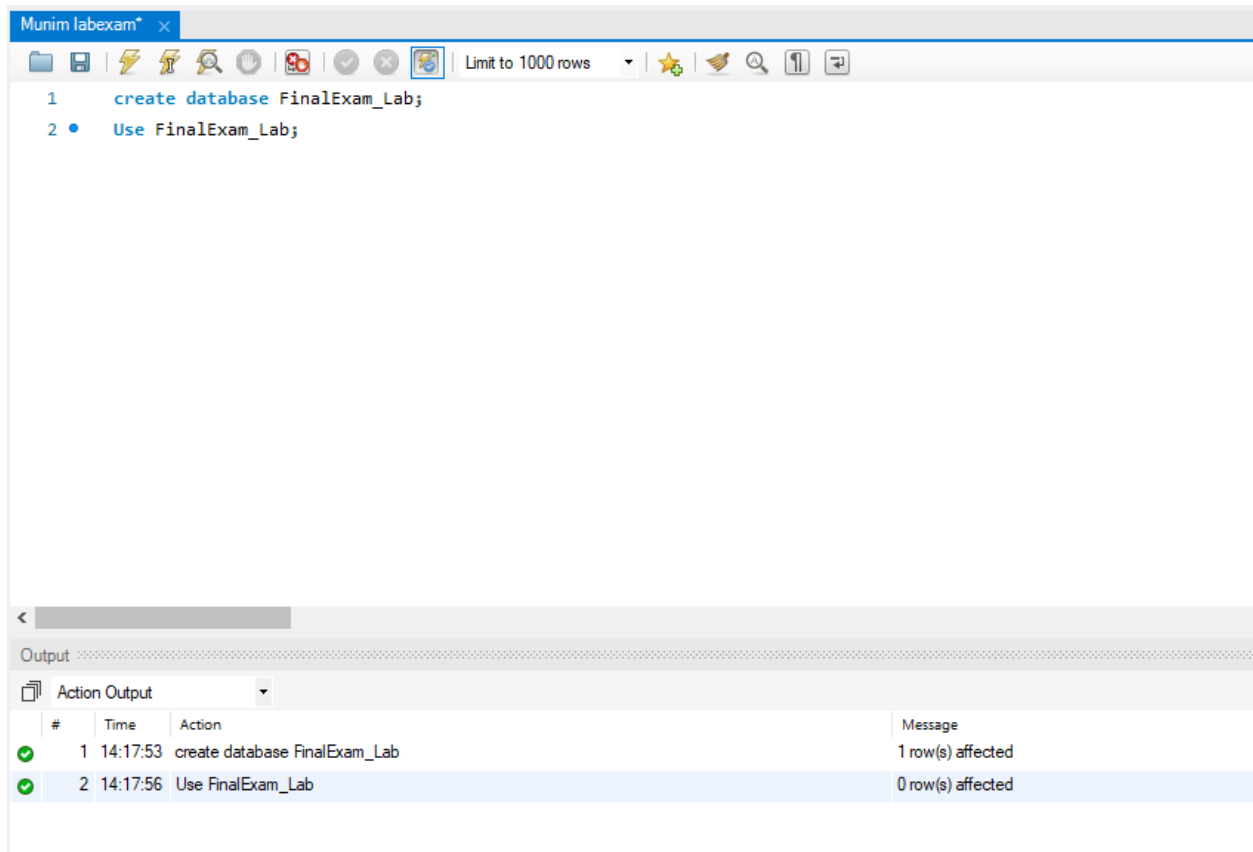


**Name: Abdul Munim Usmani**

**Roll no: SE211062**

**Subject: Database Systems Lab**

Q1: Create a database as "FinalExam-Lab".



The screenshot shows a SQL IDE window titled "Munim labexam\* x". The main editor contains two SQL statements:

```
1 create database FinalExam_Lab;  
2 Use FinalExam_Lab;
```

The output window, titled "Output", shows the execution results under the "Action Output" tab:

#	Time	Action	Message
✓ 1	14:17:53	create database FinalExam_Lab	1 row(s) affected
✓ 2	14:17:56	Use FinalExam_Lab	0 row(s) affected

Q2: Create the table Employees and display results that only include employees with their managers.

TABLE CREATED:

Munim labexam\*

Limit to 1000 rows

```

4 • CREATE TABLE Employee(
5   Emp_ID INT ,
6   Emp_Name VARCHAR(50),
7   Emp_Profile VARCHAR(100),
8   Emp_Country VARCHAR(50),
9   ManagerId INT
10  );
11
12
13 • INSERT INTO Employee(Emp_ID,Emp_Name,Emp_Profile,Emp_Country,ManagerId) VALUES (101,'Salman Jave
14 • INSERT INTO Employee(Emp_ID,Emp_Name,Emp_Profile,Emp_Country,ManagerId) VALUES (104,'Raj Choundh
15 • INSERT INTO Employee(Emp_ID,Emp_Name,Emp_Profile,Emp_Country,ManagerId) VALUES (105,'Shanti Desa
16 • INSERT INTO Employee(Emp_ID,Emp_Name,Emp_Profile,Emp_Country,ManagerId) VALUES (108,'Ruba Arif',
17 • INSERT INTO Employee(Emp_ID,Emp_Name,Emp_Profile,Emp_Country,ManagerId) VALUES (109,'Khan Khatta
18
19 • SELECT Emp_Name,ManagerId FROM Employee;

```

Output

Action Output

#	Time	Action	Message
✓ 1	14:17:53	create database FinalExam_Lab	1 row(s) affected
✓ 2	14:17:56	Use FinalExam_Lab	0 row(s) affected
✓ 3	14:29:02	CREATE TABLE Employee( Emp_ID INT , Emp_Name VARCHAR(50), Emp_Profile VARCHAR(100...	0 row(s) affected

Displaying results that only include employees with their managers\_id

Munim labexam

Limit to 1000 rows

```

15 • INSERT INTO Employee(Emp_ID,Emp_Name,Emp_Profile,Emp_Country,ManagerId) VALUES (105,'Shanti Desai','Software Engineer','Paks
16 • INSERT INTO Employee(Emp_ID,Emp_Name,Emp_Profile,Emp_Country,ManagerId) VALUES (108,'Ruba Arif','Development Executive','Eur
17 • INSERT INTO Employee(Emp_ID,Emp_Name,Emp_Profile,Emp_Country,ManagerId) VALUES (109,'Khan Khattak','Marketing Manager','Mexi
18
19 • SELECT Emp_Name,ManagerId FROM Employee;

```

Result Grid

Emp_Name	ManagerId
Salman Javed	104
Raj Choundhary	108
Shanti Desai	101
Ruba Arif	101
Khan Khattak	1000

Employee 1

Output

Action Output

#	Time	Action	Message
5	14:30:26	INSERT INTO Employee(Emp_ID,Emp_Name,Emp_Profile,Emp_Country,ManagerId) VALUES (1...	1 row(s) affected
6	14:30:26	INSERT INTO Employee(Emp_ID,Emp_Name,Emp_Profile,Emp_Country,ManagerId) VALUES (1...	1 row(s) affected
7	14:30:26	INSERT INTO Employee(Emp_ID,Emp_Name,Emp_Profile,Emp_Country,ManagerId) VALUES (1...	1 row(s) affected
8	14:30:26	INSERT INTO Employee(Emp_ID,Emp_Name,Emp_Profile,Emp_Country,ManagerId) VALUES (1...	1 row(s) affected
9	14:30:33	SELECT Emp_Name,ManagerId FROM Employee LIMIT 0, 1000	5 row(s) returned

Q3: Consider a scenario where a customer can have many mobiles while a mobile is owned by only one customer. How should data be structured to support Join Operation in a one-to-many relationship? ( All required constraints need to be specified accordingly)

The screenshot shows a SQL IDE interface with a query editor and a results pane.

**Query Editor:**

```

46 • SELECT c.First_Name, c.Last_Name, m.Model_Name
47 FROM Customer c
48 JOIN Mobile m ON c.Customer_ID = m.Customer_ID
49 WHERE c.Customer_ID = 2;

```

**Results Pane:**

First_Name	Last_Name	Model_Name
Isha	Joshi	Infinix Hot 4
Isha	Joshi	Samsung S6

**Action Output:**

#	Time	Action	Message
✓ 33	14:58:21	CREATE TABLE Customer ( Customer_ID INT PRIMARY KEY, First_Name VARCHAR(50), L...	0 row(s) affected
✓ 34	14:58:27	INSERT INTO Customer (Customer_ID, First_Name, Last_Name, Email) VALUES (1, 'Sasha', 'Fr...	3 row(s) affected Records: 3 Duplicates: 0 Warnings: 0
✓ 35	14:58:31	CREATE TABLE Mobile ( Mobile_ID INT PRIMARY KEY, Model_Name VARCHAR(50), Cust...	0 row(s) affected
✓ 36	14:58:35	INSERT INTO Mobile (Mobile_ID, Model_Name, Customer_ID) VALUES (109, 'Infinix Hot 4', 2), ...	3 row(s) affected Records: 3 Duplicates: 0 Warnings: 0
✓ 37	14:58:42	SELECT c.First_Name, c.Last_Name, m.Model_Name FROM Customer c JOIN Mobile m ON c.C...	2 row(s) returned

Q4: Students can be enrolled in any number of classes and in one class there can be more than one students enrolled

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SQLAdditions

Automatic context help disabled. Use the toolbar manually get help for the current caret position or toggle automatic help.

```

91
92 • SELECT Student.Student_ID, Student.Student_Name, Class.Class_ID, Class.Class_Name
93 FROM Student
94 JOIN Enrollment ON Student.Student_ID = Enrollment.Student_ID
95 JOIN Class ON Enrollment.Class_ID = Class.Class_ID;
96

```

Result Grid

Student_ID	Student_Name	Class_ID	Class_Name
1	Sara Faisal	1	Maths
1	Sara Faisal	2	Science
2	Rohit Sharma	1	Maths
3	Ruhab Zaidi	2	Science
3	Ruhab Zaidi	3	English

Result 4 x

Read Only Context Help Snippets

Output

Action Output

#	Time	Action	Message	Duration / Fetch
41	15:10:00	INSERT INTO Class (Class_ID, Class_Name) VALUES (1, 'Maths'), (2, 'Science'), (3, 'English'), (4...	5 row(s) affected Records: 5 Duplicates: 0 Warnings: 0	0.062 sec
42	15:10:11	CREATE TABLE Enrollment ( Enrollment_ID INT PRIMARY KEY, Student_ID INT, Class_ID I...	0 row(s) affected	0.188 sec
43	15:10:17	INSERT INTO Enrollment (Enrollment_ID, Student_ID, Class_ID) VALUES (1, 1, 1), (2, 1, 2), (3, 2...	5 row(s) affected Records: 5 Duplicates: 0 Warnings: 0	0.062 sec
44	15:32:15	SELECT * FROM Enrollment LIMIT 0, 1000	5 row(s) returned	0.000 sec / 0.000 sec
45	15:32:25	SELECT Student.Student_ID, Student.Student_Name, Class.Class_ID, Class.Class_Name FRO...	5 row(s) returned	0.000 sec / 0.000 sec

Showing bridge Table Relation:

Munim labexam\*

SQLAdditions

Automatic context help disabled. Use the toolbar manually get help for the current caret position or toggle automatic help.

```

86 (3, 2, 1),
87 (4, 3, 2),
88 (5, 3, 3);
89
90 • SELECT * FROM Enrollment;
91

```

Result Grid

Enrollment_ID	Student_ID	Class_ID
1	1	1
2	1	2
3	2	1
4	3	2
5	3	3
6	NULL	NULL

Enrollment 5 x

Apply Context Help Snippets

Output

Action Output

#	Time	Action	Message	Duration / Fetch
42	15:10:11	CREATE TABLE Enrollment ( Enrollment_ID INT PRIMARY KEY, Student_ID INT, Class_ID I...	0 row(s) affected	0.188 sec
43	15:10:17	INSERT INTO Enrollment (Enrollment_ID, Student_ID, Class_ID) VALUES (1, 1, 1), (2, 1, 2), (3, 2...	5 row(s) affected Records: 5 Duplicates: 0 Warnings: 0	0.062 sec
44	15:32:15	SELECT * FROM Enrollment LIMIT 0, 1000	5 row(s) returned	0.000 sec / 0.000 sec
45	15:32:25	SELECT Student.Student_ID, Student.Student_Name, Class.Class_ID, Class.Class_Name FRO...	5 row(s) returned	0.000 sec / 0.000 sec
46	15:34:36	SELECT * FROM Enrollment LIMIT 0, 1000	5 row(s) returned	0.000 sec / 0.000 sec

Q5: According to the scenario given in Q4 arrange the data in a table to query the number of students enrolled in Maths class.

Munim labexam\*

Limit to 1000 rows

```

106 );
107
108 • SELECT COUNT(*) AS Enrolled_Students
109 FROM Enrollment
110 WHERE Class_ID = 1;
111

```

Result Grid

Enrolled_Students
2

Result 6

Output

Action Output

#	Time	Action	Message
✓ 43	15:10:17	INSERT INTO Enrollment (Enrollment_ID, Student_ID, Class_ID) VALUES (1, 1, 1), (2, 1, 2), (3, 2...	5 row(s) affected Records: 5 Duplicates: 0 Warnings: 0
✓ 44	15:32:15	SELECT * FROM Enrollment LIMIT 0, 1000	5 row(s) returned
✓ 45	15:32:25	SELECT Student.Student_ID, Student.Student_Name, Class.Class_ID, Class.Class_Name FRO...	5 row(s) returned
✓ 46	15:34:36	SELECT * FROM Enrollment LIMIT 0, 1000	5 row(s) returned
✓ 47	15:38:51	SELECT COUNT(*) AS Enrolled_Students FROM Enrollment WHERE Class_ID = 1 LIMIT 0, 1000	1 row(s) returned

Q6: Write down query to produce the output given below.

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```

132
133 • SELECT d.EmployeeID, d.First_Name, p.Project_Name
134 FROM Employee_Detail d
135 JOIN ProjectDetail p ON d.EmployeeID = p.EmployeeID
136 WHERE d.First_Name = 'Vikas' OR d.First_Name = 'Ashish';
137

```

Result Grid

EmployeeID	First_Name	Project_Name
1	Vikas	TaskTrack
1	Vikas	CLP
1	Vikas	Survey Management
3	Ashish	TaskTrack
3	Ashish	GRS
3	Ashish	DDS

Result 7 x

Output

Action Output

#	Time	Action	Message
✓ 55	15:44:30	create table ProjectDetail( ProjectDetail_ID INT PRIMARY KEY, EmployeeID int, FOREIGN KEY ...	0 row(s) affected
✗ 56	15:44:37	INSERT INTO Enrollment (Enrollment_ID, EmployeeID ,Project_Name ) VALUES (1, 1, 'TaskTra...	Error Code: 1054. Unknown column 'EmployeeID' in 'field list'
✓ 57	15:45:38	INSERT INTO ProjectDetail(ProjectDetail_ID, EmployeeID ,Project_Name ) VALUES (1, 1, 'Task...	8 row(s) affected Records: 8 Duplicates: 0 Warnings: 0
✗ 58	15:51:41	SELECT d.EmployeeID, d.First_Name, p.Project_Name FROM Employee_Detail d JOIN Project_...	Error Code: 1146. Table 'finalexam_lab.project_detail' doesn't exist
✓ 59	15:52:28	SELECT d.EmployeeID, d.First_Name, p.Project_Name FROM Employee_Detail d JOIN ProjectD...	6 row(s) returned

Q7: Write a stored procedure that accepts an integer and output as corresponding word format: For example if user input 45, output should be produced as Forty five.

Munim labexam\*

```

208 END//
209
210 DELIMITER ;
211
212 • CALL NumberToWord2(45);
213

```

Result Grid

CONCAT(' tens, ', ones)
Forty Five

Result 12 x

Output

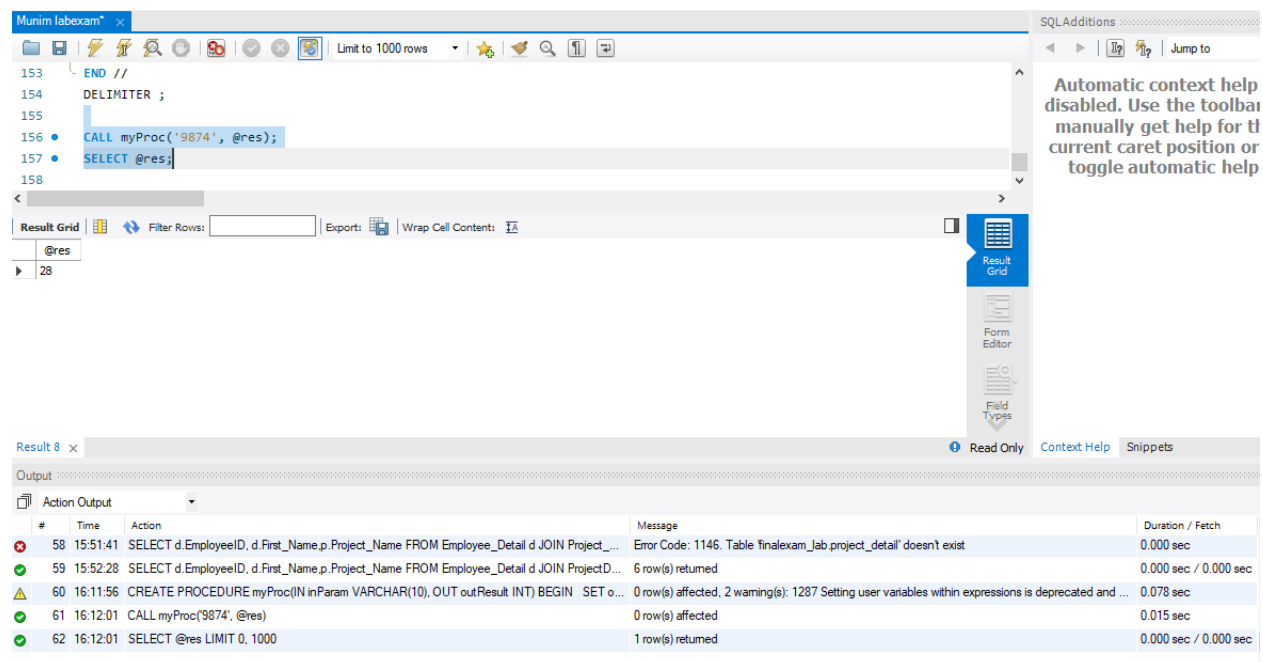
Action Output

#	Time	Action	Message	Duration / Fetch
✓ 72	16:24:47	CALL update_salary()	1 row(s) returned	0.000 sec / 0.000 sec
✓ 73	16:24:47	CALL update_salary()	1 row(s) returned	- / 0.000 sec
✓ 74	16:24:47	CALL update_salary()	4 row(s) returned	- / 0.000 sec
✓ 75	16:26:59	CREATE PROCEDURE NumberToWord2(IN num INT) BEGIN DECLARE ones VARCHAR(20);...	0 row(s) affected	0.094 sec
✓ 76	16:27:05	CALL NumberToWord2(45)	1 row(s) returned	0.000 sec / 0.000 sec

SQL Additions

Automatic context help is disabled. Use the toolbar manually get help for the current caret position or toggle automatic help.

Q8: Write a stored procedure that accepts an input parameter as '9874' and give output as '28'. Decipher the logic or relation behind input and output.



Automatic context help disabled. Use the toolbar manually get help for the current caret position or toggle automatic help

Result Grid

#	Time	Action	Message	Duration / Fetch
58	15:51:41	SELECT d.EmployeeID, d.First_Name.p.Project_Name FROM Employee_Detail d JOIN Project_...	Error Code: 1146. Table 'finalexam_lab.project_detail' doesn't exist	0.000 sec
59	15:52:28	SELECT d.EmployeeID, d.First_Name.p.Project_Name FROM Employee_Detail d JOIN ProjectD...	6 row(s) returned	0.000 sec / 0.000 sec
60	16:11:56	CREATE PROCEDURE myProc(IN inParam VARCHAR(10), OUT outResult INT) BEGIN SET o...	0 row(s) affected, 2 warning(s): 1287 Setting user variables within expressions is deprecated and ...	0.078 sec
61	16:12:01	CALL myProc('9874', @res)	0 row(s) affected	0.015 sec
62	16:12:01	SELECT @res LIMIT 0, 1000	1 row(s) returned	0.000 sec / 0.000 sec

Q9: Create a procedure to increase salary of Employee Id 102 by 1000 and produce the below given output.



