

Micro-Project Report

On

Submitted in partial fulfilment of the requirements

“Create a Database for COURSE MANAGEMENT SYSTEM”

For the award of the course of

Diploma of Engineering

In

Information technology

By

Name of the Students	Enrollment No.
Pathare Pranali Mangesh	2010510178
Patil Anant Ambadas	2010510179
Patil Shreya Suresh	2010510180
Patil Tejas Santosh	2010510181
Pawar Darshan Sunil	2010510182
Petkar Purva Shashim	2010510383

Under the guidance of

Subject Teacher

Mrs. S. D. Raut

(Department Of Information Technology)

DEPARTMENT OF INFORMATION TECHNOLOGY
GOVERNMENT POLYTECHNIC AWASARI (KHURD)



SEMESTER - 4th (2021-22)

CERTIFICATE

This is to certify the following students of semester 4th of Diploma in Information Technology of Institute: Government polytechnic Awasari (kh) (code : 1051) has completed the micro project satisfactorily in subject- DBMS for the academic year 2021-2022 as prescribed in the curriculum.

Sr. No.	Names of Group Members	Roll No.	Enrollment No.
1	Pathare Pranali Mangesh	20IF231	2010510378
2	Patil Anant Ambadas	20IF232	2010510379
3	Patil Shreya Suresh	20IF233	2010510380
4	Patil Tejas Santosh	20IF234	2010510381
5	Pawar Darshan Sunil	20IF235	2010510382
6	Petkar Purva Shashim	20IF236	2010510383

Guidance by
(Mrs. S. D. Raut)

H.O.D
(Dr.D.N.Rewadkar)

Principal
(Dr.D.R.Nandanwar)

Part – A

MAHARASHTRA STATE BOARD OF TECHNICAL EDUCATION



GOVERNMENT POLYTECHNIC, AWASARI (KH) TAL

– AMBEGAON, DIST – PUNE – 412405

MICROPROJECT

ACADEMIC YEAR : 2021-2022

COURSE NAME : Database Management System

COURSE CODE : 22416

BRANCH : Information Technology (SY)

TOPIC NAME : Create a Database for COURSE MANAGEMENT SYSTEM

MICRO PROJECT PROPOSAL

Aim: Create a database for COURSE MANAGEMENT SYSTEM

Benefits:

- We learn how to use fundamental concepts of database in DBMS.
- We learn how to use database product (MySQL) .
- All teammates learn how to make ER Diagram.
- All teammates learn how to use SQL command on tables and how to create relation between tables.
- All teammates understand actual process of database creation and Advance SQL concepts.

Course Outcome Addressed:

CO1: Create Database using SQL commands.

CO2: Manage Database using SQL commands.

CO3: Implement advance SQL concepts on Database.

CO4: Write PL/SQL code for database application.

Proposed Methodology:

1. Create a group of six students as one group under the guidance of subject teacher for micro project of DBMS.
2. Select a topic 'COURSE MANAGEMENT SYSTEM' for micro project.
3. Collect the information related to topic.
4. Represent Identifying database in hierarchical and network model and relation model.
5. Create a database for COURSE MANAGEMENT SYSTEM.
6. Enter the Data in to tables using query using Database product.
7. We Implement Advance SQL concepts on Database
8. We implement advance concept of PL/SQL code for database application.

Action plan:

S. No.	Details of activity	Planned Start date	Planned Finish date	Name of Responsible Team Members
1	Formation of project group and allocation of microproject title			Pathare Pranali Mangesh Patil Anant Ambadas Patil Shreya Suresh Patil Tejas Santosh Pawar Darshan Sunil Petkar Purva Shashim
2	Information search about the project and requirement analysis of the project.			
3	Actual Project / Project Assembling			
4	Testing of the Project			
5	Acquire the print out And submit it			
6	Submission of the project			

Resources Required: -

Sr. No.	Name of Resource	Specifications	Qty	Remarks
1	Software	MY SQL	1	-
2	Book	POD, DBMS	1	-

Names of Team Members with Roll Nos.

Sr. No.	Names of Group Members	Roll No.	Enrollment No.
1	Pathare Pranali Mangesh	20IF231	2010510378
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5	Pawar Darshan Sunil	20IF235	2010510382
6	Petkar Purva Shashim	20IF236	2010510383

Date : - / / 20

PART-B

Title of the Micro Project

“COURSE MANAGEMENT SYSTEM”

1.0 Brief Information:

A **course management system** (CMS) is a collection of software tools providing an online environment for course interactions. A CMS typically includes a variety of online tools and environments, such as:

- An area for faculty posting of class materials such as course syllabus and handouts
- An area for student posting of papers and other assignments
- A gradebook where faculty can record grades and each student can view his or her grades
- An integrated email tool allowing participants to send announcement email messages to the entire class or to a subset of the entire class
- A chat tool allowing synchronous communication among class participants
- A threaded discussion board allowing asynchronous communication among participants

In addition, a CMS is typically integrated with other databases in the university so that students enrolled in a particular course are automatically registered in the CMS as participants in that course.

The decision to use a CMS in a traditional face-to-face course has implications for course design that often go unnoticed by instructors in their initial use of such systems. This module lists technical and pedagogical tips that instructors should consider as they place materials into a CMS. While it is intended primarily for instructors who are using a CMS for the first time, instructors who have already used a CMS in other courses might benefit by using these tips as a checklist.

2.0 Aim of the Micro-Project:

Create a database on COURSE MANAGEMENT SYSTEM

3.0 Course Outcomes Addressed:

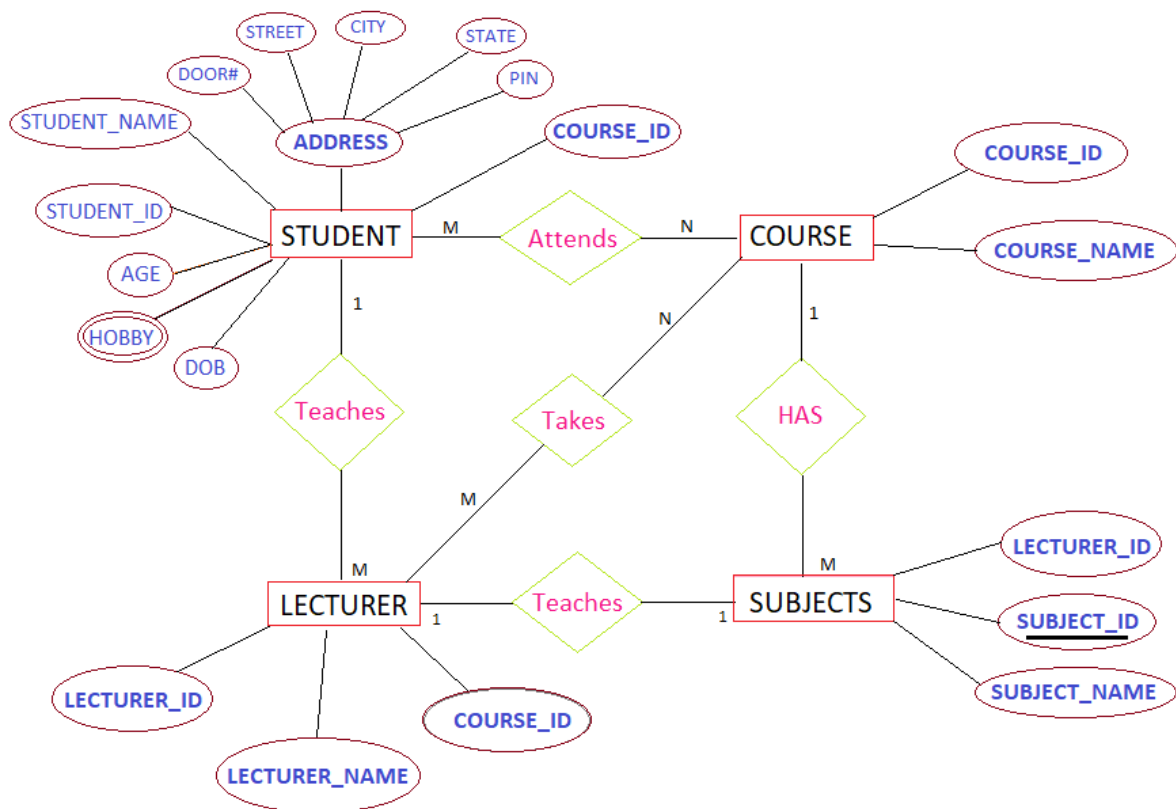
- CO1:** Create Database using SQL commands.
- CO2:** Manage Database using SQL commands.
- CO3:** Implement advance SQL concepts on Database.
- CO4:** Write PL/SQL code for database application.

4.0 Proposed Methodology:

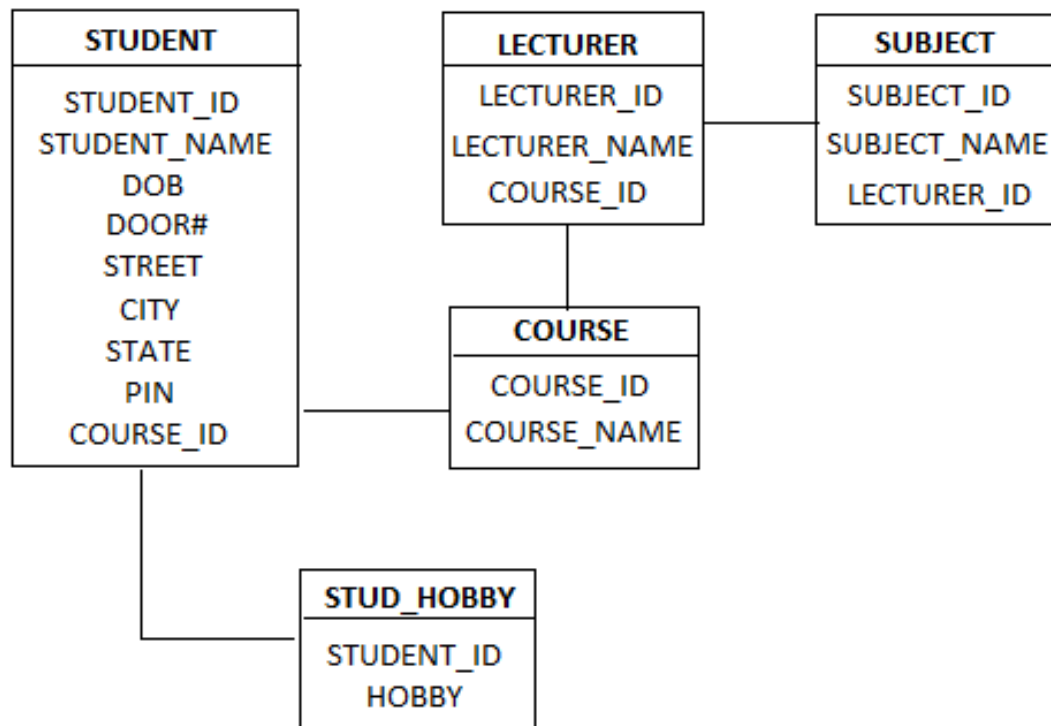
1. Create a group of six students as one group under the guidance of Subject teacher for micro project of DBMS.
2. Select a topic 'COURSE MANAGEMENT SYSTEM' for micro project.
3. Collect the information related to topic.
4. Create a database for Course Management System.
5. Enter the Data in to tables using query using Database product.
6. We Implement Advance SQL concepts on Database.
7. We implement advance concept of PL/SQL code for database application.

5.0 Outcome of micro project.

• ER Diagram

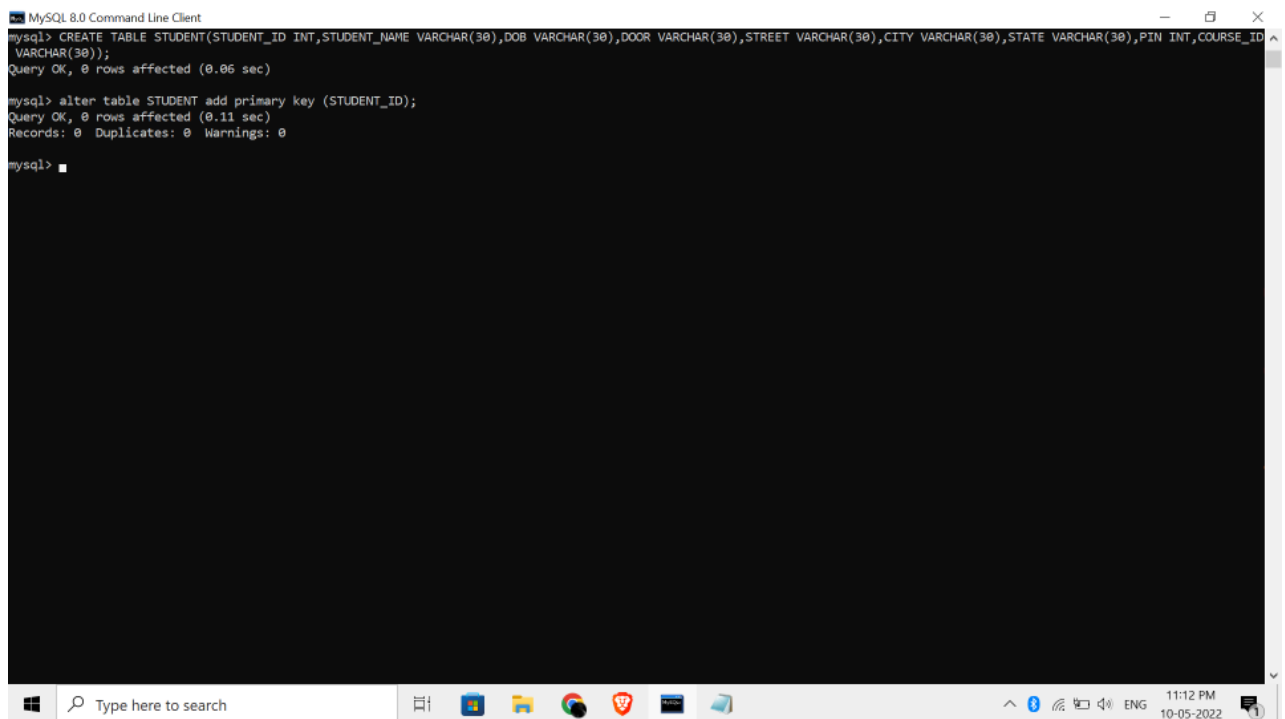


- **CREATE TABLE**



```
CREATE TABLE STUDENT ( STUDENT_ID INT,  
STUDENT_NAME VARCHAR(30),DOB VARCHAR(30),  
DOOR VARCHAR(30),STREET VARCHAR(30),  
CITY VARCHAR(30),STATE VARCHAR(30),  
PIN INT,COURSE_ID VARCHAR(30) );
```

```
alter table STUDENT add primary key (STUDENT_ID);
```



```
MySQL 8.0 Command Line Client  
mysql> CREATE TABLE STUDENT(STUDENT_ID INT,STUDENT_NAME VARCHAR(30),DOB VARCHAR(30),DOOR VARCHAR(30),STREET VARCHAR(30),CITY VARCHAR(30),STATE VARCHAR(30),PIN INT,COURSE_ID  
VARCHAR(30));  
Query OK, 0 rows affected (0.06 sec)  
  
mysql> alter table STUDENT add primary key (STUDENT_ID);  
Query OK, 0 rows affected (0.11 sec)  
Records: 0 Duplicates: 0 Warnings: 0  
  
mysql> █
```

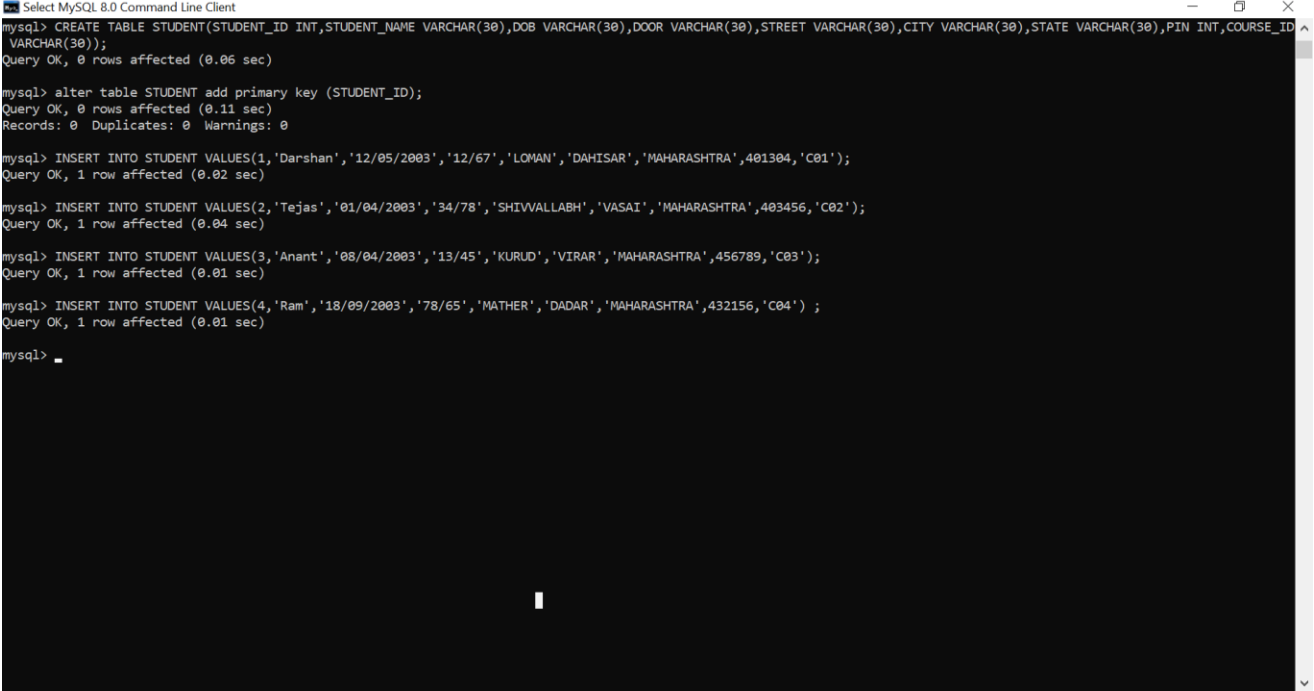
The screenshot shows a Windows taskbar at the bottom with the search bar and several application icons. The system clock in the bottom right corner displays the time as 11:12 PM and the date as 10-05-2022.

```
INSERT INTO STUDENT
VALUES(1,'Darshan','12/05/2003','12/67','LOMAN','DAHISAR','MAHARASHTRA',
401304,'C01');
```

```
INSERT INTO STUDENT
VALUES(2,'Tejas','01/04/2003','34/78','SHIVVALLABH','VASAI','MAHARASHTR
A',403456,'C02');
```

```
INSERT INTO STUDENT
VALUES(3,'Anant','08/04/2003','13/45','KURUD','VIRAR','MAHARASHTRA',45678
9,'C03');
```

```
INSERT INTO STUDENT
VALUES(4,'Ram','18/09/2003','78/65','MATHER','DADAR','MAHARASHTRA',4321
56,'C04');
```



```
Select MySQL 8.0 Command Line Client
mysql> CREATE TABLE STUDENT(STUDENT_ID INT,STUDENT_NAME VARCHAR(30),DOB VARCHAR(30),DOOR VARCHAR(30),STREET VARCHAR(30),CITY VARCHAR(30),STATE VARCHAR(30),PIN INT,COURSE_ID
VARCHAR(30));
Query OK, 0 rows affected (0.06 sec)

mysql> alter table STUDENT add primary key (STUDENT_ID);
Query OK, 0 rows affected (0.11 sec)
Records: 0 Duplicates: 0 Warnings: 0

mysql> INSERT INTO STUDENT VALUES(1,'Darshan','12/05/2003','12/67','LOMAN','DAHISAR','MAHARASHTRA',401304,'C01');
Query OK, 1 row affected (0.02 sec)

mysql> INSERT INTO STUDENT VALUES(2,'Tejas','01/04/2003','34/78','SHIVVALLABH','VASAI','MAHARASHTRA',403456,'C02');
Query OK, 1 row affected (0.04 sec)

mysql> INSERT INTO STUDENT VALUES(3,'Anant','08/04/2003','13/45','KURUD','VIRAR','MAHARASHTRA',456789,'C03');
Query OK, 1 row affected (0.01 sec)

mysql> INSERT INTO STUDENT VALUES(4,'Ram','18/09/2003','78/65','MATHER','DADAR','MAHARASHTRA',432156,'C04') ;
Query OK, 1 row affected (0.01 sec)

mysql>
```

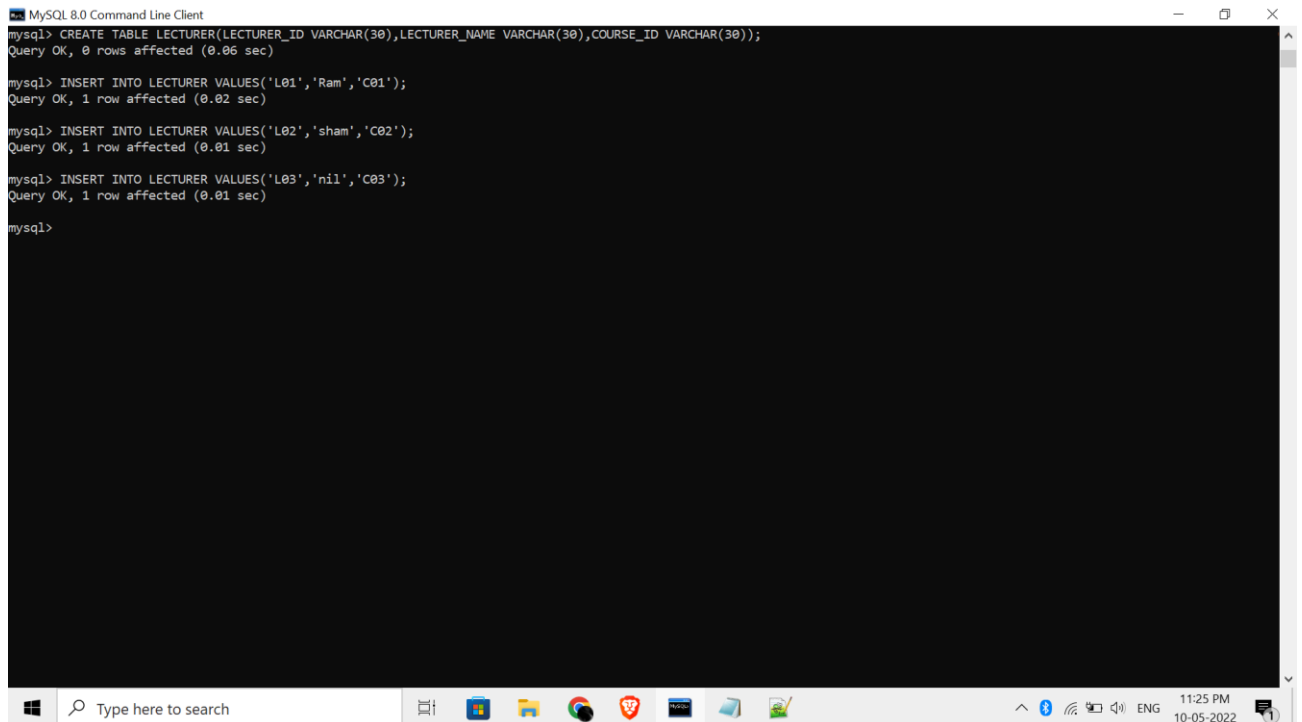
The screenshot shows a Windows taskbar at the bottom with the search bar and several application icons. The system tray on the right indicates the time is 11:17 PM on 10-05-2022.

```
CREATE TABLE LECTURER (LECTURER_ID  
VARCHAR(30),LECTURER_NAME VARCHAR(30),COURSE_ID  
VARCHAR(30));
```

```
INSERT INTO LECTURER VALUES('L01','Ram','C01');
```

```
INSERT INTO LECTURER VALUES('L02','sham','C02');
```

```
INSERT INTO LECTURER VALUES('L03','nil','C03');
```



```
MySQL 8.0 Command Line Client
mysql> CREATE TABLE LECTURER(LECTURER_ID VARCHAR(30),LECTURER_NAME VARCHAR(30),COURSE_ID VARCHAR(30));
Query OK, 0 rows affected (0.06 sec)

mysql> INSERT INTO LECTURER VALUES('L01','Ram','C01');
Query OK, 1 row affected (0.02 sec)

mysql> INSERT INTO LECTURER VALUES('L02','sham','C02');
Query OK, 1 row affected (0.01 sec)

mysql> INSERT INTO LECTURER VALUES('L03','nil','C03');
Query OK, 1 row affected (0.01 sec)

mysql>
```

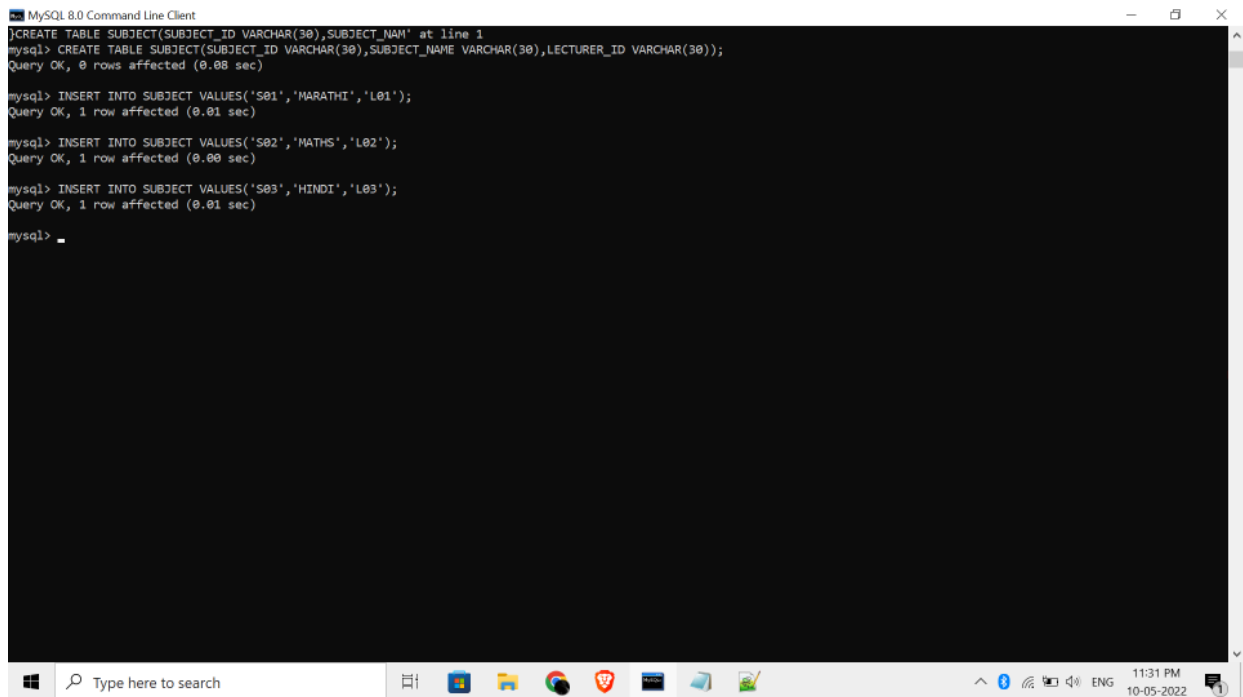
The screenshot shows a Windows taskbar at the bottom with the search bar and several application icons. The system clock in the bottom right corner indicates the time is 11:25 PM on 10-05-2022.

```
CREATE TABLE SUBJECT(SUBJECT_ID VARCHAR(30),SUBJECT_NAME  
VARCHAR(30),LECTURER_ID VARCHAR(30));
```

```
INSERT INTO SUBJECT VALUES('S01','MARATHI','L01');
```

```
INSERT INTO SUBJECT VALUES('S02','MATHS','L02');
```

```
INSERT INTO SUBJECT VALUES('S03','HINDI','L03');
```



```
MySQL 8.0 Command Line Client
)CREATE TABLE SUBJECT(SUBJECT_ID VARCHAR(30),SUBJECT_NAME
mysql> CREATE TABLE SUBJECT(SUBJECT_ID VARCHAR(30),SUBJECT_NAME VARCHAR(30),LECTURER_ID VARCHAR(30));
Query OK, 0 rows affected (0.08 sec)

mysql> INSERT INTO SUBJECT VALUES('S01','MARATHI','L01');
Query OK, 1 row affected (0.01 sec)

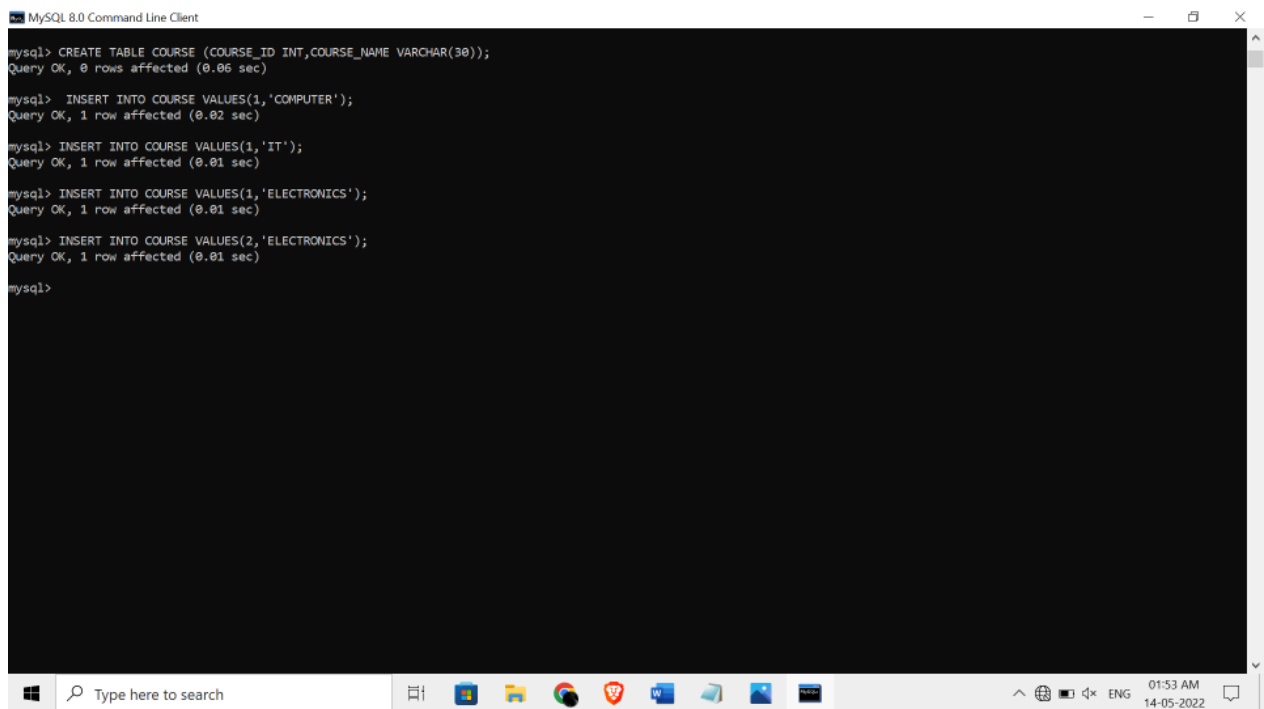
mysql> INSERT INTO SUBJECT VALUES('S02','MATHS','L02');
Query OK, 1 row affected (0.00 sec)

mysql> INSERT INTO SUBJECT VALUES('S03','HINDI','L03');
Query OK, 1 row affected (0.01 sec)

mysql> _
```

The screenshot shows a Windows taskbar at the bottom with the search bar and several application icons. The system clock in the bottom right corner displays the time as 11:31 PM and the date as 10-05-2022. The MySQL command line client window is titled 'MySQL 8.0 Command Line Client' and shows the successful execution of the SQL commands provided in the text above.

```
CREATE TABLE COURSE (COURSE_ID INT,COURSE_NAME VARCHAR(30));  
  
INSERT INTO COURSE VALUES(1,'COMPUTER');  
  
INSERT INTO COURSE VALUES(1,'IT');  
  
INSERT INTO COURSE VALUES(1,'ELECTRONICS');  
  
INSERT INTO COURSE VALUES(2,'ELECTRONICS');
```



```
mysql> CREATE TABLE COURSE (COURSE_ID INT,COURSE_NAME VARCHAR(30));  
Query OK, 0 rows affected (0.06 sec)  
  
mysql> INSERT INTO COURSE VALUES(1,'COMPUTER');  
Query OK, 1 row affected (0.02 sec)  
  
mysql> INSERT INTO COURSE VALUES(1,'IT');  
Query OK, 1 row affected (0.01 sec)  
  
mysql> INSERT INTO COURSE VALUES(1,'ELECTRONICS');  
Query OK, 1 row affected (0.01 sec)  
  
mysql> INSERT INTO COURSE VALUES(2,'ELECTRONICS');  
Query OK, 1 row affected (0.01 sec)  
  
mysql>
```

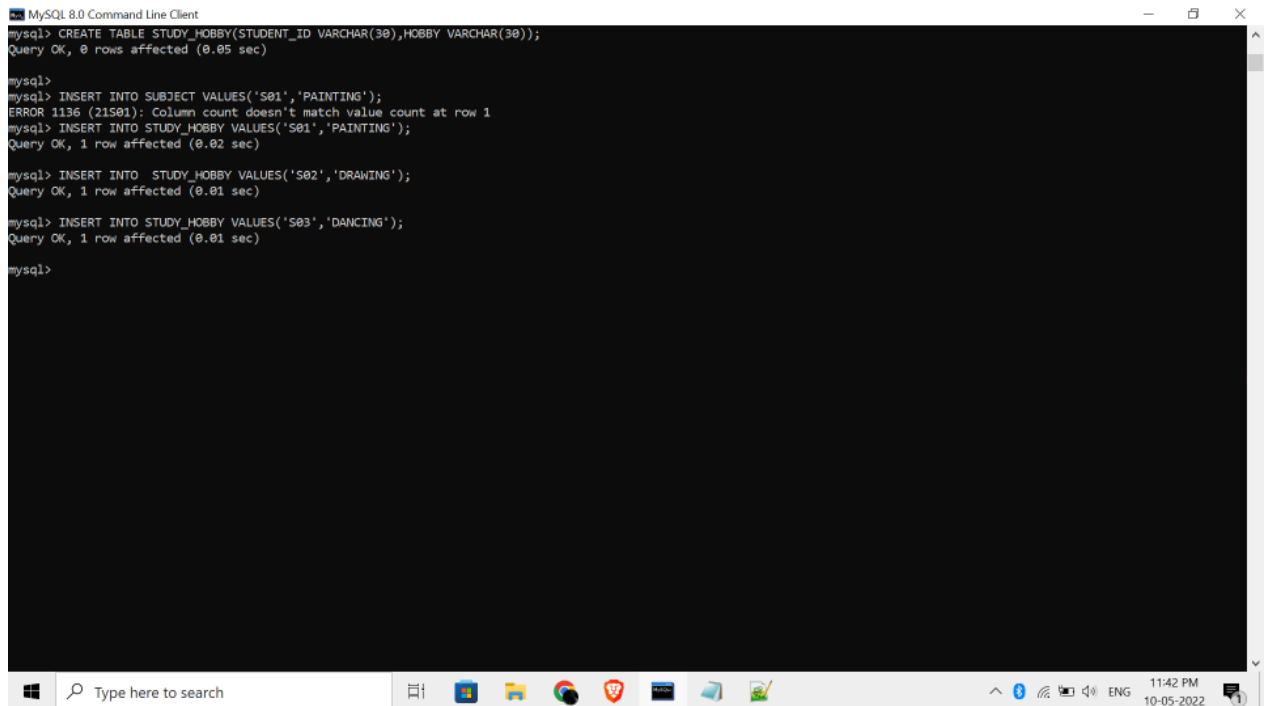
The screenshot shows a Windows taskbar at the bottom with the search bar and several application icons. The system clock in the bottom right corner displays the time as 01:53 AM on 14-05-2022.

```
CREATE TABLE STUDY_HOBBY(STUDENT_ID VARCHAR(30),HOBBY  
VARCHAR(30));
```

```
INSERT INTO STUDY_HOBBY VALUES('S01','PAINTING');
```

```
INSERT INTO STUDY_HOBBY VALUES('S02','DRAWING');
```

```
INSERT INTO STUDY_HOBBY VALUES('S03','DANCING');
```



```
MySQL 8.0 Command Line Client
mysql> CREATE TABLE STUDY_HOBBY(STUDENT_ID VARCHAR(30),HOBBY VARCHAR(30));
Query OK, 0 rows affected (0.05 sec)

mysql>
mysql> INSERT INTO SUBJECT VALUES('S01','PAINTING');
ERROR 1136 (21501): Column count doesn't match value count at row 1
mysql> INSERT INTO STUDY_HOBBY VALUES('S01','PAINTING');
Query OK, 1 row affected (0.02 sec)

mysql> INSERT INTO STUDY_HOBBY VALUES('S02','DRAWING');
Query OK, 1 row affected (0.01 sec)

mysql> INSERT INTO STUDY_HOBBY VALUES('S03','DANCING');
Query OK, 1 row affected (0.01 sec)

mysql>
```

The screenshot shows a Windows taskbar at the bottom with the search bar and several application icons. The system clock in the bottom right corner indicates the time is 11:42 PM on 10-05-2022.

Write Procedures, trigger, function:

PROCEDURES

A procedure (often called a stored procedure) is a subroutine like a subprogram in a regular computing language, stored in database. There are many useful applications of SQL procedures within a database or database application architecture. SQL procedures can be used to create simple scripts for quickly querying transforming, updating data, generating basic reports, improve application performance, modularizing applications, and improve overall database design, and database security

Features of SQL procedures

- Can contain SQL Procedural Language statements and features which support the implementation of control-flow logic around traditional static and dynamic SQL statements.
- Easy to implement, because they use a simple high-level, strongly-typed language.
- SQL procedures are more reliable than equivalent external procedures.
- Support input, output, and input-output parameter passing modes.
- Support a simple, but powerful condition and error-handling model.
- Return multiple results sets to the caller or to a client application.

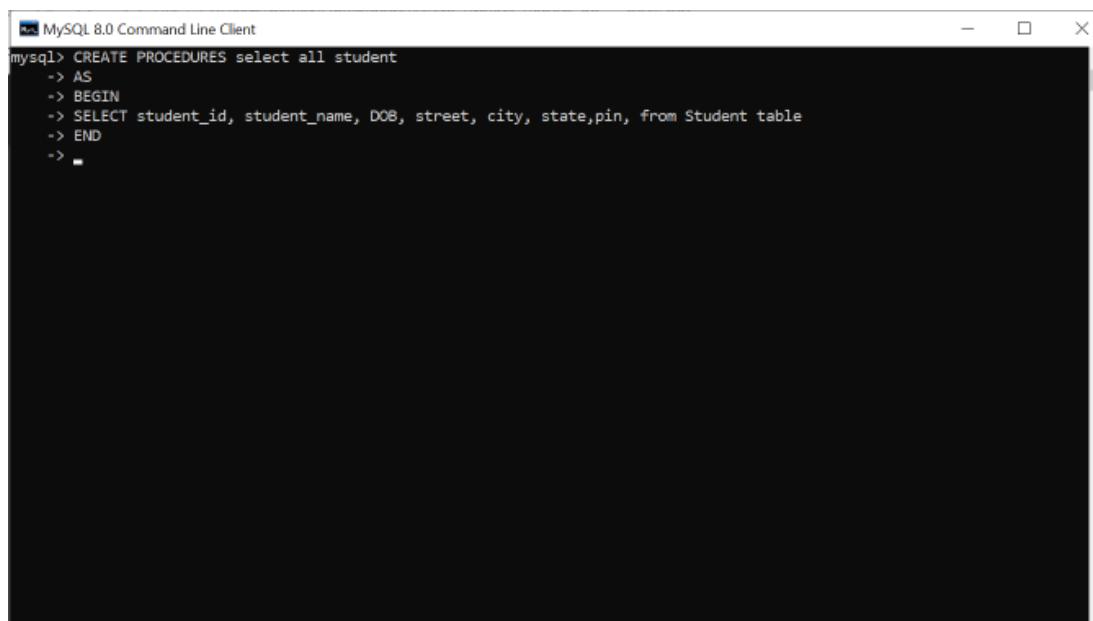
CREATE PROCEDURES select all student

AS

BEGIN

SELECT student_id, student_name, DOB, street, city, state, pin, from student table

END



```
MySQL 8.0 Command Line Client
mysql> CREATE PROCEDURE select all student
-> AS
-> BEGIN
-> SELECT student_id, student_name, DOB, street, city, state, pin, from Student table
-> END
-> 
```


FUNCTIONS

Select all the student name and convert it into upper case: `SELECT UCASE('student_name') FROM 'student' WHERE 1`

Select all the student name and convert it into lower case: `SELECT LCASE('student_name') FROM 'student' WHERE 1`

Removes leading and trailing spaces from student Name: `SELECT TRIM('student_name') FROM 'student' WHERE 1`

TRIGGERS

Triggers are stored programs, which are automatically executed or fired when some events occur. Triggers are, in fact, written to be executed in response to any of the following events

- A database manipulation (DML) statement (DELETE, INSERT, or UPDATE)
- A database definition (DDL) statement (CREATE, ALTER, or DROP).
- A database operation (SERVERERROR, LOGON, LOGOFF, STARTUP, or SHUTDOWN).

Triggers can be defined on the table, view, schema, or database with which the event is associated.

Benefits of Triggers

- Triggers can be written for the following purposes –
- Generating some derived column values automatically
- Enforcing referential integrity
- Event logging and storing information on table access
- Auditing
- Synchronous replication of tables
- Imposing security authorizations
- Preventing invalid transactions

Trigger for Insert Statement:
DELIMITER \$\$
CREATE TRIGGER student
ALTER INSERT ON student
FOR EACH ROW
BEGIN
INSERT INTO student_id
SET
student_id = NEW.student_id,
date = NOW(),
action = student " Details Inserted"
END\$\$ DELIMITER;

Trigger for Delete Statement:
DELIMITER \$\$
CREATE TRIGGER delete_subject
BEFORE DELETE ON subject
FOR EACH ROW
BEGIN
DELETE FROM subject
WHERE student_id = OLD student_id;
END\$\$
DELIMITER;

SECURITY ON DATABASE GRANT:

GRANT select, Insert ,Update, Delete ON Students To darshan;

GRANT All ON Student To darshan;

REVOKE:

REVOKE Delete ON Students FROM darshan;

REVOKE All ON Students FROM darshan;