

SQL PROJECT

Smart Class Database management System

Abstract :-

The Smart Class Database Management System (SCDBMS) is a comprehensive solution designed to streamline and enhance the management of educational resources. This project leverages the power of a robust relational database management system (RDBMS) to create a user-friendly and efficient platform for educational institutions. It is a vital tool for educational institutions seeking to modernize and optimize their administrative processes, ultimately leading to improved educational outcomes and a more efficient learning environment.



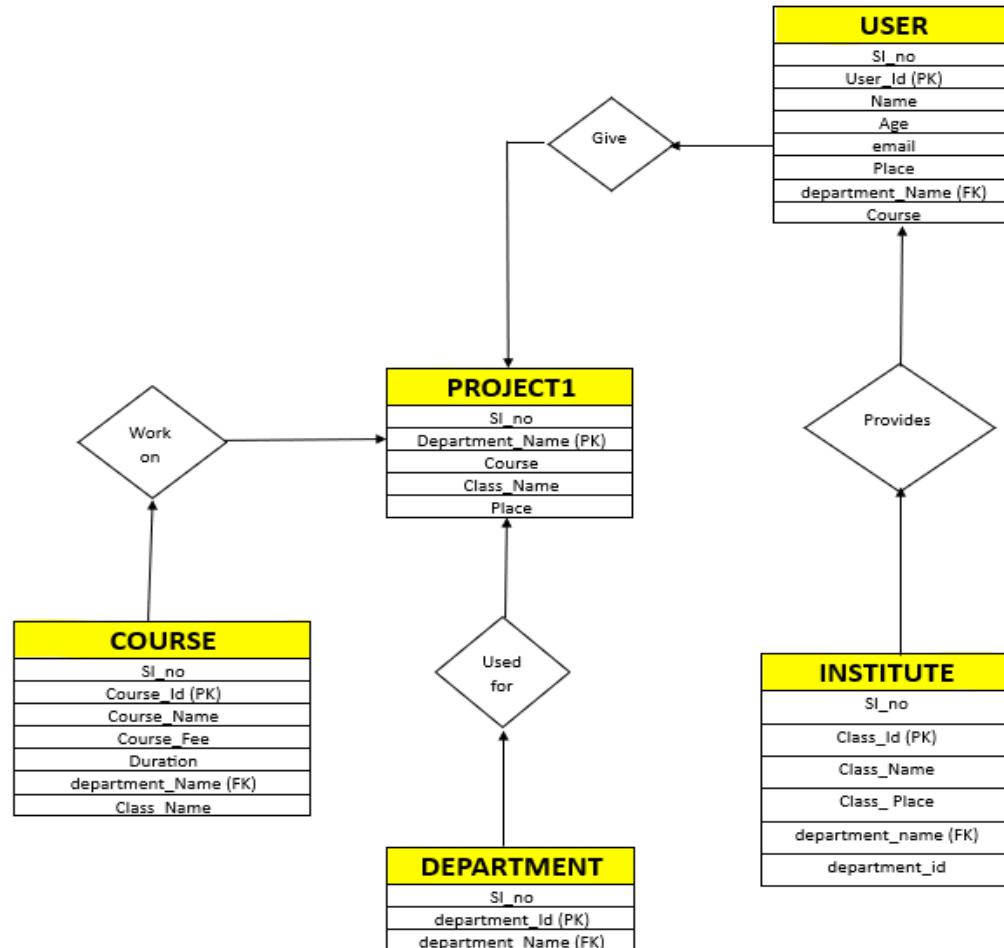
❖ Aim of Project –

The main aim of this project is to build to revolutionize the way educational institutions manage their online resources and interact with students and Institute. It will enhance the overall learning experience, streamline administrative tasks, and promote effective communication. This project aligns with the evolving educational landscape, where technology plays a pivotal role in providing quality education in a digital format.

❖ Introduction-

In this Smart Class Database management system SQL will be used in order to create a organized database for an any Institute or Any course. Here multiple entities will be connected to each other like Department will be connected to Course which will let us know which department had helped to obtain which Course similarly it will let us know that which User and Institute are being used for which Course. Overall it will create an organized environment for the Institute website.

ER Diagram:



STRUCTURE OF TABLES

Project1 table -

The screenshot shows the MySQL Workbench interface with the 'Script' tab selected. The code pane contains the following SQL statements:

```
1 • create database P;
2 • use P;
3 • create table Project1(Sl_No int,Department_Name varchar(50) Primary key,Course_Name varchar(50),class_Name varchar(50),Place varchar(50));
4 • desc Project1;
5
```

The results pane displays the structure of the 'Project1' table:

Field	Type	Null	Key	Default	Extra
Sl_No	int(11)	YES		NULL	
Department_Name	varchar(50)	NO	PRI	NULL	
Course_Name	varchar(50)	YES		NULL	
class_Name	varchar(50)	YES		NULL	
Place	varchar(50)	YES		NULL	

Department table -

The screenshot shows the MySQL Workbench interface with the 'Script' tab selected. The code pane contains the following SQL statements:

```
14 • select * from Project1;
15
16 -- Department Table
17 • create table Department(Sl_No int, Department_ID varchar(50) Primary key ,Department_Name varchar(50),foreign key(Department_Name)reference
18 • desc Department;
```

The results pane displays the structure of the 'Department' table:

Field	Type	Null	Key	Default	Extra
Sl_No	int(11)	YES		NULL	
Department_ID	varchar(50)	NO	PRI	NULL	
Department_Name	varchar(50)	YES	MUL	NULL	

Institute Table –

The screenshot shows the MySQL Workbench interface with the 'Institute' table selected. The left sidebar shows 'MANAGEMENT' and 'INSTANCE' sections, with 'Schemas' selected under 'Administration'. The main area displays the SQL code for creating the 'Institute' table:

```
26 • drop table Department;
27 • Select * from Department;
28
29 -- Institute table
30 • create table Institute(Sl_No int,Class_Id varchar(50) Primary key,Class_Name varchar(50),Class_Place varchar(50),Department_Name varchar(50)
31 • desc Institute;
```

Below the code, the 'Result Grid' shows the table structure:

Field	Type	Null	Key	Default	Extra
Sl_No	int(11)	YES		NULL	
Class_Id	varchar(50)	NO	PRI	NULL	
Class_Name	varchar(50)	YES		NULL	
Class_Place	varchar(50)	YES		NULL	
Department_Name	varchar(50)	YES	MUL	NULL	
Department_Id	varchar(50)	YES		NULL	

Course table –

The screenshot shows the MySQL Workbench interface with the 'Course' table selected. The left sidebar shows 'MANAGEMENT' and 'INSTANCE' sections, with 'Schemas' selected under 'Administration'. The main area displays the SQL code for creating the 'Course' table:

```
47 -- Course Table
48 • create table Course(Sl_No int,Course_Id Varchar(50) primary key,Course_Name varchar(50),Course_fee int,Duration varchar(50),Department_Name |
49 • desc Course;
50
51
```

Below the code, the 'Result Grid' shows the table structure:

Field	Type	Null	Key	Default	Extra
Sl_No	int(11)	YES		NULL	
Course_Id	varchar(50)	NO	PRI	NULL	
Course_Name	varchar(50)	YES		NULL	
Course_fee	int(11)	YES		NULL	
Duration	varchar(50)	YES		NULL	
Department_Name	varchar(50)	YES	MUL	NULL	
Class_Name	varchar(50)	YES		NULL	

User table –

The screenshot shows the MySQL Workbench interface with the 'User table' creation script in the SQL editor:

```
Local Instance MySQL80 - W_...
File Edit View Query Database Server Tools Scripting Help
Project File1 Department file 2 Institute File 3 Course file 4 User file5 practice58 final file 6 Munna1 Munna2* ...
Navigator MANAGEMENT INSTANCE Administration Schemas Information No object selected
MANAGEMENT
- Server Status
- Client Connections
- Users and Privileges
- Status and System Variables
- Data Export
- Data Import/Restore
INSTANCE
- Startup / Shutdown
- Server Logs
- Options File
Administration Schemas
Information
No object selected
61 |- User Table
62 • create table User(Sl_No int,User_Id varchar(50) primary key, Name varchar(50),Age int,e_mail varchar(50),Place varchar(50),Department_Name
63 • desc User ;
64
65
Result Grid | Filter Rows: | Export: | Wrap Cell Content: 
Field Type Null Key Default Extra
Sl_No int(11) YES NULL
User_Id varchar(50) NO PRI NULL
Name varchar(50) YES NULL
Age int(11) YES NULL
e_mail varchar(50) YES NULL
Place varchar(50) YES NULL
Department_Name varchar(50) YES MUL NULL
Course varchar(50) YES NULL
Result Grid Form Editor Field Types Query
```

The table structure is defined with fields: Sl_No, User_Id (primary key), Name, Age, e_mail, Place, Department_Name, and Course.

Contents of Tables –

Project1 table -

The screenshot shows the MySQL Workbench interface with the contents of the Project1 table:

```
Project File1 Department file 2 Institute File 3 Course file 4 User file5 practice58 final file 6 Munna1 Munna2* ...
Navigator MANAGEMENT INSTANCE Administration Schemas Information No object selected
MANAGEMENT
- Server Status
- Client Connections
- Users and Privileges
- Status and System Variables
- Data Export
- Data Import/Restore
INSTANCE
- Startup / Shutdown
- Server Logs
- Options File
Administration Schemas
Information
No object selected
4 • desc Project1;
5
6 • insert into Project1 values(1,"IT","DataScience","ItVedant","Thane"),
(2,"Electronics","IOT","Oscilate Technical Institute","Pune"),
(3,"Civil","Construction Management","Odin School","Mumbai"),
(4,"Mechanical","Autocad","Ethlive","Navi-Mumbai"),
(5,"Civil Service","UPSC","Khan Academy","Delhi"),
(6,"Art","Crafting","Kiran Academy","Mumbai");
12
13 • drop table Project1;
14 • select * from Project1;
15
Result Grid | Filter Rows: | Edit: | Export/Import: | Wrap Cell Content: 
Sl_No Department_Name Course_Name class_Name Place
6 Art Crafting Kiran Academy Mumbai
3 Civil Construction Management Odin School Mumbai
5 Civil Service UPSC Khan Academy Delhi
2 Electronics IOT Oscilate Technical Institute Pune
1 IT DataScience ItVedant Thane
4 Mechanical Autocad Ethlive Navi-Mumbai
NULL NULL NULL NULL NULL
Project1 28 x Result Grid Form Editor Field Types Apply
```

The table contains 6 rows of data with columns: Sl_No, Department_Name, Course_Name, class_Name, and Place.

Department table –

The screenshot shows the MySQL Workbench interface with the following details:

- File Bar:** File, Edit, View, Query, Database, Server, Tools, Scripting, Help.
- Navigator:** Project File1, Department file 2, Institute File 3, Course file 4, User file5, practice58, final file 6, Munna1, Munna2*.
- Management Area:** Server Status, Client Connections, Users and Privileges, Status and System Variables, Data Export, Data Import/Restore.
- INSTANCE Area:** Startup / Shutdown, Server Logs, Options File.
- Administration Schemas:** Information, No object selected.
- Query Editor:** Contains the following SQL code:

```
14 * select * from Project1;
15 *
16 -- Department Table
17 * create table Department(Sl_No int, Department_ID varchar(50) Primary key ,Department_Name varchar(50),foreign key(Department_Name)reference
18 * desc Department;
19 * insert into Department values(1,"D101","IT"),
20 *                               (2,"D102","Electronics"),
21 *                               (3,"D103","Civil"),
22 *                               (4,"D104","Civil Service"),
23 *                               (5,"D105","Art"),
24 *                               (6,"D106","Mechanical");
25 * desc Department;
26 * drop table Department;
27 * Select * from Department;
```
- Result Grid:** Shows the data inserted into the Department table:

Sl_No	Department_ID	Department_Name
1	D101	IT
2	D102	Electronics
3	D103	Civil
4	D104	Civil Service
5	D105	Art
6	D106	Mechanical
- Right Panel:** Result Grid, Form Editor, Field Types, Query Stats.

Institute table –

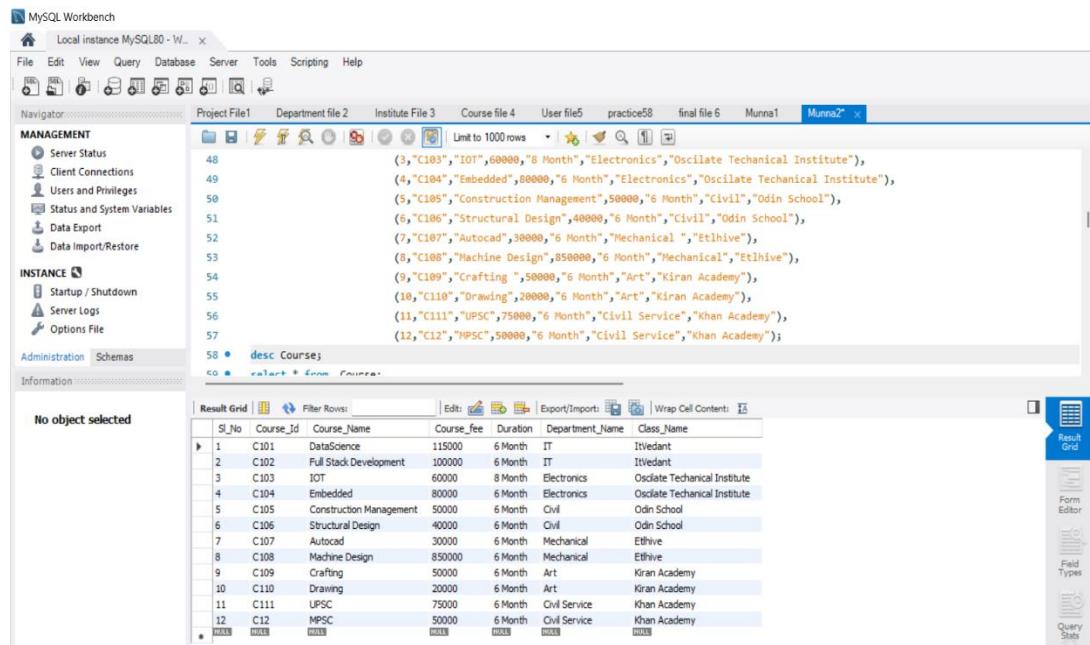
The screenshot shows the MySQL Workbench interface with the following details:

- File Bar:** File, Edit, View, Query, Database, Server, Tools, Scripting, Help.
- Navigator:** Project File1, Department file 2, Institute File 3, Course file 4, User file5, practice58, final file 6, Munna1, Munna2*.
- Management Area:** Server Status, Client Connections, Users and Privileges, Status and System Variables, Data Export, Data Import/Restore.
- INSTANCE Area:** Startup / Shutdown, Server Logs, Options File.
- Administration Schemas:** Information, No object selected.
- Query Editor:** Contains the following SQL code:

```
42 *
43 * desc Institute ;
44 * drop table Institute;
45 * select * from Institute;
46 *
```
- Result Grid:** Shows the data inserted into the Institute table:

Sl_No	Class_Id	Class_Name	Class_Place	Department_Name	Department_Id
1	I101	ITIudent	Thane	IT	D101
2	I102	Odn School	Mumbai	Civil	D103
3	I103	Kiran Academy	Mumbai	Art	D105
4	I104	Ethive	Navi-Mumbai	Mechanical	D106
5	I105	Oscilate Technical Institute	Pune	Electronics	D102
6	I106	Khan Academy	Dehi	Civil Service	D104
- Right Panel:** Result Grid, Form Editor, Field Types, Query Stats.

Course table –



The screenshot shows the MySQL Workbench interface with the 'Course' table selected. The left sidebar displays management and instance options. The main area shows the table structure and data.

```
MySQL Workbench - Local instance MySQL80 - W...
```

Project File1 Department file 2 Institute File 3 Course file 4 User file5 practice68 final file 6 Munna1 Munna2*

MANAGEMENT

- Server Status
- Client Connections
- Users and Privileges
- Status and System Variables
- Data Export
- Data Import/Restore

INSTANCE

- Startup / Shutdown
- Server Logs
- Options File

Administration Schemas Information

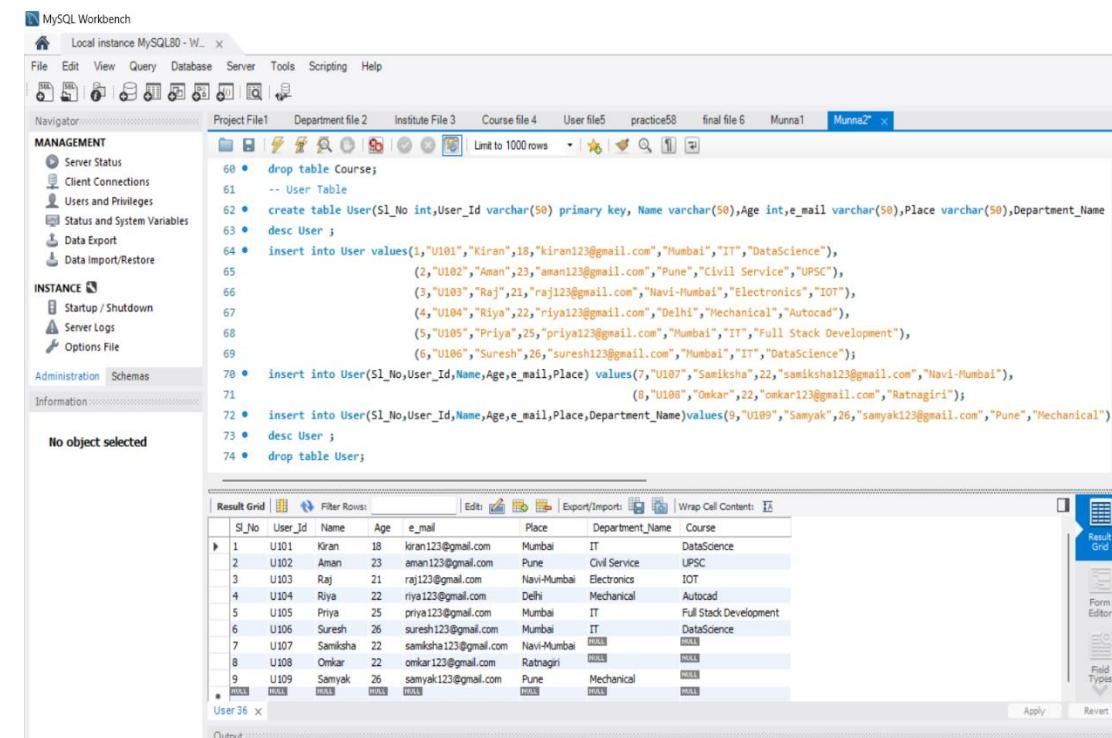
No object selected

Result Grid | Filter Rows: | Edit: | Export/Import: | Wrap Cell Content: |

SL_No	Course_Id	Course_Name	Course_fee	Duration	Department_Name	Class_Name
1	C101	DataScience	115000	6 Month	IT	ItVedant
2	C102	Full Stack Development	100000	6 Month	IT	ItVedant
3	C103	IOT	60000	8 Month	Electronics	Oscilate Technical Institute
4	C104	Embedded	80000	6 Month	Electronics	Oscilate Technical Institute
5	C105	Construction Management	50000	6 Month	Civil	Odin School
6	C106	Structural Design	40000	6 Month	Civil	Odin School
7	C107	Autocad	30000	6 Month	Mechanical	Ethlive
8	C108	Machine Design	85000	6 Month	Mechanical	Ethlive
9	C109	Crafting	50000	6 Month	Art	Kiran Academy
10	C110	Drawing	20000	6 Month	Art	Kiran Academy
11	C111	UPSC	75000	6 Month	Civil Service	Khan Academy
12	C12	MPSA	50000	6 Month	Civil Service	Khan Academy

Result Grid Form Editor Field Types Query Stats

User table –



The screenshot shows the MySQL Workbench interface with the 'User' table selected. The left sidebar displays management and instance options. The main area shows the table structure and data.

```
MySQL Workbench - Local instance MySQL80 - W...
```

Project File1 Department file 2 Institute File 3 Course file 4 User file5 practice68 final file 6 Munna1 Munna2*

MANAGEMENT

- Server Status
- Client Connections
- Users and Privileges
- Status and System Variables
- Data Export
- Data Import/Restore

INSTANCE

- Startup / Shutdown
- Server Logs
- Options File

Administration Schemas Information

No object selected

Result Grid | Filter Rows: | Edit: | Export/Import: | Wrap Cell Content: |

SL_No	User_Id	Name	Age	e_mail	Place	Department_Name	Course
1	U101	Kiran	18	kiran123@gmail.com	Mumbai	IT	DataScience
2	U102	Aman	23	aman123@gmail.com	Pune	Civil Service	UPSC
3	U103	Raj	21	raj123@gmail.com	Navi-Mumbai	Electronics	IOT
4	U104	Riya	22	riya123@gmail.com	Delhi	Mechanical	Autocad
5	U105	Priya	25	priya123@gmail.com	Mumbai	IT	Full Stack Development
6	U106	Suresh	26	suresh123@gmail.com	Mumbai	IT	DataScience
7	U107	Samiksha	22	samiksha123@gmail.com	Navi-Mumbai	IT	Full Stack Development
8	U108	Omkar	22	omkar123@gmail.com	Ratnagiri	IT	DataScience
9	U109	Samyak	26	samyak123@gmail.com	Pune	Mechanical	Autocad

Result Grid Form Editor Field Types Query Stats

Inner Join –

Fetch the details of Course (Class_Id,Class_Name,Course_Name,Class_fees,Duration) with Respective Institute to obtain them.

The screenshot shows the MySQL Workbench interface. The top menu bar includes File, Edit, View, Query, Database, Server, Tools, Scripting, and Help. The left sidebar has sections for MANAGEMENT (Server Status, Client Connections, Users and Privileges, Status and System Variables, Data Export, Data Import/Restore), INSTANCE (Startup / Shutdown, Server Logs, Options File), Administration, and Schemas. The main area has a Navigator pane with tabs for Project File1, Department file 2, Institute File 3, Course file 4, User file5, practice58, final file 6, Munna1, and Munna2*. A query editor window displays the following SQL code:

```
85
86  #inner join
87  • select Institute.Class_Id,Institute.Class_Name,Course.Course_Name,Course.Course_fee,Course.Duration
88  from Institute
89  inner join
90  Course
91  on Course.Department_Name=Institute.Department_Name;
92
93
94
95
```

The results grid below shows the data for the query:

Class_Id	Class_Name	Course_Name	Course_fee	Duration
I101	ITvedant	DataScience	115000	6 Month
I101	ITvedant	Full Stack Development	100000	6 Month
I102	Odin School	Construction Management	50000	6 Month
I102	Odin School	Structural Design	40000	6 Month
I103	Kiran Academy	Crafting	50000	6 Month
I103	Kiran Academy	Drawing	20000	6 Month
I104	Ethive	Autocad	30000	6 Month
I104	Ethive	Machine Design	850000	6 Month
I105	Oscilate Technical Institute	IOT	60000	8 Month
I105	Oscilate Technical Institute	Embedded	80000	6 Month
I106	Khan Academy	UPSC	75000	6 Month
I106	Khan Academy	MPSC	50000	6 Month

On the right side, there are buttons for Result Grid, Form Editor, and Field Types.

Left Join -

Fetch the detail of all user (Name, Place, course) and Department Name, Class fees used to get them.

The screenshot shows the MySQL Workbench interface. The top menu bar includes File, Edit, View, Query, Database, Server, Tools, Scripting, and Help. The left sidebar has sections for Navigator, MANAGEMENT (Server Status, Client Connections, Users and Privileges, Status and System Variables, Data Export, Data Import/Restore), INSTANCE (Startup / Shutdown, Server Logs, Options File), Administration, Schemas, and Information. The main area shows a query editor with the following SQL code:

```
110
111 -- left join
112 select User.User_Id,User.Name,User.Place,User.Department_Name,Course.Course_Name,Course.Course_fee,Course.Duration
113 from User
114 left outer join
115 Course
116 on Course.Department_Name=User.Department_Name
117 order by User.User_Id;
118
119
120
121
122
```

Below the query editor is a Result Grid table with the following data:

User_Id	Name	Place	Department_Name	Course_Name	Course_fee	Duration
U101	Kiran	Mumbai	IT	DataScience	115000	6 Month
U101	Kiran	Mumbai	IT	Full Stack Development	100000	6 Month
U102	Aman	Pune	Civil Service	UPSC	75000	6 Month
U102	Aman	Pune	Civil Service	MPSC	50000	6 Month
U103	Raj	Navi-Mumbai	Electronics	IOT	60000	8 Month
U103	Raj	Navi-Mumbai	Electronics	Embedded	80000	6 Month
U104	Riya	Delhi	Mechanical	Autocad	30000	6 Month
U104	Riya	Delhi	Mechanical	Machine Design	850000	6 Month
U105	Priya	Mumbai	IT	DataScience	115000	6 Month
U105	Priya	Mumbai	IT	Full Stack Development	100000	6 Month
U106	Suresh	Mumbai	IT	DataScience	115000	6 Month
U106	Suresh	Mumbai	IT	Full Stack Development	100000	6 Month
U107	Sami...	Navi-Mumbai	IT	IT	IT	IT
U108	Omkar	Ratnagiri	Mechanical	Autocad	30000	6 Month
U109	Sam...	Pune	Mechanical	Autocad	30000	6 Month

At the bottom, there is a Result 45 message.

Right Join –

Write a query to display the Name ,User_Place,Department_Name,Course_Name,duration from course and department table.

The screenshot shows the MySQL Workbench interface with a query editor and a result grid. The query is:

```
98 #right join
99 -- write a query to display the name ,department_Name ,Course_Name ,Duration from course and department table
100
101 • select User.User_Id,User.Name,User.Place,User.Department_Name,Course.Course_Name,Course.Course_fee,Course.Duration
102   from User
103   right join
104   Course on
105   Course.Department_Name=User.Department_Name
106   order by User.User_Id;
```

The result grid displays the following data:

User_Id	Name	Place	Department_Name	Course_Name	Course_fee	Duration
HULL	HULL	HULL	HULL	Construction Management	50000	6 Month
HULL	HULL	HULL	HULL	Drawing	20000	6 Month
HULL	HULL	HULL	HULL	Crafting	50000	6 Month
HULL	HULL	HULL	HULL	Structural Design	40000	6 Month
U101	Kiran	Mumbai	IT	DataScience	115000	6 Month
U101	Kiran	Mumbai	IT	Full Stack Development	100000	6 Month
U102	Aman	Pune	Civil Service	UPSC	75000	6 Month
U102	Aman	Pune	Civil Service	MPSC	50000	6 Month
U103	Raj	Navi-Mumbai	Electronics	Embedded	80000	6 Month
U103	Raj	Navi-Mumbai	Electronics	IOT	60000	8 Month
U104	Riya	Delhi	Mechanical	Machine Design	85000	6 Month
U104	Riya	Delhi	Mechanical	Autodesk	90000	6 Month

Result 83 ×

left anti join –

write a query to display the name of user who have not enter the any Department_Name from course table

The screenshot shows the MySQL Workbench interface with a query editor and a result grid. The query is:

```
140
141 -- write a querie to display the Name of user who have not enter the any Department_Name from Course Table.
142 • select u.User_Id,u.Name,u.Department_Name
143   from user u
144   left outer join
145   course c
146   on u.user_Id=c.Course_Id
147   where c.Course_Id is Null;
```

The result grid displays the following data:

User_Id	Name	Department_Name
U101	Kiran	IT
U102	Aman	Civil Service
U103	Raj	Electronics
U104	Riya	Mechanical
U105	Priya	IT
U106	Suresh	IT
U107	Samiksha	HULL
U108	Omkar	HULL
U109	Samyak	Mechanical

Full Outer Join

The screenshot shows the MySQL Workbench interface with a query editor containing the following SQL code:

```
-- Full Outer join
-- (select User.User_Id,User.Name,User.Place,User.Department_Name,Course.Course_Name,Course.Course_fee,Course.Duration
from User
right join
Course on
Course.Department_Name=User.Department_Name
order by User.User_Id)
union
-- (select User.User_Id,User.Name,User.Place,User.Department_Name,Course.Course_Name,Course.Course_fee,Course.Duration
from User
left outer join
Course
on Course.Department_Name=User.Department_Name
order by User.User_Id)
```

The results grid displays the following data:

User_Id	Name	Place	Department_Name	Course_Name	Course_fee	Duration
U106	Suresh	Mumbai	IT	DataScience	115000	6 Month
U101	Kiran	Mumbai	IT	Full Stack Development	100000	6 Month
U105	Priya	Mumbai	IT	Full Stack Development	100000	6 Month
U106	Suresh	Mumbai	IT	Full Stack Development	100000	6 Month
U103	Raj	Navi-Mumbai	Electronics	IOT	60000	8 Month
U103	Raj	Navi-Mumbai	Electronics	Embedded	80000	6 Month
U103	Raj	Navi-Mumbai	Electronics	Construction Management	50000	6 Month
U103	Raj	Navi-Mumbai	Electronics	Structural Design	40000	6 Month
U104	Riya	Delhi	Mechanical	Autocad	30000	6 Month
U109	Sanyak	Pune	Mechanical	Autocad	30000	6 Month
U104	Riya	Pune	Mechanical	Machine Design	85000	6 Month
U109	Sanyak	Pune	Mechanical	Machine Design	85000	6 Month
U103	Raj	Navi-Mumbai	Electronics	Crafting	50000	6 Month

Oder By –

display all the records as per the Course_Name whose Department name is "IT"

The screenshot shows the MySQL Workbench interface with a query editor containing the following SQL code:

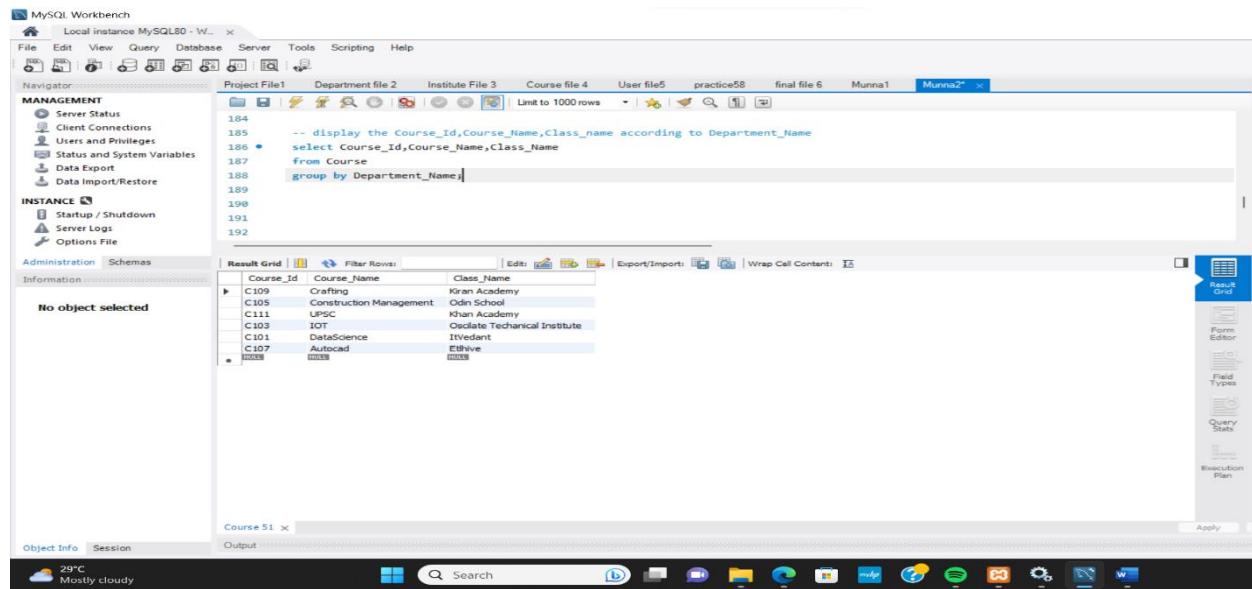
```
-- display all the records as per the Course_Name whos Department_name is "IT"
select * from Course
where Department_Name='IT'
order by Department_name asc;
```

The results grid displays the following data:

S_No	Course_Id	Course_Name	Course_Fee	Duration	Department_Name	Class_Name
1	C101	DataScience	115000	6 Month	IT	Wednesday
2	C102	Full Stack Development	100000	6 Month	IT	Wednesday
3	C103	Full Stack Development	100000	6 Month	IT	Wednesday

Group By-

display the Course_Id, Course_Name, Class_name according to Department_Name



The screenshot shows the MySQL Workbench interface with a query editor and a results grid. The query is:

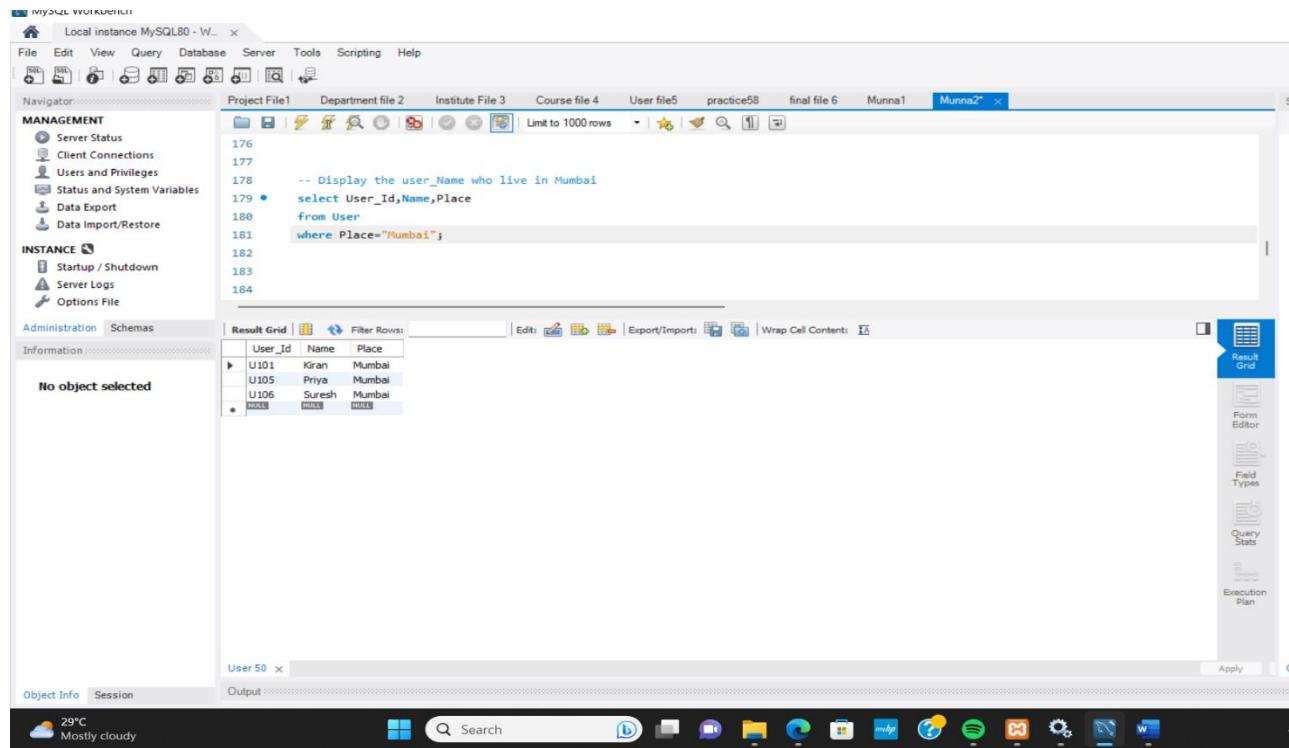
```
184
185 -- display the Course_Id,Course_Name,Class_Name
186 select Course_Id,Course_Name,Class_Name
187 from Course
188 group by Department_Name;
```

The results grid displays the following data:

Course_Id	Course_Name	Class_Name
C109	Crafting	Kiran Academy
C105	Construction Management	Odin School
C111	UGC	Odin Academy
C103	IOT	Osulata Technical Institute
C101	DataScience	ITVedant
C107	AutoCAD	Ethive
NULL	NULL	NULL

DQL - QUERIES

Display the User Name who live in “Mumbai”



The screenshot shows the MySQL Workbench interface with a query editor and a results grid. The query is:

```
176
177
178 -- Display the user_Name who live in Mumbai
179 select User_Id,Name,Place
180 from User
181 where Place="Mumbai";
```

The results grid displays the following data:

User_Id	Name	Place
U101	Kiran	Mumbai
U105	Priya	Mumbai
U106	Suresh	Mumbai
NULL	NULL	NULL

Like-

Write a query to display the record of the User whose name start with “R”

The screenshot shows the MySQL Workbench interface with a query editor and a results grid. The query is:

```
select * from User  
where Name like 'R%';
```

The results grid displays the following data:

SL_No	User_Id	Name	Age	e_mail	Place	Department_Name	Course
3	U103	Raj	21	raj123@gmail.com	Navi-Mumbai	Electronics	IOT
4	U104	Riya	22	riya123@gmail.com	Dels	Mechanical	Autodesk

Write a query to display the record of the User whose name end with “R”

The screenshot shows the MySQL Workbench interface with a query editor and a results grid. The query is:

```
select * from User  
where Name like '%R';
```

The results grid displays the following data:

SL_No	User_Id	Name	Age	e_mail	Place	Department_Name	Course
8	U108	Omkar	22	omkar123@gmail.com	Ratnagiri	IT	IT

Write a query to display the record of the User whose name contain P letter in the name “%P%”

The screenshot shows the MySQL Workbench interface with a query editor and a results grid. The query is:

```
select * from User  
where Name like "%P%";
```

The results grid displays the following data:

SL_No	User_Id	Name	Age	e_mail	Place	Department_Name	Course
5	U105	Priti	25	priti123@gmail.com	Mumbai	IT	Cloud Development

Write query to display the course whose Course_Fee between 11500 and 50000

The screenshot shows the MySQL Workbench interface with a query editor and a results grid. The query is:

```
301 -- Range Operator
302 • select * from Course where Course_fee between 11500 and 50000;
303
304
305
306
```

The results grid displays the following data:

Sl_No	Course_Id	Course_Name	Course_fee	Duration	Department_Name	Class_Name
5	C105	Construction Management	50000	6 Month	Civil	Odin School
6	C106	Structural Design	40000	6 Month	Civil	Odin School
7	C107	Autocad	30000	6 Month	Mechanical	Ethive
9	C109	Crafting	50000	6 Month	Art	Kiran Academy
10	C110	Drawing	20000	6 Month	Art	Kiran Academy
12	C12	MPSC	50000	6 Month	Civil Service	Khan Academy

Write a query to display the Course whose Course fees (50000,30000,40000)

The screenshot shows the MySQL Workbench interface with a query editor and a results grid. The query is:

```
303
304
305 -- list operator
306
307 • select * from Course where Course_fee in (50000,30000,40000);
308
309
310
311
```

The results grid displays the following data:

Sl_No	Course_Id	Course_Name	Course_fee	Duration	Department_Name	Class_Name
5	C105	Construction Management	50000	6 Month	Civil	Odin School
6	C106	Structural Design	40000	6 Month	Civil	Odin School
7	C107	Autocad	30000	6 Month	Mechanical	Ethive
9	C109	Crafting	50000	6 Month	Art	Kiran Academy
12	C12	MPSC	50000	6 Month	Civil Service	Khan Academy

On the right side, there is a SQL Additions panel with a message: "Automatic context help is disabled. Use the toolbar to manually get help for the current caret position or to toggle automatic help." Below the results grid, there is an Action Output section showing the execution log:

Action	Time	Message	Duration / Fetch
select * from Course where Course_fee between 100000 and 75000 LIMIT 0, 1000	118 18:18:51	0 row(s) returned	0.015 sec / 0.000 sec
select * from Course where Course_fee between 100000 and 50000 LIMIT 0, 1000	119 18:19:04	0 row(s) returned	0.000 sec / 0.000 sec
select * from Course where Course_fee between 11500 and 50000 LIMIT 0, 1000	120 18:19:13	0 row(s) returned	0.000 sec / 0.000 sec
select * from Course where Course_fee between 11500 and 50000 LIMIT 0, 1000	121 18:19:19	6 row(s) returned	0.000 sec / 0.000 sec
select * from Course where Course_fee in (50000,30000,40000) LIMIT 0, 1000	122 18:24:17	5 row(s) returned	0.000 sec / 0.000 sec

Write a query to display the all unique Class_Name From Institute_Name

The screenshot shows the MySQL Workbench interface with a query editor and a result grid. The query is:308
309
310 -- Distinct
311 • select * from Institute;
312 • select Distinct Class_Name from Institute;
313
314
315
316

The result grid displays the following data:

Class_Name
ITVidant
Odin School
Odin Academy
Eduhive
Oscilate Technical Institute
Khan Academy

The output pane shows the execution log:

#	Time	Action	Message	Duration / Fetch
121	18:18:19	selected * from Course where Course_fee between 11500 and 50000 LIMIT 0, 1000	6 rows returned	0.000 sec / 0.000 sec
122	18:28:17	selected * from Course where Course_fee in (50000,30000,40000) LIMIT 0, 1000	5 rows returned	0.000 sec / 0.000 sec
123	18:30:15	select * from Institute select Distinct Class_Name from Institute	Error Code: 1064. You have an error in your SQL syntax; check the manual that corresponds to your MariaDB server version for the right syntax to use near 'select Distinct Class_Name from Institute' at line 1	0.000 sec
124	18:30:38	select * from Institute select Distinct Class_Name from Institute	Error Code: 1064. You have an error in your SQL syntax; check the manual that corresponds to your MariaDB server version for the right syntax to use near 'select Distinct Class_Name from Institute' at line 1	0.000 sec
125	18:30:47	select Distinct Class_Name from Institute LIMIT 0, 1000	6 row(s) returned	0.032 sec / 0.000 sec

Write a query to display the Department_Name which is not assign to any User

The screenshot shows the MySQL Workbench interface with a query editor and a result grid. The query is:312 • select Distinct Class_Name from Institute;
313
314
315
316
317 -- is Null and Not Null
318 • select* from User;
319 • select * from user where Department_Name is Null;
320

The result grid displays the following data:

SL_No	User_Id	Name	Age	e_mail	Place	Department_Name	Course
7	U107	Samiksha	22	samiksha123@gmail.com	Navi-Mumbai	NULL	NULL
8	U108	Omkar	22	omkar123@gmail.com	Rahigiri	NULL	NULL
*	NULL	NULL	NULL	NULL	NULL	NULL	NULL

The output pane shows the execution log:

#	Time	Action	Message	Duration / Fetch
123	18:30:15	selected * from Institute select Distinct Class_Name from Institute	Error Code: 1064. You have an error in your SQL syntax; check the manual that corresponds to your MariaDB server version for the right syntax to use near 'select Distinct Class_Name from Institute' at line 1	0.000 sec
124	18:30:38	select * from Institute select Distinct Class_Name from Institute	Error Code: 1064. You have an error in your SQL syntax; check the manual that corresponds to your MariaDB server version for the right syntax to use near 'select Distinct Class_Name from Institute' at line 1	0.000 sec
125	18:30:47	select Distinct Class_Name from Institute LIMIT 0, 1000	6 rows returned	0.032 sec / 0.000 sec
126	18:33:37	select * from User LIMIT 0, 1000	9 row(s) returned	0.000 sec / 0.000 sec
127	18:34:31	select * from user where Department_Name is Null LIMIT 0, 1000	2 row(s) returned	0.000 sec / 0.000 sec

Write a query to display the User_name who have the Department_Name

The screenshot shows the MySQL Workbench interface with a query editor window. The query is:`317 -- is Null and Not Null
318 • select* from User;
319 • select * from user where Department_Name is Null;
320 • select * from user where Department_Name is not Null;`

The result grid displays the following data:

Sl_No	User_Id	Name	Age	e_email	Place	Department_Name	Course
1	U101	Kran	18	kiran123@gmail.com	Mumbai	IT	DataScience
2	U102	Aman	23	aman123@gmail.com	Pune	Civil Service	UPSC
3	U103	Raj	21	raj123@gmail.com	Mumbai-Mumbai	Electronics	IT
4	U104	Praveen	22	praveen123@gmail.com	Delhi	Mechanical	Autocad
5	U105	Priva	25	priva123@gmail.com	Mumbai	IT	Ful Stack Development
6	U106	Suresh	26	suresh123@gmail.com	Mumbai	IT	DataScience
7	U107	Samyak	26	samyak123@gmail.com	Pune	Mechanical	IT
8	U108	Samyak	26	samyak123@gmail.com	Mumbai	IT	DataScience
9	U109	Samyak	26	samyak123@gmail.com	Pune	Mechanical	IT

Built in SQL – String Functions

The screenshot shows the MySQL Workbench interface with a query editor window. The queries are:`324 -- String function
325 • select lower("Smart Class Database management System");
326 • select upper("Smart Class Database management System");
327 • select substr("Smart Class",6);
328 • select replace("Smart Class","Class","E-Class");`

Write a query to Display the “Smart Class Database Management System” in Lower case

The screenshot shows the MySQL Workbench interface with a query editor window. The query is:`325 • select lower("Smart Class Database management System");`

The result grid displays the output:

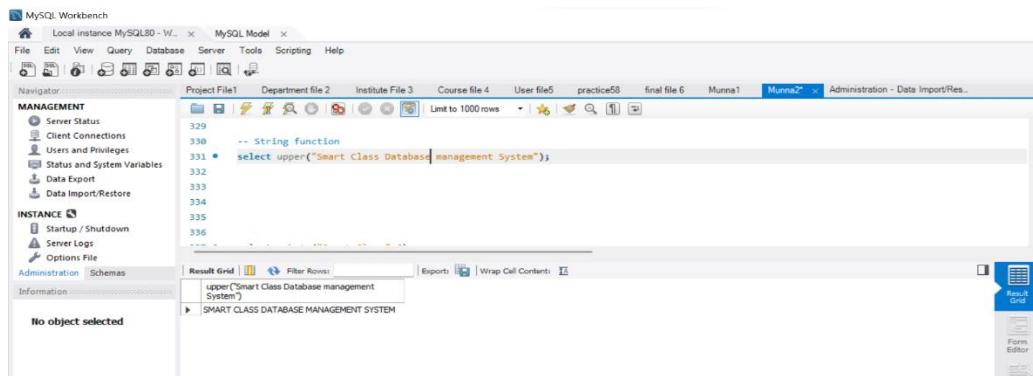
lower("Smart Class Database management System")
smart class database management system

The status bar at the bottom right shows "Automatic context help is disabled. Use the toolbar to manually get help for the current caret position or to toggle automatic help."

The "Result 97" tab is open, showing the execution details:

Action	Time	Action	Message	Duration / Fetch
127	18:34:31	select * from user where Department_Name is Null LIMIT 0, 1000	2 row(s) returned	0.000 sec / 0.000 sec
128	18:35:53	select * from user where Department_Name is not Null LIMIT 0, 1000	7 row(s) returned	0.000 sec / 0.000 sec
129	18:43:15	select substr("Smart Class",6) LIMIT 0, 1000	1 row(s) returned	0.000 sec / 0.000 sec
130	18:44:28	select replace("Smart Class","Class","E-Class") LIMIT 0, 1000	1 row(s) returned	0.000 sec / 0.000 sec
131	18:45:24	select lower("Smart Class Database management System") LIMIT 0, 1000	1 row(s) returned	0.000 sec / 0.000 sec

Write a query to Display the “Smart Class Database Management System” in capitalize manner



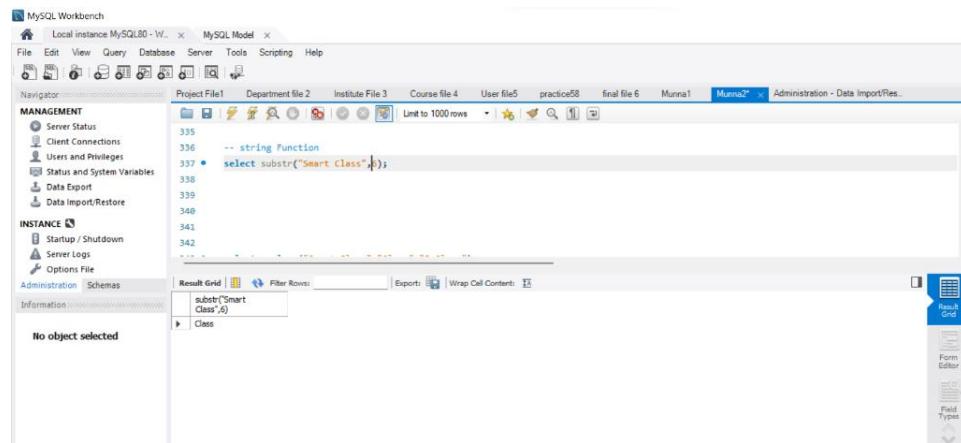
The screenshot shows the MySQL Workbench interface. In the central query editor window, the following SQL code is written:

```
329
330 -- String function
331 • select upper("Smart Class Database management System");
332
333
334
335
336
```

The result grid shows the output of the query:

Result Grid
upper("Smart Class Database management System") SMART CLASS DATABASE MANAGEMENT SYSTEM

Write a query to Display the “Smart Class Database Management system” only with “Class”



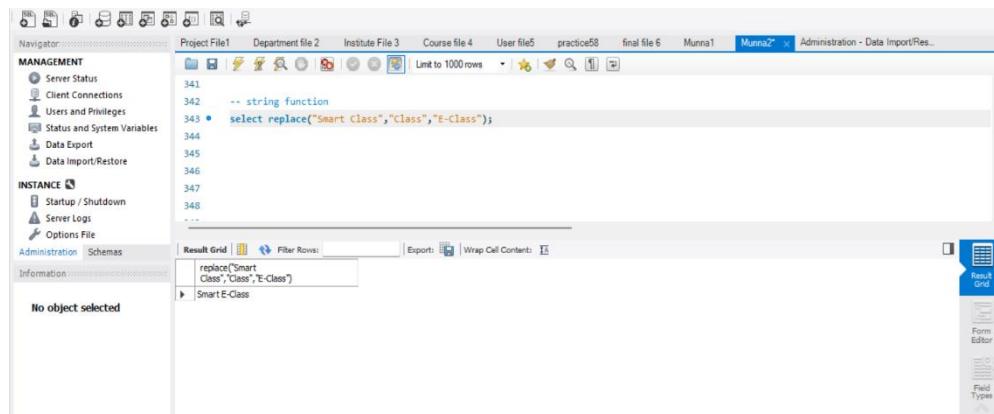
The screenshot shows the MySQL Workbench interface. In the central query editor window, the following SQL code is written:

```
335
336 -- string Function
337 • select substr("Smart Class",6);
338
339
340
341
342
```

The result grid shows the output of the query:

Result Grid
substr("Smart Class",6) Class

Write a query to replace the “Class” word to “E-Class”.



The screenshot shows the MySQL Workbench interface. In the central query editor window, the following SQL code is written:

```
341
342 -- string function
343 • select replace("Smart Class","Class","E-Class");
344
345
346
347
348
```

The result grid shows the output of the query:

Result Grid
replace("Smart Class","Class","E-Class") Smart E-Class

Aggregate Function -

The screenshot shows the MySQL Workbench interface with the following details:

- File Bar:** File, Edit, View, Query, Database, Server, Tools, Scripting, Help.
- Navigator:** Local instance MySQL80 - W..., MySQL Model.
- SQL Editor:** Contains the following SQL code:

```
358
359
360    -- Aggregate Function
361 •  select * from Course ;
362 •  select max(Course_fee) from Course;
363 •  select min(Course_fee) from Course;
```
- Output Window:** Shows the execution log with rows 63 to 71. The log includes columns for Time, Action, Message, and Duration / Fetch.

Action	Time	Message	Duration / Fetch
desc Course	63 15:07:42	7 row(s) returned	0.031 sec / 0.000 sec
select * from Course LIMIT 0, 1000	64 15:08:42	12 row(s) returned	0.016 sec / 0.000 sec
desc User	65 15:09:44	8 row(s) returned	0.031 sec / 0.000 sec
select * from User LIMIT 0, 1000	66 15:10:34	9 row(s) returned	0.000 sec / 0.000 sec
desc Institute	67 15:15:20	6 row(s) returned	0.016 sec / 0.000 sec
desc Course	68 15:16:08	7 row(s) returned	0.031 sec / 0.000 sec
select * from Institute LIMIT 0, 1000	69 15:16:30	6 row(s) returned	0.000 sec / 0.000 sec
desc Course	70 15:16:47	7 row(s) returned	0.032 sec / 0.000 sec
select * from Course LIMIT 0, 1000	71 15:17:20	12 row(s) returned	0.000 sec / 0.000 sec
- Object Info:** Session.
- System Bar:** 28°C Haze, Search, Taskbar icons, ENG IN, 7:01 PM, 9/3/2023.

Write a query to display the highest Course_fee

The screenshot shows the MySQL Workbench interface with the following details:

- File Bar:** File, Edit, View, Query, Database, Server, Tools, Scripting, Help.
- Navigator:** Local instance MySQL80 - W..., MySQL Model.
- SQL Editor:** Contains the following SQL code:

```
358
359
360    -- Aggregate Function
361 •  select * from Course ;
362 •  select max(Course_fee) from Course;
363 •  select min(Course_fee) from Course;
```
- Result Grid:** Shows the result of the query `select max(Course_fee)`. The result grid displays one row with the value 850000.
- Output Window:** Shows the execution log with rows 133 to 140. The log includes columns for Time, Action, Message, and Duration / Fetch.

Action	Time	Message	Duration / Fetch
select substr("Smart Class",6) LIMIT 0, 1000	133 18:48:55	1 row(s) returned	0.000 sec / 0.000 sec
select replace("Smart Class","Class","E-Class") LIMIT 0, 1000	134 18:49:43	1 row(s) returned	0.000 sec / 0.000 sec
select * from institute LIMIT 0, 1000	135 18:58:51	6 row(s) returned	0.000 sec / 0.000 sec
select * from Course LIMIT 0, 1000	136 18:59:04	12 row(s) returned	0.000 sec / 0.000 sec
select * from Course	137 18:59:44	Error Code: 1064. You have an error in your SQL syntax; check the manual that corresponds to your MariaDB ...	0.000 sec
select max(Course_fee) from Course	138 19:00:03	1 row(s) returned	0.000 sec / 0.000 sec
select max(Course_fee) from Course LIMIT 0, 1000	139 19:00:36	1 row(s) returned	0.000 sec / 0.000 sec
select max(Course_fee) from Course LIMIT 0, 1000	140 19:02:13	1 row(s) returned	0.000 sec / 0.000 sec
- Object Info:** Session.
- System Bar:** 28°C Haze, Search, Taskbar icons, ENG IN, 7:02 PM, 9/3/2023.

Write a query to display the Minimum Course_fee

The screenshot shows the MySQL Workbench interface. In the SQL Editor pane, the following SQL query is written:

```
358
359
360 -- Aggregate Function
361 • select * from Course ;
362 • select max(Course_fee) from Course;
363 • select min(Course_fee) from Course;
```

The Results pane displays the output of the query:

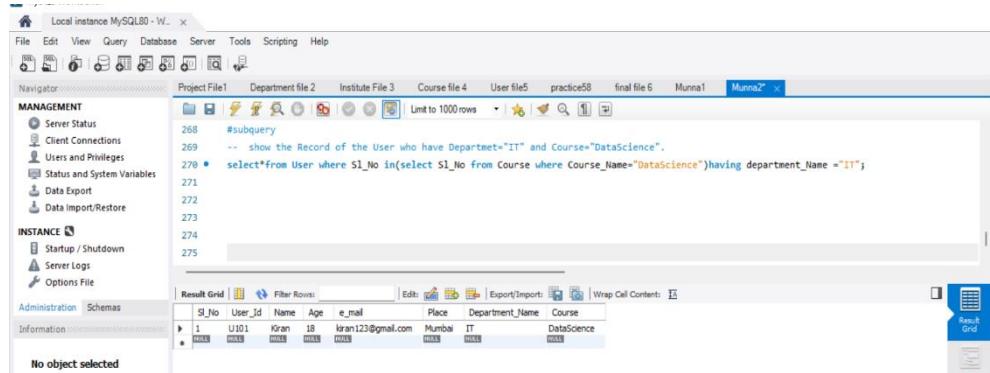
min(Course_fee)
20000

The Output pane shows the execution history:

Action	Time	Message	Duration / Fetch
select replace("Smart Class","Class","E-Class") LIMIT 0, 1000	134 18:49:43	1 row(s) returned	0.000 sec / 0.000 sec
select * from institute LIMIT 0, 1000	135 18:58:51	6 row(s) returned	0.000 sec / 0.000 sec
select * from Course LIMIT 0, 1000	136 18:59:04	12 row(s) returned	0.000 sec / 0.000 sec
select max(Course_fee) from Course	137 18:59:44	Error Code: 1064. You have an error in your SQL syntax; check the manual that corresponds to your MariaDB a... 0.000 sec	
select max(Course_fee) from Course LIMIT 0, 1000	138 19:00:03	1 row(s) returned	0.000 sec / 0.000 sec
select min(Course_fee) from Course LIMIT 0, 1000	139 19:00:36	1 row(s) returned	0.000 sec / 0.000 sec
select max(Course_fee) from Course LIMIT 0, 1000	140 19:02:13	1 row(s) returned	0.000 sec / 0.000 sec
select min(Course_fee) from Course LIMIT 0, 1000	141 19:03:10	1 row(s) returned	0.000 sec / 0.000 sec

Subqueries –

show the Record of the User who have Department="IT" and Course="DataScience".

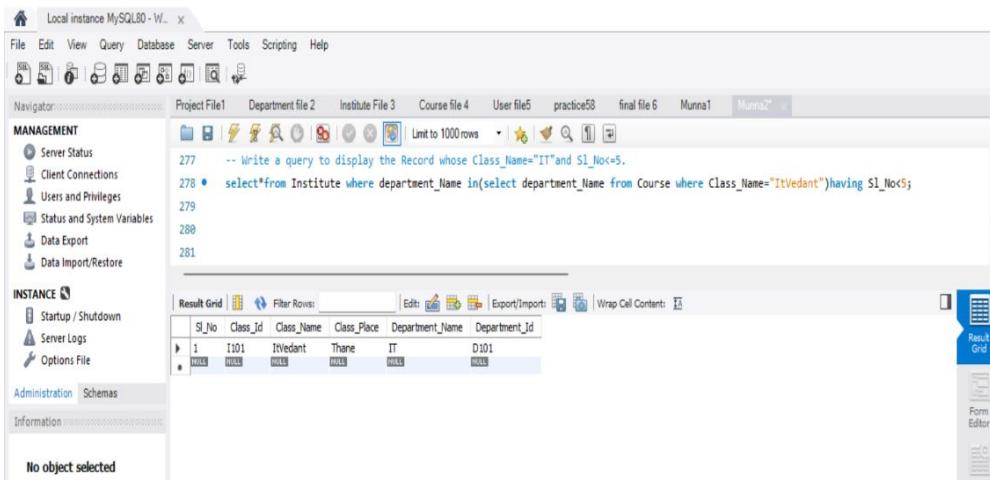


The screenshot shows the MySQL Workbench interface with a query editor and a results grid. The query is:`#subquery
-- show the Record of the User who have Department="IT" and Course="DataScience".
select*from User where Sl_No in(select Sl_No from Course where Course_Name="DataScience")having department_Name ="IT";`

The results grid displays the following data:

Sl_No	User_Id	Name	Age	e_mail	Place	Department_Name	Course
1	U101	Kiran	18	kiran123@gmail.com	Mumbai	IT	DataScience

Write a query to display the Record whose Class_Name="IT" and Sl_No<=5.

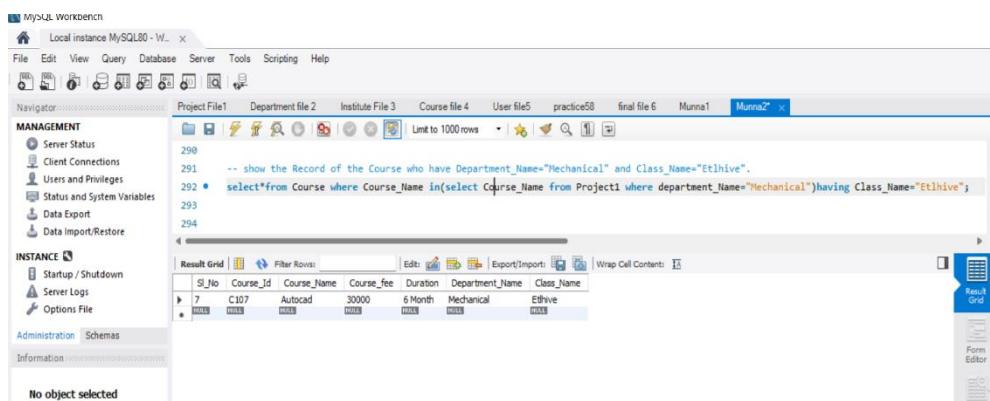


The screenshot shows the MySQL Workbench interface with a query editor and a results grid. The query is:`-- Write a query to display the Record whose Class_Name="IT" and Sl_No<=5.
select*from Institute where department_Name in(select department_Name from Course where Class_Name="ItVedant")having Sl_No<=5;`

The results grid displays the following data:

Sl_No	Class_Id	Class_Name	Class_Place	Department_Name	Department_Id
1	I101	ItVedant	Thane	IT	D101

show the Record of the Course who have Department_Name="Mechanical" and Class_Name="Etlhive".



The screenshot shows the MySQL Workbench interface with a query editor and a results grid. The query is:`-- show the Record of the Course who have Department_Name="Mechanical" and Class_Name="Etlhive".
select*from Course where Course_Name in(select Course_Name from Project1 where department_Name="Mechanical")having Class_Name="Etlhive";`

The results grid displays the following data:

Sl_No	Course_Id	Course_Name	Course_fee	Duration	Department_Name	Class_Name
7	C107	Autocad	30000	6 Month	Mechanical	Etlhive