R20-MCA DBMS LAB MANUAL - Updated

COURSE OBJECTIVES
1. To provide a sound introduction to the discipline of database management subject.

COURSE OUTCOMES
After completion of this course, students should be able to:
1. Understand, appreciate, and effectively explain the underlying concepts of database technologies.
2. Design and implement a database schema for a given problem-domain.

List of Programs
1. Execute a single line and group functions for a table.
a. Execute DCL and TCL Commands.
2. Create and manipulate various DB objects for a table, including views, partitions, and locks.

--- Program 1: Single Line and Group Functions for a Table ---

Aim: Execute single-line and group functions for a table.

Source Code:
```
-- Single-line function examples
SELECT UPPER(sname) AS uppercase_name FROM students;
SELECT ROUND(marks, 2) AS rounded_marks FROM results;

-- Group function examples
SELECT COUNT(*) AS total_students FROM students;
SELECT AVG(marks) AS average_marks FROM results;
```

Expected Output:
```
uppercase_name   | rounded_marks
-----------------|--------------
UPPERCASE        | Rounded Value
```

...

--- Program 2: Creating Views, Partitions, and Locks ---

Aim: Create views, partitions, and apply locks in a DB.

Source Code:
```
CREATE VIEW student_summary AS
SELECT student_id, sname, avg_marks FROM results WHERE marks > 60;

CREATE PARTITION FUNCTION studentPartition(int) AS RANGE LEFT FOR VALUES (1000, 2000);
```

Expected Output:
```
student_id | sname      | avg_marks
-----------|------------|-----------
1024       | Alice      | 85
```