# Lab 09 – Indexes Views Trigger

This Lab relates to the following Course Learning Requirements:

CLR 1: Follow lab policies and procedures for etiquette, software licensing requirements and lab submissions

CLR6: Create and manipulate database objects

CLR6: Create indexes, views, triggers

CLR4: Use Data Definition Language (DDL) to add, modify and delete database objects, i.e. tables, views, indexes

Objective:

The objective of this lab is to make sure that you know how to use different join statements and use subqueries.

# Pre-Lab Instructions:

1. Read Module 12

**Lab Tasks:**

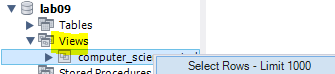
1. Import the Lab07DB.sql if not already loaded in the workbench and refresh the schemas.
2. You will execute some commands to get information out of the database. Each bullet point represents an individual task.
   * Index:
     1. Display everything FROM student table WHERE student program is ‘Computer Science’. Use EXPLAIN statement before SELECT and observe the row’s column

(<https://dev.mysql.com/doc/refman/8.0/en/using-explain.html>).

* + 1. Create an index on StudentProgram for student table and save it as **LastName\_Index.sql file.**

Repeat the step (i) Do you see the number decreased under the row’s column? The smaller number under rows represent that the Query statement had to go through a smaller number of rows.

* + View:
    1. Create a view called ‘computer\_science\_students’ for the SELECT query created under **Index** step (i) and save the SQL to **LastName\_View.sql**.
    2. To check if the view was created successfully. You can run the view; the view is created under the view folder under the database.



* + Trigger:
    1. First, Create a ‘professor\_audit\_trail’ table. Use the following code to create the table:

*use lab09;*

*create table professor\_audit\_trail (*

*id int unsigned primary key auto\_increment not null,*

*ProfessorName VARCHAR(255) not null,*

*ProfessorProgram VARCHAR(255) not null);*

* + 1. Now, create a trigger on professor table which gets triggered whenever a row in professor table is **deleted**. The deleted professor name and professor program should be stored in the newly created ‘professor\_audit\_trail’ table. Save the trigger SQL as **LastName\_Trigger.sql**.
  + Delete:
    1. Delete a row in professor table where ProfessorId is 2.
    2. The trigger created in previous step should store the deleted row in professor\_audit\_trail table. Display everything in the professor\_audit\_trail table and take the screenshot and name it **LastName\_professor\_audit\_trail.png**
    3. After all steps are complete, delete the **Index**, **View** and **Trigger** created in previous steps using **DROP** command. Create a single SQL file with all the three commands used to delete and name it **LastName\_Delete.sql**

1. Your lab is to be submitted with following files

* LastName\_Index.sql
* LastName\_View.sql
* LastName\_Trigger.sql
* LastName\_professor\_audit\_trail.png
* LastName\_Delete.sql

**Lab Grading Rubric (3%)**

|  |  |
| --- | --- |
| LastName\_Index.sql , LastName\_View.sql, LastName\_ Delete.sql | /1.5 |
| LastName\_professor\_audit\_trail.png, LastName\_Trigger.sql | /1.5 |
|  | /1 |
| Total | /3 |
| Comments |  |