EXPERIMENT NO 2 **DATE:21 OCTOBER 2021**

DATA DEFINITION LANGUAGE

AIM:

i. Create the database;
ii. Select the currrent database
iii. Create the following tables

- **Students**(sid,sname,sex,dob,dno)
- **Department**(dno,dname)
- **Faculty**(F,id,fname,designation,salary,dno)
- **Course**(cid,cname,credits,dno)
- **Register**(sid,cid,sem)
- **Teaching**(f_id,cid,sem)
- Hostel(hid,hname,seats)

iv. Include the necessary constraints NOT NULL,DEFAULT,CHECK and PRIMARY KEY,UNIQUE
v. Create a database college
vi. Use college as the current database
vii. Display all the tables in college database
viii.
ix. Display all the tables in college database
x. Describe the structures of all tables
xi. Modify the student table to add a new field ‘grade’

OBJECTIVES

To understand DDL commands

THEORY

It is very important to understand the database before learning MySQL. A database is an application that stores the organized collection of records. It can be accessed and manage by the user very easily. It allows us to organize data into tables, rows, columns, and indexes to find the relevant information very quickly. Each database contains distinct API for performing database operations such as creating, managing, accessing, and searching the data it stores. Today, many databases available like MySQL, Sybase, Oracle, MongoDB, PostgreSQL, SQL Server, etc. In this section, we are going to focus on MySQL mainly.

What is MySQL?

MySQL is currently the most popular database management system software used for managing the relational database. It is open-source database software, which is supported by Oracle Company. It is fast, scalable, and easy to use database management system in comparison with Microsoft SQL Server and Oracle Database. It is commonly used in conjunction with PHP scripts for creating powerful and dynamic server-side or web-based enterprise applications.

It is developed, marketed, and supported by **MySQL AB, a Swedish company**, and written in C programming language and C++ programming language. The official pronunciation of MySQL is not the My Sequel; it is **My Ess Que Ell**. However, you can pronounce it in your way. Many small

and big companies use MySQL. MySQL supports many Operating Systems like Windows, Linux, MacOS, etc. with C, C++, and Java languages.

MySQL is a Relational Database Management System (RDBMS) software that provides many things, which are as follows:

- It allows us to implement database operations on tables, rows, columns, and indexes.
- It defines the database relationship in the form of tables (collection of rows and columns), also known as relations.
- It provides the Referential Integrity between rows or columns of various tables.
- It allows us to updates the table indexes automatically.
- It uses many SQL queries and combines useful information from multiple tables for the end-users.

DATABASE QUERIES

- **Create database**

  We can create a new database in MySQL by using the CREATE DATABASE statement

  CREATE DATABASE [IF NOT EXISTS] database_name
- **Select database**

  SELECT Database is used in MySQL to select a particular database to work with

  USE database_name
- **Drop database**

  We can drop an existing database in MySQL by using the DROP DATABASE statement

  DROP DATABASE [IF EXISTS] database_name;

EXPERIMENT NO 2 **DATE:21 OCTOBER 2021**

TABLE QUERIES

- Create table

  CREATE TABLE [IF NOT EXISTS] table_name
- Alter table

  ALTER TABLE table_name
- Rename table

  RENAME **TABLE** old_tab1 **TO** new_tab1,
- Truncate table

  TRUNCATE [**TABLE**] table_name;
- Describe table

  {DESCRIBE | DESC} table_name
- Drop table

  DROP [**TEMPORARY**]**TABLE** [IF EXISTS] table_name [**RESTRICT** | **CASCAD**
- Temporary table

  CREATE TEMPORARY TABLE table_name(
- Copy table

  CREATE TABLE new_table_name

  SELECT column1, column2, column3

  FROM existing_table_name;
- Repair table

  REPAIR TABLE name;
- Add/Delete columns
- **ALTER TABLE** table_name
- **ADD COLUMN** column_name column_definition [**FIRST**|**AFTER** existing_column];
- Show colums

  SHOW COLUMNS FROM column name;
- Rename colums
- **ALTER TABLE** balance
- CHANGE COLUMN (current column name)(to column name) VARCHAR(25);

EXPERIMENT NO 2 **DATE:21 OCTOBER 2021**

CONSTRAINTS

- **NOT NULL:**The NOT NULL constraint enforces a column to NOT accept NULL values.
- **PRIMARY KEY:**The PRIMARY KEY constraint uniquely identifies each record in a table.

  Primary keys must contain UNIQUE values, and cannot contain NULL values.
- **FOREIGN KEY:**A FOREIGN KEY is a field (or collection of fields) in one table, that refers to the **PRIMARY KEY** in another table.
- **CHECK:**The CHECK constraint is used to limit the value range that can be placed in a column.
- **DEFAULT:**The DEFAULT constraint is used to set a default value for a column.

  The default value will be added to all new records, if no other value is specified
- **UNIQUE:**The UNIQUE constraint ensures that all values in a column are different.

PROCEDURE

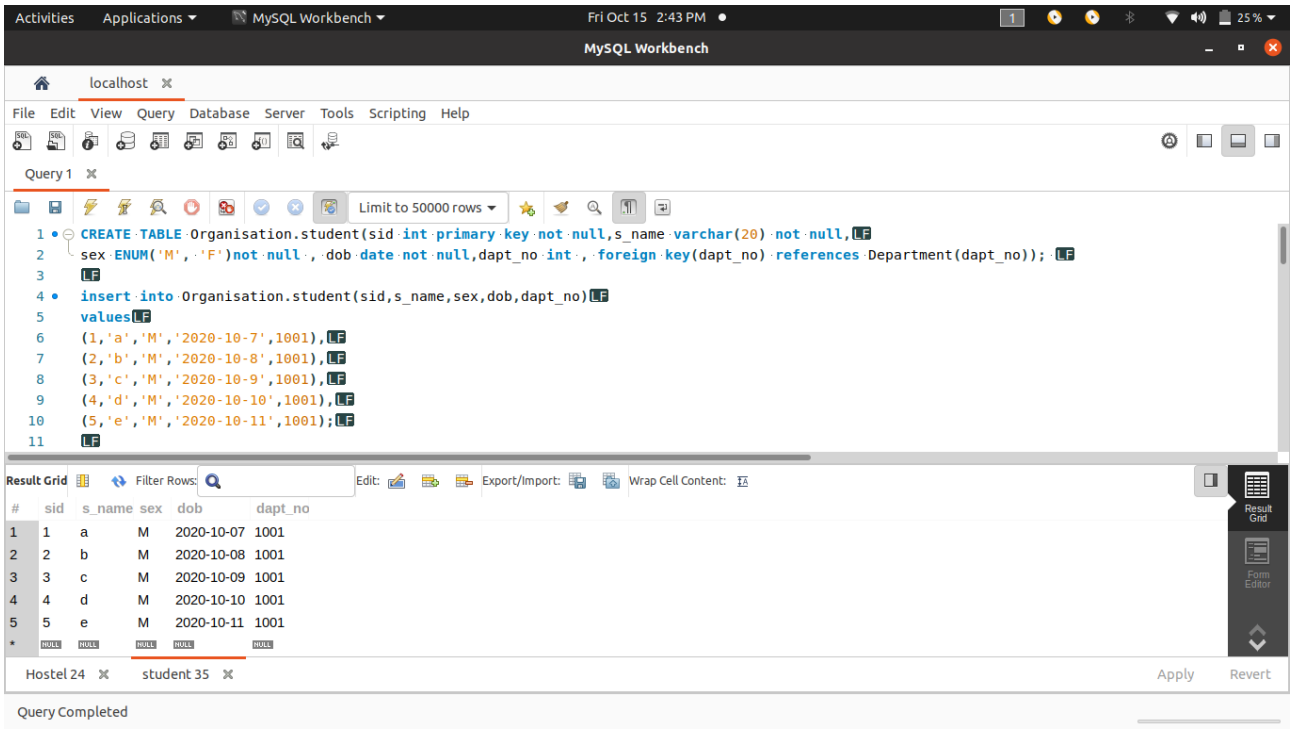
RESULTS:

DDL commands have been executed

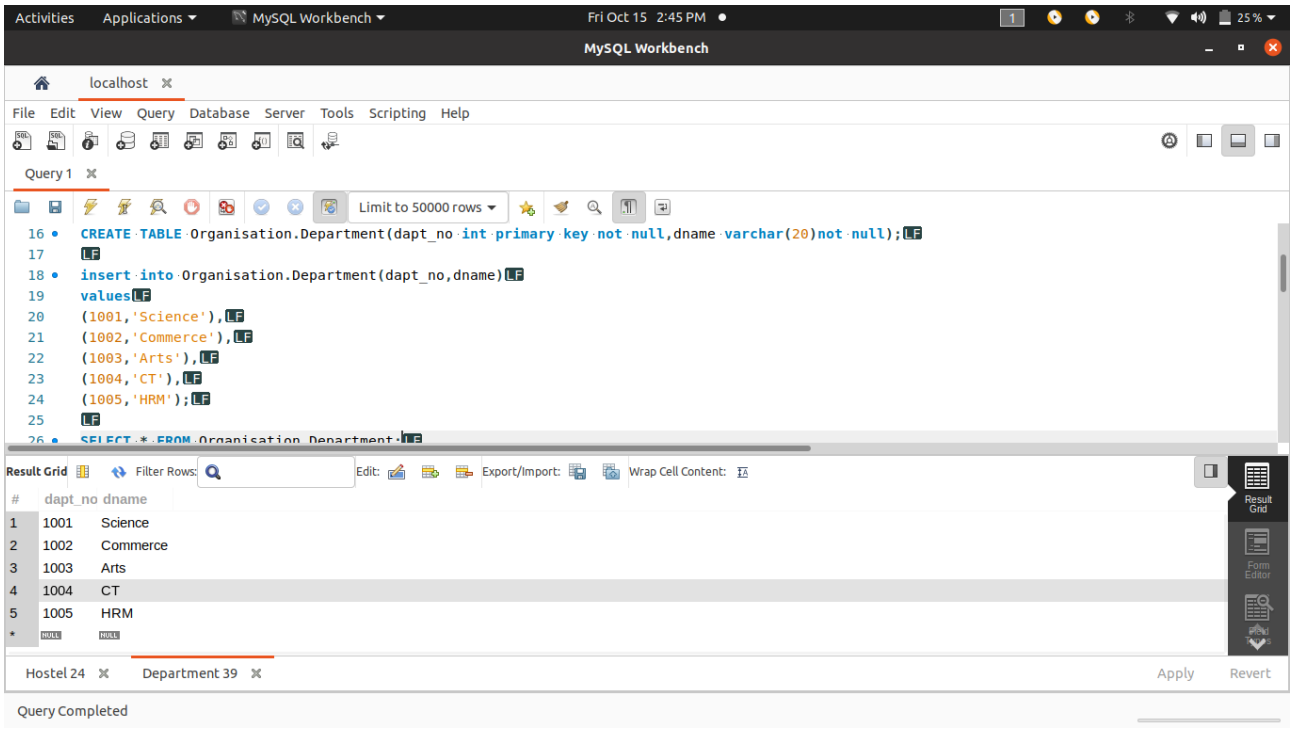
OUTPUT

Creating table student and inserting values:

EXPERIMENT NO 2 **DATE:21 OCTOBER 2021**

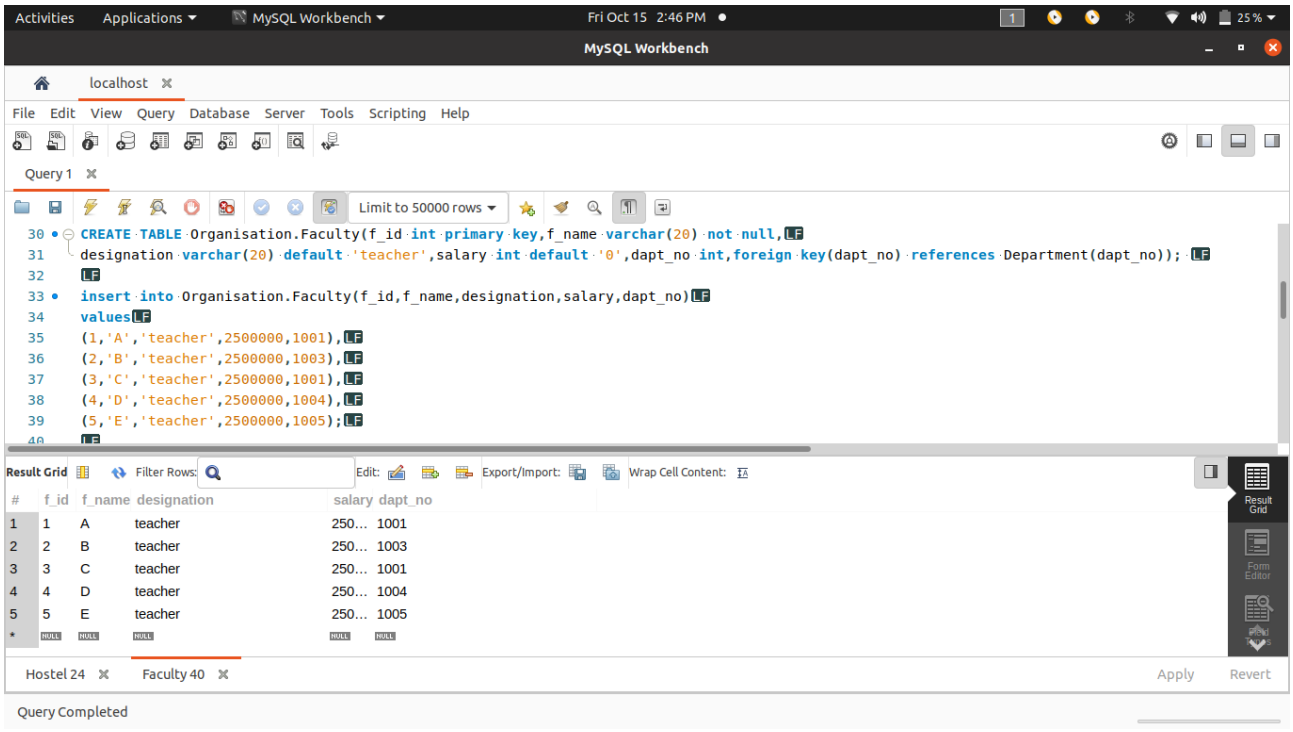


Creating table Department and inserting values:

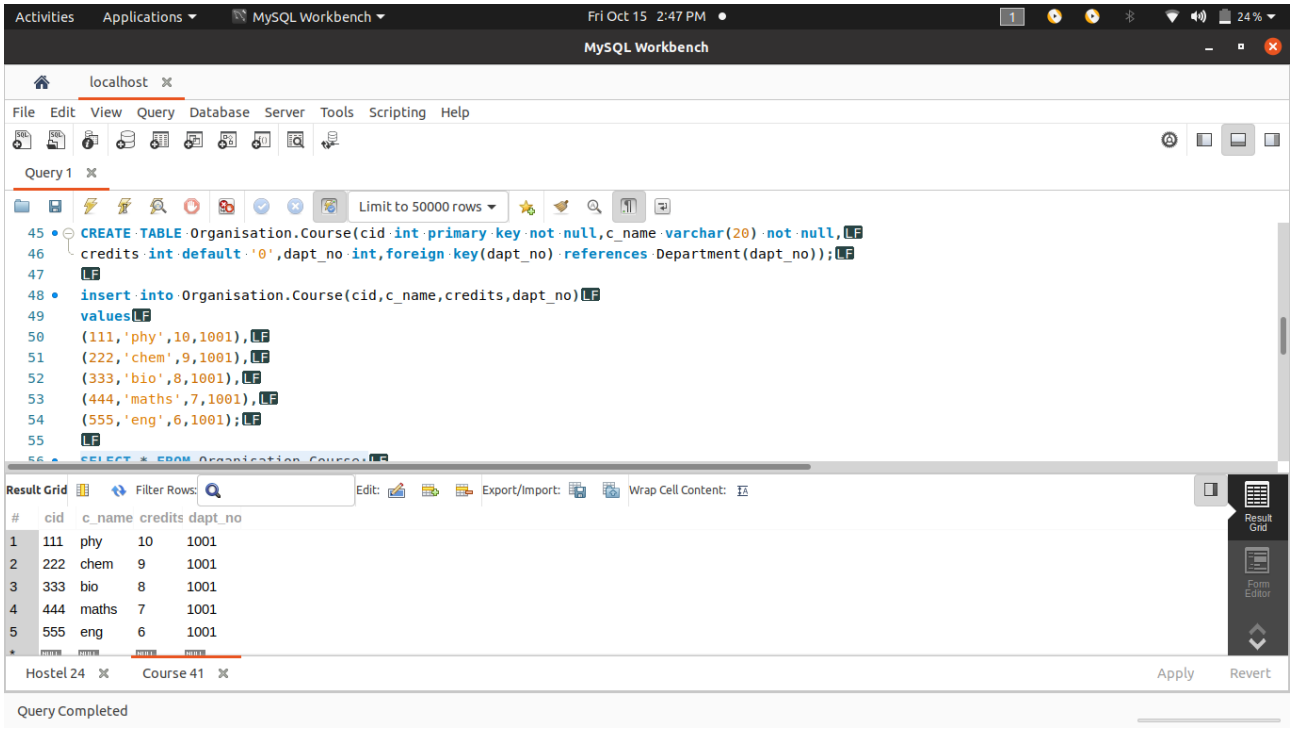


EXPERIMENT NO 2 **DATE:21 OCTOBER 2021**

Creating table Faculty and inserting values:

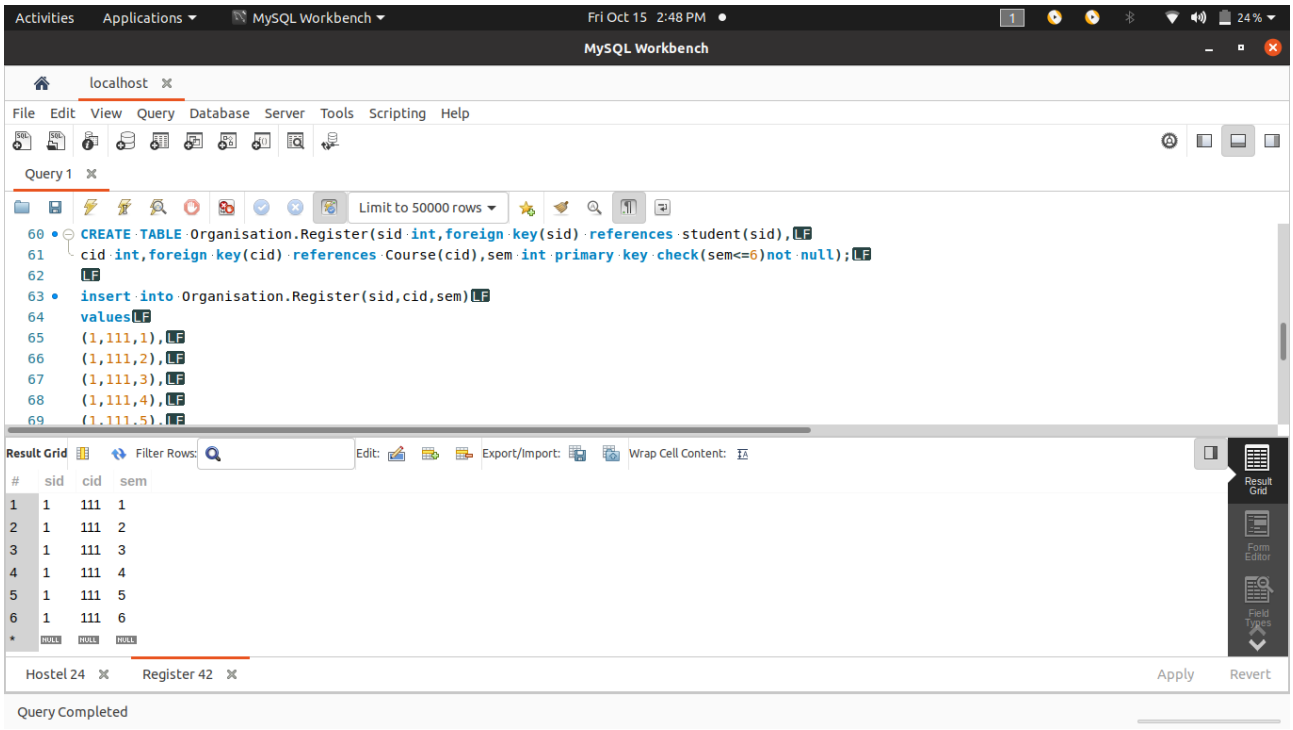


Creating table Course and inserting values:

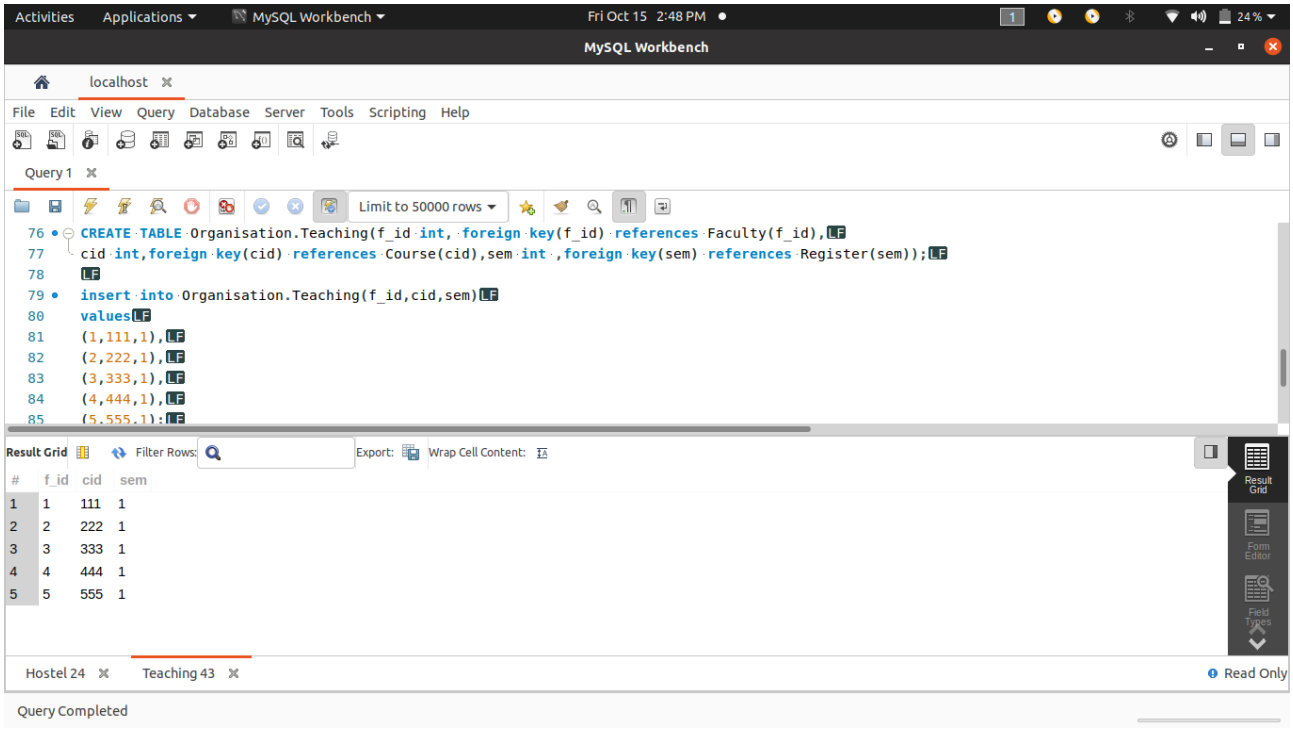


Creating table Register and inserting values:

EXPERIMENT NO 2 **DATE:21 OCTOBER 2021**

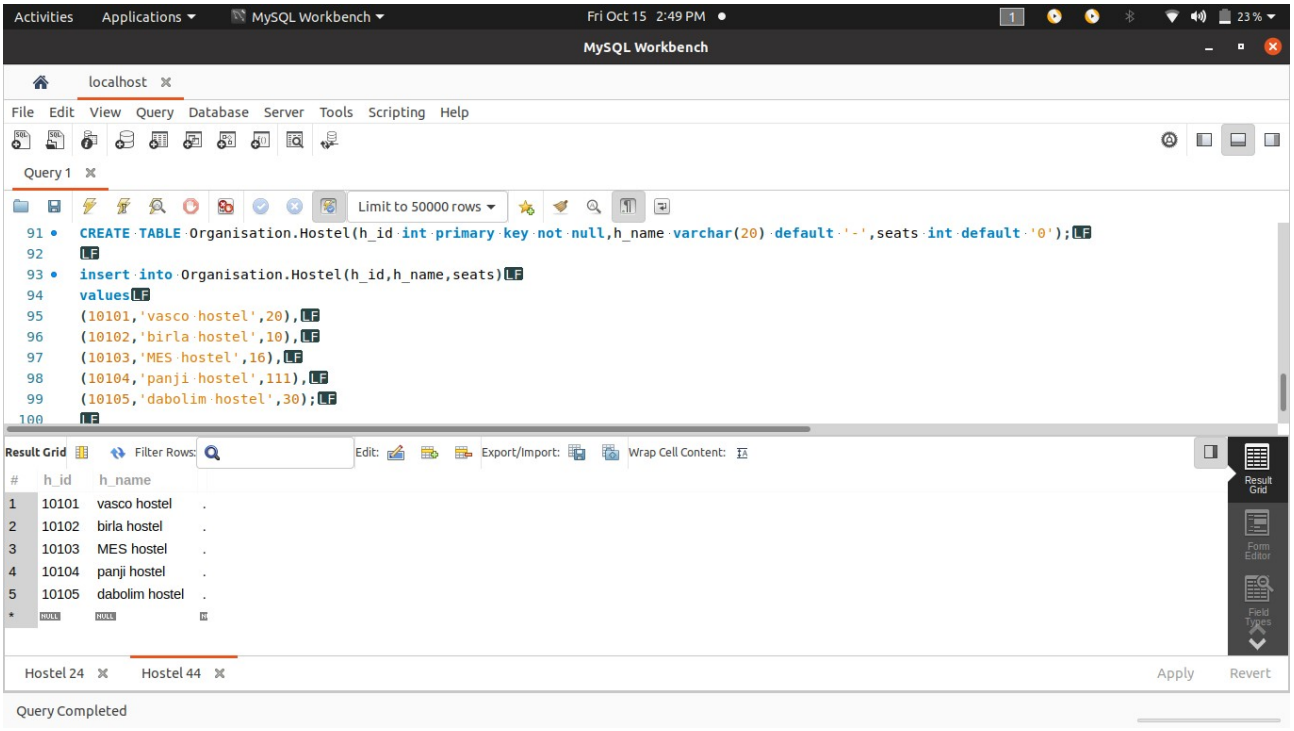


Creating table Teaching and inserting values:



EXPERIMENT NO 2 **DATE:21 OCTOBER 2021**

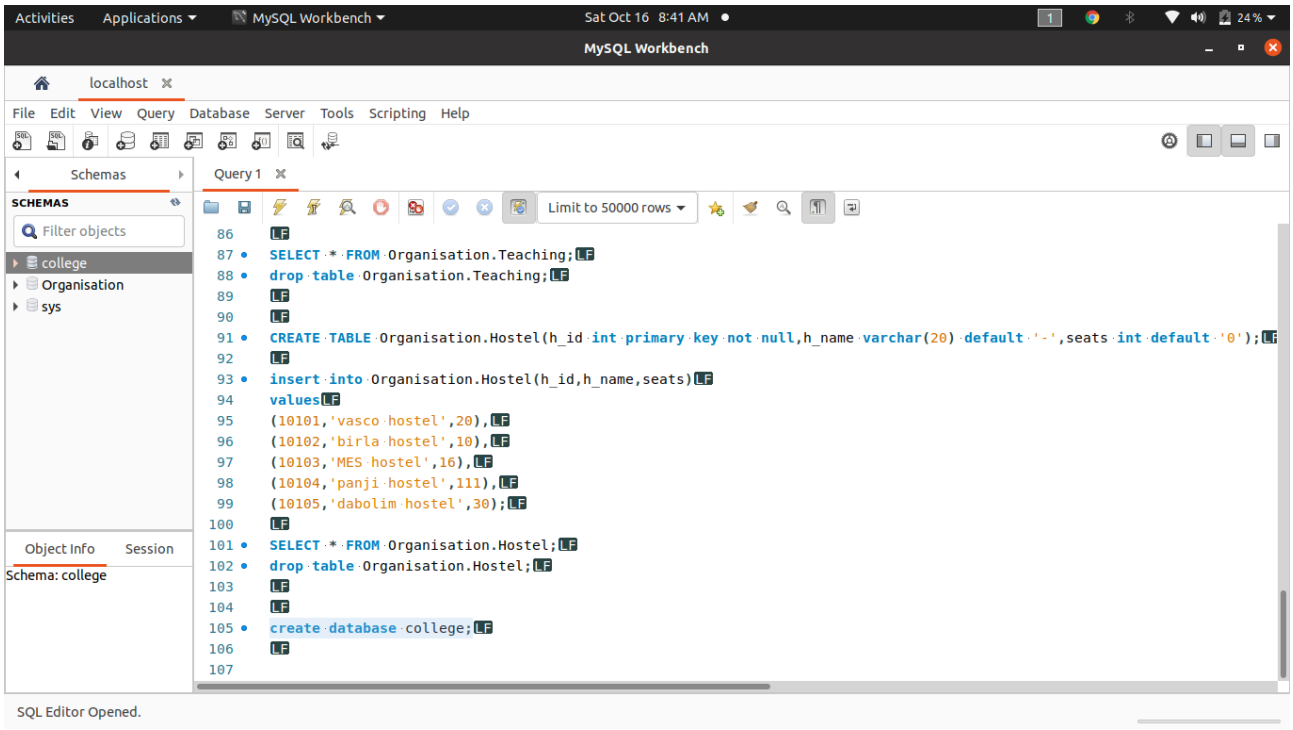
Creating table Hostel and inserting values:



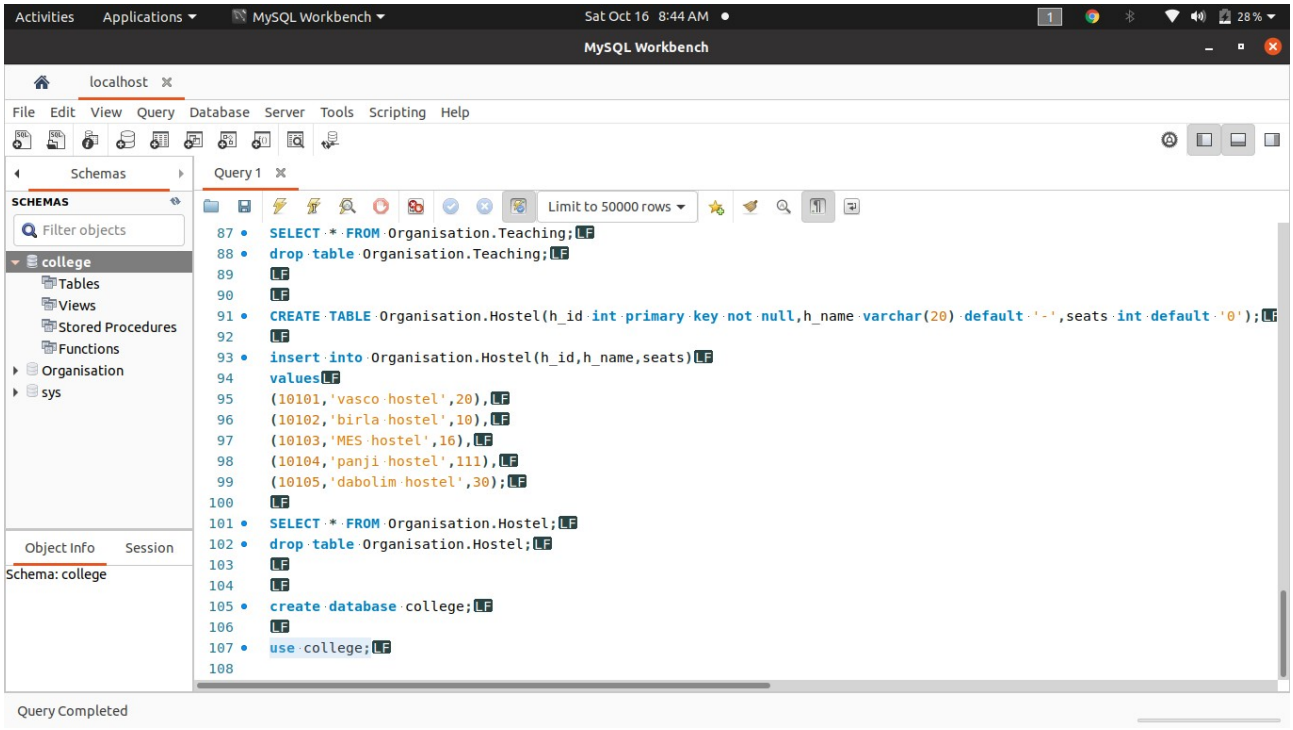
2)Included all the necessary constraints

EXPERIMENT NO 2 **DATE:21 OCTOBER 2021**

3)Created database college

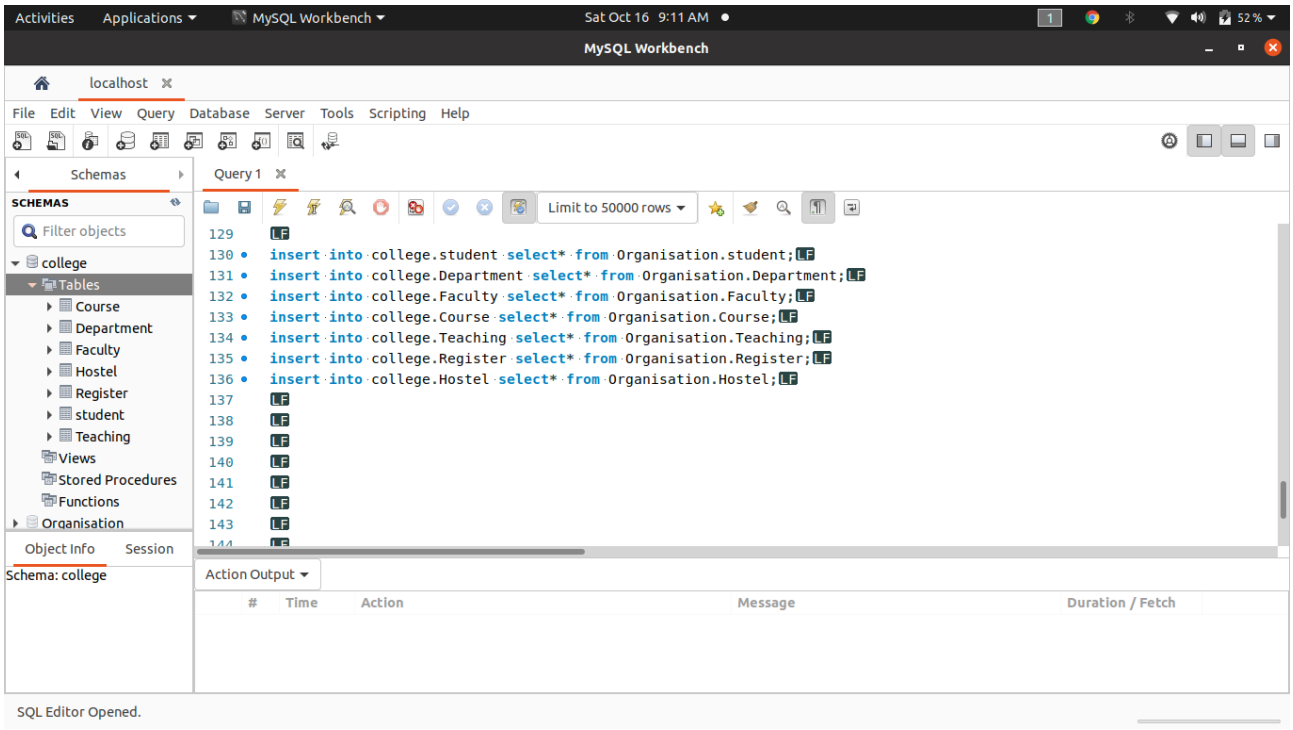


4) used college as current database



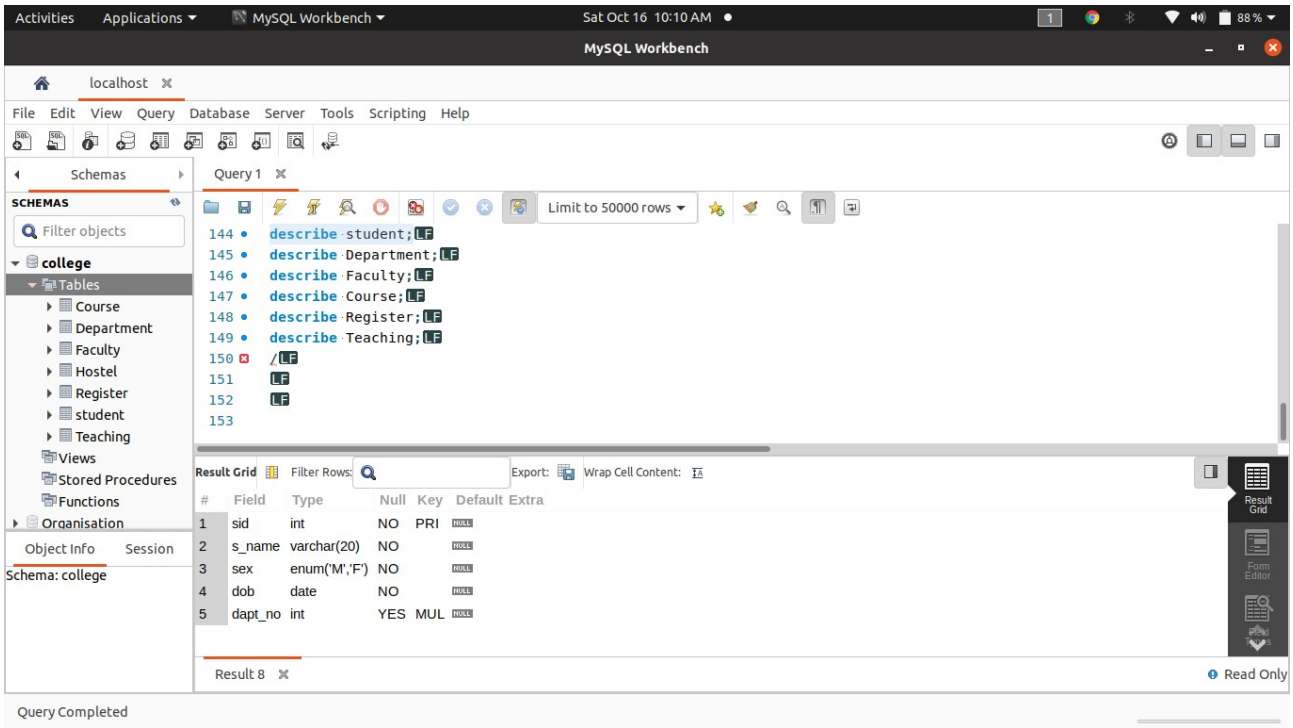
EXPERIMENT NO 2 **DATE:21 OCTOBER 2021**

5)Dispplay all the tables in college database



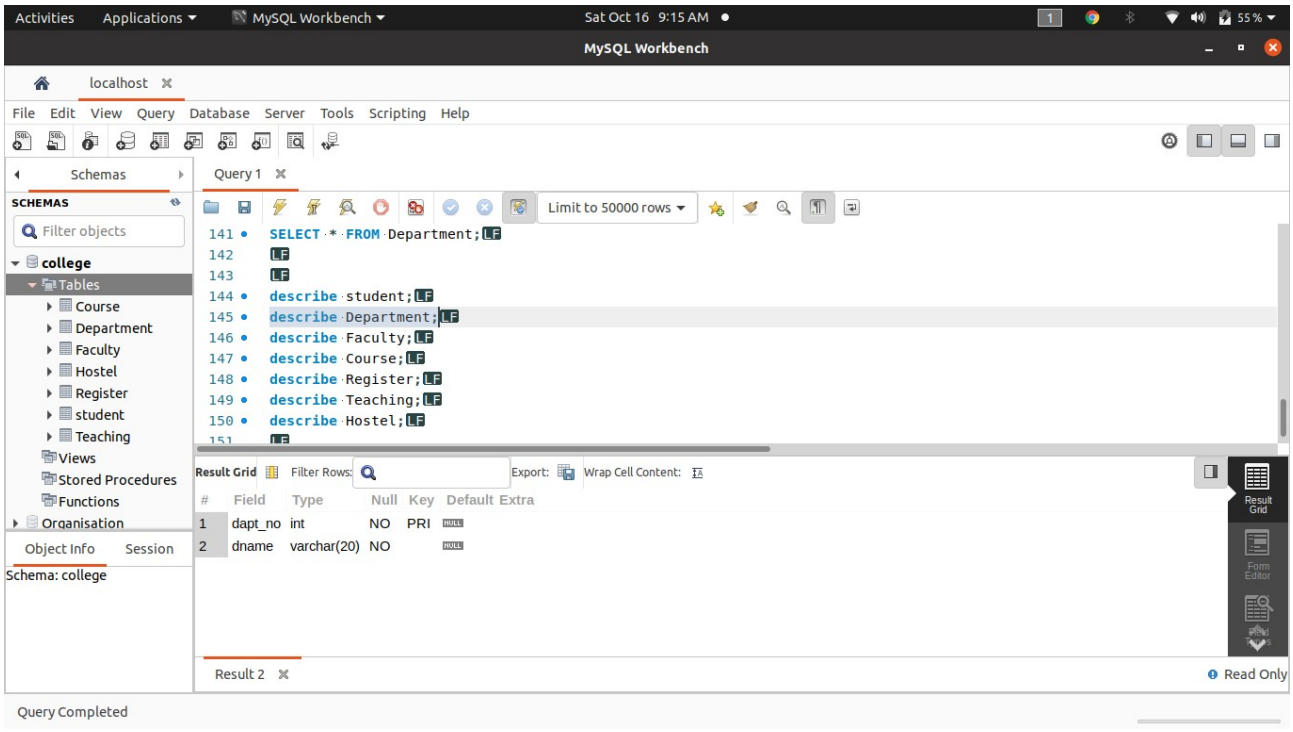
6)Describe the structure of all tables

STUDENT

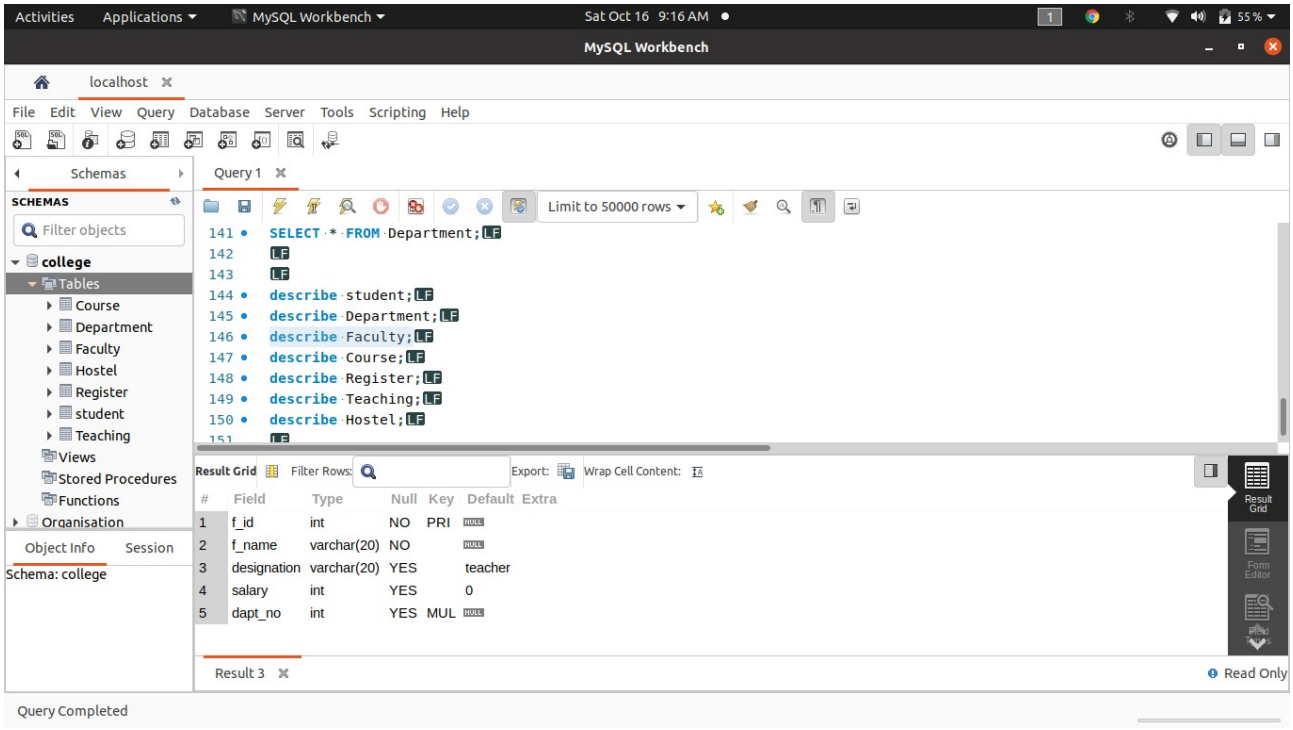


EXPERIMENT NO 2 **DATE:21 OCTOBER 2021**

DEPARTMENT

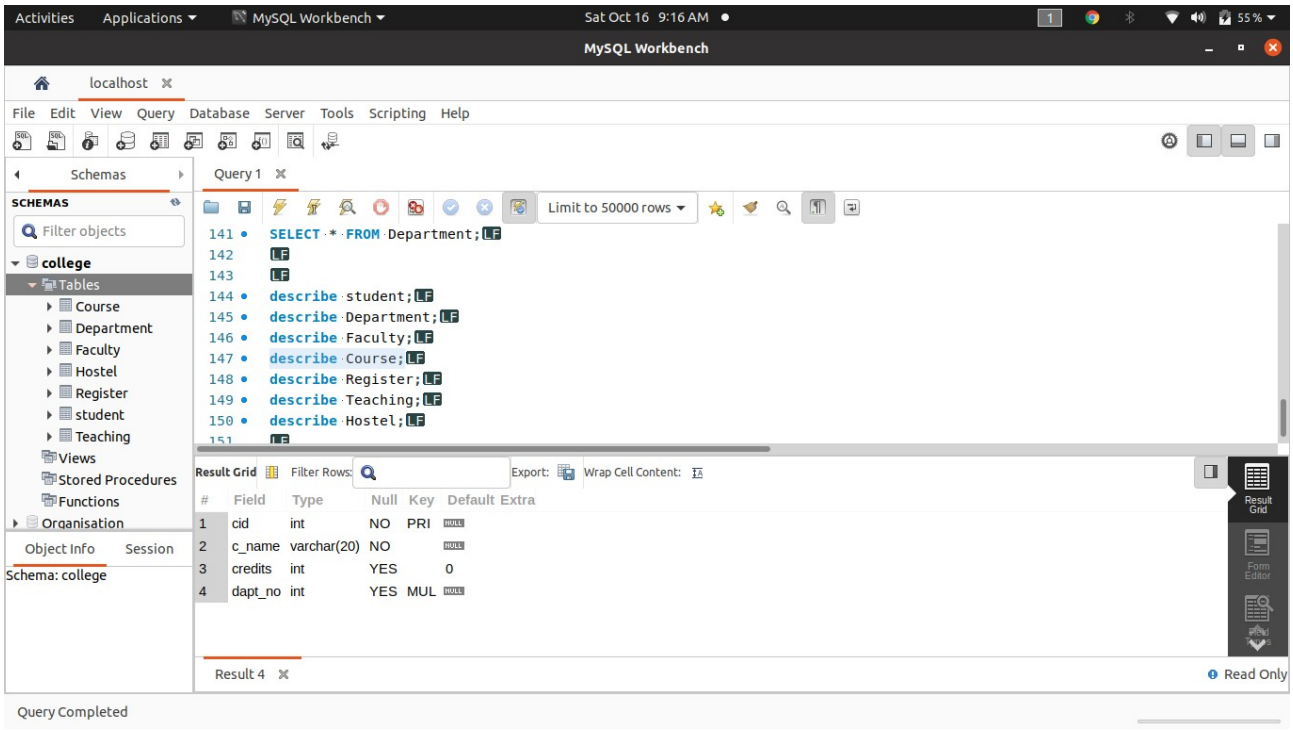


FACULTY

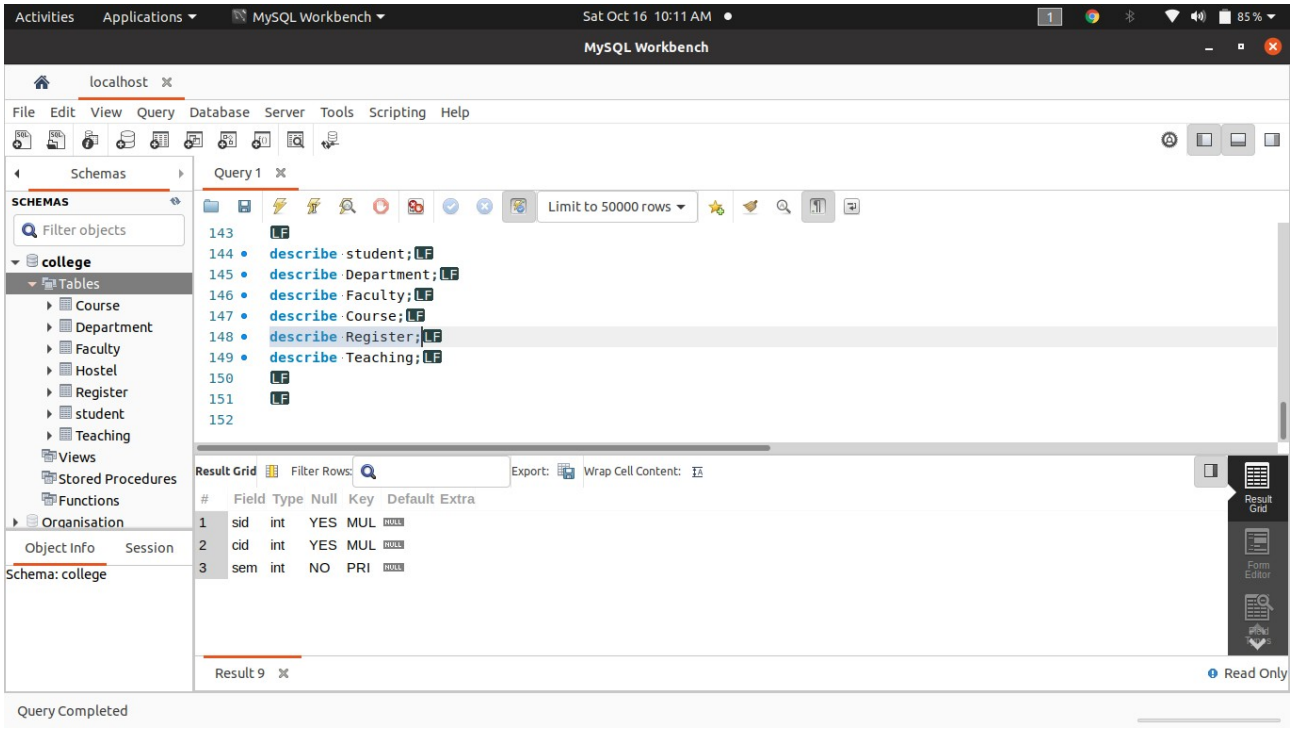


COURSE

EXPERIMENT NO 2 **DATE:21 OCTOBER 2021**

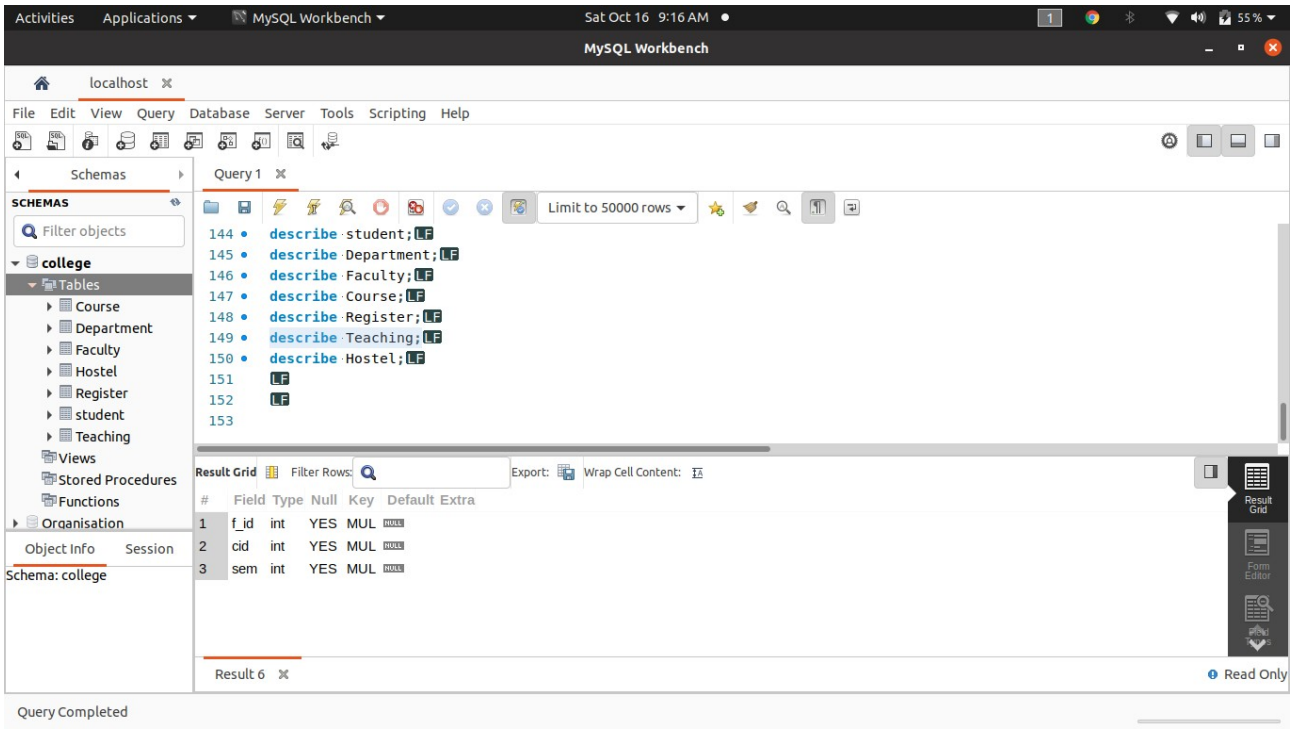


REGISTER

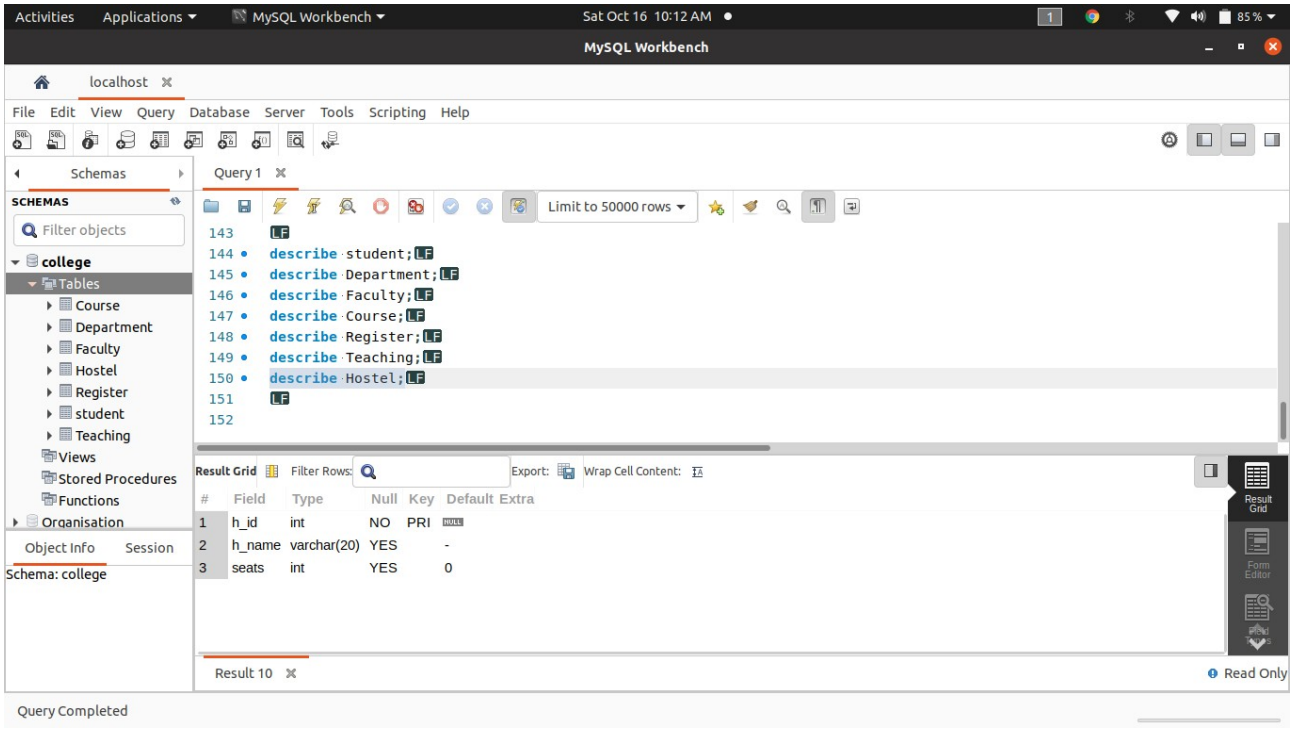


TEACHNG

EXPERIMENT NO 2 **DATE:21 OCTOBER 2021**



HOSTEL



EXPERIMENT NO 2 **DATE:21 OCTOBER 2021**

7)Modify the student table to add a new field ‘grade’