KONERU LAKSHMAIAH EDUCATION FOUNDATION
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(NAAC Accredited "A++" Grade University)
Green Fields, Guntur District, A.P., India – 522502
Department of Computer Science and Engineering

Active Learning Method

Program: B. Tech Academic Year / Yr-Sem : 2024 - 25 / II - II Sem

Course Title & Code: **DBMS & 23AD2102R**

Date: Time: Venue:

CO2	4
Topics	Views and examples
Type of ALM	Statement-Opinion-Summary
Learning Approach	Participatory Learning

Activity:

Task: Students apply what they've learned by writing SQL queries to create views based on provided scenarios.

Scenario **1:** "Create a view that displays the total sales per product category for the current year."
Scenario **2:** "Create a view that shows only the employees in the 'IT' department who have been with the company for more than 5 years."

Task: After creating the views, students explain how their views would be useful in real-world applications.

Products Table

ProductID	ProductName	CategoryID	Price
1	Laptop	1	1000.00
2	Smartphone	2	600.00
3	Tablet	1	450.00
4	Headphones	3	150.00

Sales Table

SaleID	ProductID	Quantity	TotalAmount	SaleDate
101	1	2	2000.00	2024-01-15
102	2	1	600.00	2024-02-20
103	3	3	1350.00	2024-03-10
104	4	4	600.00	2024-04-05
105	1	1	1000.00	2024-05-01

Categories Table

CategoryID	CategoryName
1	Electronics
2	Mobile Devices
3	Accessories

ANSWER

Step 1: Create the Required Tables

Products Table

```
CREATE TABLE Products (
    ProductID INT PRIMARY KEY,
    ProductName VARCHAR(100),
    CategoryID INT,
    Price DECIMAL(10,2)
);
```

Sales Table

```
CREATE TABLE Sales (
    SaleID INT PRIMARY KEY,
    ProductID INT,
    Quantity INT,
    TotalAmount DECIMAL(10,2),
    SaleDate DATE,
    FOREIGN KEY (ProductID) REFERENCES Products(ProductID)
);
```

Categories Table

```
CREATE TABLE Categories (
    CategoryID INT PRIMARY KEY,
    CategoryName VARCHAR(100)
);
```

Employees Table

```
CREATE TABLE Employees (
   EmployeeID INT PRIMARY KEY,
   Name VARCHAR(100),
   Department VARCHAR(50),
   HireDate DATE
);
```

Step 2: Insert Sample Data

Categories Data

```
INSERT INTO Categories (CategoryID, CategoryName) VALUES
(1, 'Electronics'),
(2, 'Mobile Devices'),
(3, 'Accessories');
```

Products Data

```
INSERT INTO Products (ProductID, ProductName, CategoryID, Price) VALUES
(1, 'Laptop', 1, 1000.00),
(2, 'Smartphone', 2, 600.00),
(3, 'Tablet', 1, 450.00),
(4, 'Headphones', 3, 150.00);
```

Sales Data

```
INSERT INTO Sales (SaleID, ProductID, Quantity, TotalAmount, SaleDate)
VALUES
(101, 1, 2, 2000.00, '2024-01-15'),
(102, 2, 1, 600.00, '2024-02-20'),
(103, 3, 3, 1350.00, '2024-03-10'),
(104, 4, 4, 600.00, '2024-04-05'),
(105, 1, 1, 1000.00, '2024-05-01');
```

Employees Data

```
INSERT INTO Employees (EmployeeID, Name, Department, HireDate) VALUES
(1, 'John Doe', 'IT', '2015-06-12'),
(2, 'Jane Smith', 'HR', '2018-09-20'),
(3, 'Mike Ross', 'IT', '2016-04-08'),
(4, 'Sarah Lee', 'Sales', '2020-03-15'),
(5, 'Tom Clark', 'IT', '2013-11-25');
```

Step 3: Create the Required Views

Scenario 1: View for Total Sales Per Product Category (Current Year)

```
CREATE VIEW TotalSalesPerCategory AS
SELECT
   c.CategoryName,
   SUM(s.TotalAmount) AS TotalSales
FROM Sales s
JOIN Products p ON s.ProductID = p.ProductID
JOIN Categories c ON p.CategoryID = c.CategoryID
WHERE YEAR(s.SaleDate) = YEAR(CURRENT_DATE)
GROUP BY c.CategoryName;
```

Scenario 2: View for IT Employees with More Than 5 Years in the Company

```
CREATE VIEW IT_Employees_5Plus_Years AS
SELECT
   EmployeeID,
   Name,
   Department,
   HireDate
FROM Employees
WHERE Department = 'IT'
AND DATEDIFF(YEAR, HireDate, CURRENT_DATE) > 5;
```