans	2021 Q4 Portfolio Analysis	40.00
Linda	Granger	2021 Q3 Marketing Plan	55.00
Linda	Granger	2021 Q4 Marketing Plan	55.00
Tom	Jackson	2021 Q3 Production Plan	75.00
Tom	Jackson	2021 Q4 Production Plan	75.00
Mary	Jacobs	2021 Q3 Production Plan	30.00
Mary	Jacobs	2021 Q3 Marketing Plan	30.00
Mary	Jacobs	2021 Q4 Production Plan	30.00
Mary	Jacobs	2021 Q4 Marketing Plan	30.00
Heather	Jones	2021 Q3 Tax Preparation	50.00
Ken	Numoto	2021 Q3 Production Plan	50.00
Ken	Numoto	2021 Q3 Marketing Plan	55.00
Ken	Numoto	2021 Q4 Production Plan	50.00
Ken	Numoto	2021 Q4 Marketing Plan	55.00
Mary	Smith	2021 Q3 Production Plan	75.00
Mary	Smith	2021 Q4 Production Plan	75.00

Query 5)

List the departments with more that 200hr of work completed on there projects. The list should include the department name and there budget code.

```
SELECT d.DepartmentName, d.BudgetCode
FROM DEPARTMENT d
WHERE EXISTS (
    SELECT 1
    FROM PROJECT p
    JOIN ASSIGNMENT a ON p.ProjectID = a.ProjectID
    WHERE p.Department = d.DepartmentName
    GROUP BY p.ProjectID
    HAVING SUM(a.HoursWorked) > 200
);
```

DepartmentName	BudgetCode
Production	BC-900-10
Sales and Marketing	BC-600-10

Query 6)

List what employees are assigned to no projects. The list should include employees ID, and first and last name.

```
SELECT
    e.EmployeeNumber,
    e.FirstName,
    e.LastName
FROM EMPLOYEE e
LEFT JOIN ASSIGNMENT a ON e.EmployeeNumber = a.EmployeeNumber
WHERE a.ProjectID IS NULL;
```

EmployeeNumber	FirstName	LastName
2	Rosalie	Jackson
4	George	Smith
5	Alan	Adams
12	James	Nestor
13	Rick	Brown
14	Mike	Nguyen
15	Jason	Sleeman
18	George	Jones
19	Julia	Hayakawa
20	Sam	Stewart

Query 7)

List how many hours have been worked on each department's projects. The list should include the department's name and the total hours worked.

```
SELECT
    d.DepartmentName,
    SUM(a.HoursWorked) AS TotalHoursWorked
FROM DEPARTMENT d
JOIN EMPLOYEE e ON d.DepartmentName = e.Department
JOIN ASSIGNMENT a ON e.EmployeeNumber = a.EmployeeNumber
GROUP BY d.DepartmentName;
```

DepartmentName	TotalHoursWorked
Accounting	190.00
Administration	120.00
Finance	460.00
Legal	65.00
Production	300.00
Sales and Marketing	320.00

Query 8)

List the projects with more than 3 employees assigned to them. The list should include the project's name and the number of employees assigned to them.

```
SELECT
    p.ProjectName,
    COUNT(a.EmployeeNumber) AS EmployeeCount
FROM PROJECT p
JOIN ASSIGNMENT a ON p.ProjectID = a.ProjectID
GROUP BY p.ProjectName
HAVING COUNT(a.EmployeeNumber) > 3;
```

ProjectName	EmployeeCount
2021 Q3 Marketing Plan	4
2021 Q3 Portfolio Analysis	4
2021 Q3 Production Plan	5
2021 Q3 Tax Preparation	4
2021 Q4 Marketing Plan	4
2021 Q4 Portfolio Analysis	4
2021 Q4 Production Plan	5