

Lab 01Question 1

1. Departments

The screenshot shows the MySQL Workbench interface. The left sidebar displays the 'SCHEMAS' tree with 'company' selected. The central editor shows the following SQL script:

```

1 use Company;
2 CREATE TABLE departments (dept_no VARCHAR(4) NOT NULL,
3 dept_name VARCHAR(40) NOT NULL,
4 PRIMARY KEY(dept_no)
5 );

```

The right sidebar contains a message: "Automatic context help is disabled. Use the toolbar to manually get help for the current caret position or to toggle automatic help." The bottom output window shows the execution results:

#	Time	Action	Message	Duration / Fetch
9	13:24:25		Error Code: 1062. Duplicate entry '10010' for key 'dept_emp PRIMARY'	0.906 sec
10	13:26:28	DROP TABLE 'company`.`departments`, 'company`.`dept_emp`	0 row(s) affected	0.563 sec
11	13:27:50	use Company	0 row(s) affected	0.000 sec
12	13:27:50	CREATE TABLE departments (dept_no VARCHAR(4) NOT NULL, dept_name VARCHAR(40) NOT NULL, PRIMARY KEY(dept_no))	0 row(s) affected	0.547 sec

At the bottom, a status bar indicates "Query Completed" and the system clock shows 1:28 PM on 3/12/2020.

The screenshot shows the MySQL Workbench interface with the 'Result Grid' view selected. The central editor shows the following SQL script:

```

1 SELECT * FROM company.departments;

```

The right sidebar contains the same message as the previous screenshot. The bottom output window shows the execution results:

#	Time	Action	Message	Duration / Fetch
5	14:27:32		21694 row(s) affected Records: 21694 Duplicates: 0 Warnings: 0	0.688 sec
6	14:27:33		21695 row(s) affected Records: 21695 Duplicates: 0 Warnings: 0	0.578 sec
7	14:27:33		21700 row(s) affected Records: 21700 Duplicates: 0 Warnings: 0	0.766 sec
8	14:27:34		Error Code: 1062. Duplicate entry '110386-Technique Leader' for key 'titles PRIMARY'	0.906 sec
9	14:29:37	SELECT * FROM company.titles	130183 row(s) returned	0.062 sec / 0.313 sec
10	14:34:17	SELECT * FROM company.departments	9 row(s) returned	0.031 sec / 0.000 sec

The 'Result Grid' shows the following data for the 'departments' table:

dept_no	dept_name
d001	Marketing
d002	Finance
d003	Human Resources
d004	Production
d005	Development
d006	Quality Management
d007	Sales
d008	Research

At the bottom, a status bar indicates "Query Completed" and the system clock shows 2:34 PM on 3/12/2020.

2.dept_emp

The screenshot shows the MySQL Workbench interface. The left sidebar displays the 'SCHEMAS' tree with 'company' selected. The 'company' schema contains tables 'departments' and 'dept_emp'. The 'dept_emp' table is highlighted. The main editor shows the SQL script to create the 'dept_emp' table:

```
1 CREATE TABLE dept_emp (  
2   emp_no INTEGER NOT NULL,  
3   dept_no VARCHAR(50) NOT NULL,  
4   from_date DATE NOT NULL,  
5   to_date DATE NOT NULL,  
6   PRIMARY KEY(emp_no)  
7 );
```

The 'Output' pane at the bottom shows the execution results:

#	Time	Action	Message	Duration / Fetch
14	13:30:36	SELECT * FROM company.departments LIMIT 0, 1000	9 row(s) returned	0.047 sec / 0.000 sec
15	13:31:15	CREATE TABLE dept_emp (emp_no INTEGER NOT NULL, dept_no VARCHAR(50) N...	0 row(s) affected	0.062 seconds

The 'Information' pane on the left shows the structure of the 'departments' table:

Table: departments
Columns:
dept_no varchar(4) PK
dept_name varchar(40)

The screenshot shows the MySQL Workbench interface. The left sidebar displays the 'SCHEMAS' tree with 'company' selected. The 'company' schema contains tables 'departments', 'dept_emp', 'employees', 'salaries', and 'titles'. The 'dept_emp' table is highlighted. The main editor shows the SQL script to insert data into the 'dept_emp' table:

```
1 SELECT * FROM company.dept_emp;
```

The 'Result Grid' shows the data returned by the query:

emp_no	dept_no	from_date	to_date
10001	d005	1986-06-26	9999-01-01
10002	d007	1996-08-03	9999-01-01
10003	d004	1995-12-03	9999-01-01
10004	d004	1986-12-01	9999-01-01
10005	d003	1989-09-12	9999-01-01
10006	d005	1990-08-05	9999-01-01
10007	d008	1989-02-10	9999-01-01
10008	d005	1998-03-11	2000-07-31

The 'Output' pane at the bottom shows the execution results:

#	Time	Action	Message	Duration / Fetch
6	14:27:33		21695 row(s) affected Records: 21695 Duplicates: 0 Warnings: 0	0.578 sec
7	14:27:33		21700 row(s) affected Records: 21700 Duplicates: 0 Warnings: 0	0.766 sec
8	14:27:34		Error Code: 1062. Duplicate entry '110386-Technique Leader' for key 'titles.PRIMARY'	0.906 sec
9	14:29:37	SELECT * FROM company.titles	130183 row(s) returned	0.062 sec / 0.313 sec
10	14:34:17	SELECT * FROM company.departments	9 row(s) returned	0.031 sec / 0.000 sec
11	14:37:25	SELECT * FROM company.dept_emp	331603 row(s) returned	0.172 sec / 0.813 sec

The 'Information' pane on the left shows the structure of the 'titles' table:

Table: titles
Columns:
emp_no int PK
title varchar(50) PK
from_date date
to_date date

3.dept_manager

The screenshot shows the MySQL Workbench interface. The left sidebar displays the 'SCHEMAS' tree with 'company' expanded, showing 'dept_emp' selected. The main editor window shows the SQL script for creating the 'dept_manager' table:

```
1 CREATE TABLE dept_manager(  
2   dept_no CHAR(4) NOT NULL,  
3   emp_no INTEGER NOT NULL,  
4   from_date DATE NOT NULL,  
5   to_date DATE NOT NULL,  
6   PRIMARY KEY(dept_no, emp_no)  
7 )  
8 ;
```

The right sidebar shows a message: "Automatic context help is disabled. Use the toolbar to manually get help for the current caret position or to toggle automatic help." The bottom status bar indicates "Query Completed".

The screenshot shows the MySQL Workbench interface. The left sidebar displays the 'SCHEMAS' tree with 'company' expanded, showing 'dept_manager' selected. The main editor window shows the SQL script for inserting data into the 'dept_manager' table:

```
1 SELECT * FROM company.dept_manager;
```

The right sidebar shows a message: "Automatic context help is disabled. Use the toolbar to manually get help for the current caret position or to toggle automatic help." The bottom status bar indicates "Query Completed".

The 'Result Grid' shows the following data:

emp_no	dept_no	from_date	to_date
110022	d001	1985-01-01	1991-10-01
110039	d001	1991-10-01	1999-01-01
110085	d002	1985-01-01	1989-12-17
110114	d002	1989-12-17	1999-01-01
110183	d003	1985-01-01	1992-03-21
110228	d003	1992-03-21	1999-01-01
110303	d004	1985-01-01	1988-09-09
110344	d004	1988-09-09	1992-08-02

The 'Output' window shows the following data:

#	Time	Action	Message	Duration / Fetch
7	14:27:33		21700 row(s) affected Records: 21700 Duplicates: 0 Warnings: 0	0.766 sec
8	14:27:34		Error Code: 1062. Duplicate entry '110386-Technique Leader' for key titles.PRIMARY	0.906 sec
9	14:29:37	SELECT * FROM company.titles	130183 row(s) returned	0.062 sec / 0.313 sec
10	14:34:17	SELECT * FROM company.departments	9 row(s) returned	0.031 sec / 0.000 sec
11	14:37:25	SELECT * FROM company.dept_emp	331603 row(s) returned	0.172 sec / 0.813 sec
12	14:40:12	SELECT * FROM company.dept_manager	24 row(s) returned	0.031 sec / 0.000 sec

4.employees

The screenshot shows the MySQL Workbench interface with the 'company' schema selected. The 'employees' table is being created with the following SQL code:

```
1 CREATE TABLE employees(  
2   emp_no INTEGER NOT NULL,  
3   birth_date DATE NOT NULL,  
4   first_name VARCHAR(14) NOT NULL,  
5   last_name VARCHAR(16) NOT NULL,  
6   sex ENUM('M','F') NOT NULL,  
7   hire_date DATE NOT NULL,  
8   PRIMARY KEY(emp_no)  
9 );
```

The 'dept_manager' table is also visible in the Schemas pane with columns: emp_no (int PK), dept_no (char(4) PK), from_date (date), and to_date (date).

The Output pane shows the execution results:

#	Time	Action	Message	Duration / Fetch
41	13:47:59	SELECT * FROM company.dept_manager LIMIT 0, 1000	24 row(s) returned	0.000 sec / 0.000 sec
42	13:52:10	CREATE TABLE employees(emp_no INTEGER NOT NULL, birth_date DATE NOT NULL, first_name VARCHAR(14) NOT NULL, last_name VARCHAR(16) NOT NULL, sex ENUM('M','F') NOT NULL, hire_date DATE NOT NULL, PRIMARY KEY(emp_no))	0 row(s) affected	1.157 sec

The screenshot shows the MySQL Workbench interface with the 'employees' table being populated with data. The SQL code is as follows:

```
1  
2 INSERT INTO `employees` VALUES (10001,'1953-09-02','Georgi','Facello','M','1986-06-26'),  
3 (10002,'1964-06-02','Bezalel','Simmel','F','1985-11-21'),  
4 (10003,'1959-12-03','Parto','Bamford','M','1986-08-28'),  
5 (10004,'1954-05-01','Christian','Koblick','M','1986-12-01'),  
6 (10005,'1955-01-21','Kyoichi','Maliniak','M','1989-09-12'),  
7 (10006,'1953-04-20','Anneke','Preusig','F','1989-06-02'),  
8 (10007,'1957-05-23','Tzvetan','Zielinski','F','1989-02-10'),  
9 (10008,'1958-02-19','Saniya','Kalloufi','M','1994-09-15'),  
10 (10009,'1952-04-19','Sumant','Peac','F','1985-02-18'),  
11 (10010,'1963-06-01','Duangkhaew','Piveteau','F','1989-08-24'),  
12 (10011,'1953-11-07','Mary','Sluis','F','1990-01-22'),  
13 (10012,'1960-10-04','Patricio','Bridgland','M','1992-12-18'),  
14 (10013,'1963-06-07','Eberhardt','Terkki','M','1985-10-20'),  
15 (10014,'1956-02-12','Berni','Genin','M','1987-03-11'),  
16 (10015,'1959-08-19','Guoxiang','Mooteboom','M','1987-07-02'),  
17 (10016,'1961-05-02','Kazuhito','Cappelletti','M','1995-01-27'),  
18 (10017,'1958-07-06','Cristinel','Bouloucos','F','1993-08-03'),  
19 (10018,'1954-06-19','Kazuhide','Peha','F','1987-04-03'),  
20 (10019,'1953-01-23','Lillian','Haddadi','M','1999-04-30'),
```

The Output pane shows the execution results:

#	Time	Action	Message	Duration / Fetch
58	13:52:51	INSERT INTO `employees` VALUES (10001,'1953-09-02','Georgi','Facello','M','1986-06-26'), (10002,'1964-06-02','Bezalel','Simmel','F','1985-11-21'), (10003,'1959-12-03','Parto','Bamford','M','1986-08-28'), (10004,'1954-05-01','Christian','Koblick','M','1986-12-01'), (10005,'1955-01-21','Kyoichi','Maliniak','M','1989-09-12'), (10006,'1953-04-20','Anneke','Preusig','F','1989-06-02'), (10007,'1957-05-23','Tzvetan','Zielinski','F','1989-02-10'), (10008,'1958-02-19','Saniya','Kalloufi','M','1994-09-15'), (10009,'1952-04-19','Sumant','Peac','F','1985-02-18'), (10010,'1963-06-01','Duangkhaew','Piveteau','F','1989-08-24'), (10011,'1953-11-07','Mary','Sluis','F','1990-01-22'), (10012,'1960-10-04','Patricio','Bridgland','M','1992-12-18'), (10013,'1963-06-07','Eberhardt','Terkki','M','1985-10-20'), (10014,'1956-02-12','Berni','Genin','M','1987-03-11'), (10015,'1959-08-19','Guoxiang','Mooteboom','M','1987-07-02'), (10016,'1961-05-02','Kazuhito','Cappelletti','M','1995-01-27'), (10017,'1958-07-06','Cristinel','Bouloucos','F','1993-08-03'), (10018,'1954-06-19','Kazuhide','Peha','F','1987-04-03'), (10019,'1953-01-23','Lillian','Haddadi','M','1999-04-30')	17637 row(s) affected Records: 17637 Duplicates: 0 Warnings: 0	0.485 sec
59	13:52:52	INSERT INTO `employees` VALUES (10001,'1953-09-02','Georgi','Facello','M','1986-06-26'), (10002,'1964-06-02','Bezalel','Simmel','F','1985-11-21'), (10003,'1959-12-03','Parto','Bamford','M','1986-08-28'), (10004,'1954-05-01','Christian','Koblick','M','1986-12-01'), (10005,'1955-01-21','Kyoichi','Maliniak','M','1989-09-12'), (10006,'1953-04-20','Anneke','Preusig','F','1989-06-02'), (10007,'1957-05-23','Tzvetan','Zielinski','F','1989-02-10'), (10008,'1958-02-19','Saniya','Kalloufi','M','1994-09-15'), (10009,'1952-04-19','Sumant','Peac','F','1985-02-18'), (10010,'1963-06-01','Duangkhaew','Piveteau','F','1989-08-24'), (10011,'1953-11-07','Mary','Sluis','F','1990-01-22'), (10012,'1960-10-04','Patricio','Bridgland','M','1992-12-18'), (10013,'1963-06-07','Eberhardt','Terkki','M','1985-10-20'), (10014,'1956-02-12','Berni','Genin','M','1987-03-11'), (10015,'1959-08-19','Guoxiang','Mooteboom','M','1987-07-02'), (10016,'1961-05-02','Kazuhito','Cappelletti','M','1995-01-27'), (10017,'1958-07-06','Cristinel','Bouloucos','F','1993-08-03'), (10018,'1954-06-19','Kazuhide','Peha','F','1987-04-03'), (10019,'1953-01-23','Lillian','Haddadi','M','1999-04-30')	16209 row(s) affected Records: 16209 Duplicates: 0 Warnings: 0	0.534 sec

MySQL Workbench

Local instance MySQL80 x unconnected x

File Edit View Query Database Server Tools Scripting Help

Navigator: Filter objects

SCHEMAS

- company
 - Tables
 - departments
 - dept_emp
 - dept_manager
 - employees
 - salaries
 - titles
 - Views
 - Stored Procedures
 - Functions
 - hello
 - mv_database
 - Administration
 - Schemas

Table: titles

Columns:

- emp_no: int PK
- title: varchar(50) PK
- from_date: date
- to_date: date

SQL File 18: salaries titles - Table titles - Table titles departments dept_emp dept_manager employees

1 • SELECT * FROM company.employees;

Result Grid

emp_no	birth_date	first_name	last_name	sex	hire_date
10001	1953-09-02	Georgi	Facello	M	1986-06-26
10002	1964-06-02	Bezalel	Simmel	F	1985-11-21
10003	1959-12-03	Parto	Bamford	M	1986-08-28
10004	1954-05-01	Christban	Koblick	M	1986-12-01
10005	1955-01-21	Kyoichi	Mallinak	M	1989-09-12
10006	1953-04-20	Anneke	Preusig	F	1989-06-02
10007	1957-05-23	Tzvetan	Zielinski	F	1989-02-10
10008	1958-02-19	Saniya	Kaloufi	M	1994-09-15

employees 1 x

Output

#	Time	Action	Message	Duration / Fetch
8	14:27:34		Error Code: 1062. Duplicate entry '110386-Technique Leader' for key titles.PRIMARY	0.906 sec
9	14:29:37	SELECT * FROM company.titles	130183 row(s) returned	0.062 sec / 0.313 sec
10	14:34:17	SELECT * FROM company.departments	9 row(s) returned	0.031 sec / 0.000 sec
11	14:37:25	SELECT * FROM company.dept_emp	331603 row(s) returned	0.172 sec / 0.813 sec
12	14:40:12	SELECT * FROM company.dept_manager	24 row(s) returned	0.031 sec / 0.000 sec
13	14:42:52	SELECT * FROM company.employees	300024 row(s) returned	0.172 sec / 0.985 sec

Query Completed

Windows Taskbar: I'm Cortana, Ask me anything. 2:43 PM 3/12/2020

5.salaries

MySQL Workbench

Local instance MySQL80 x

File Edit View Query Database Server Tools Scripting Help

Navigator: Filter objects

SCHEMAS

- company
 - Tables
 - departments
 - dept_emp
 - dept_manager
 - employees
 - salaries
 - titles
 - Views
 - Stored Procedures
 - Functions
 - hello
 - mv_database
 - sys
 - Administration
 - Schemas

No object selected

SQL File 18: salaries titles - Table titles - Table titles departments dept_emp dept_manager employees

1 • CREATE TABLE salaries (
2 emp_no INTEGER NOT NULL,
3 salary INTEGER NOT NULL,
4 from_date DATE NOT NULL,
5 to_date DATE NOT NULL,
6 PRIMARY KEY(emp_no,from_date,to_date)
7);

Output

#	Time	Action	Message	Duration / Fetch
1	14:16:41	CREATE TABLE salaries (emp_no, INTEGER NOT NULL, salary INTEGER NOT NULL, fro...	Error Code: 1064. You have an error in your SQL syntax; check the manual that corresponds...	0.000 sec
2	14:16:49	CREATE TABLE salaries (emp_no, INTEGER NOT NULL, salary INTEGER NOT NULL, fro...	Error Code: 1064. You have an error in your SQL syntax; check the manual that corresponds...	0.000 sec
3	14:16:56	CREATE TABLE salaries (emp_no INTEGER NOT NULL, salary INTEGER NOT NULL, fro...	0 row(s) affected	0.422 sec

Windows Taskbar: I'm Cortana, Ask me anything. 2:16 PM 3/12/2020

MySQL Workbench

Local instance MySQL80 x

File Edit View Query Database Server Tools Scripting Help

Navigator

SCHEMAS

Filter objects

company

Tables

departments

dept_emp

dept_manager

employees

salaries

titles

Views

Stored Procedures

Functions

hello

my_database

Administration Schemas

Information

Table: dept_manager

Columns:

emp_no int PK

dept_no char(4) PK

from_date date

to_date date

titles

1 • SELECT * FROM company.titles;

Result Grid

emp_no	title	from_date	to_date
10001	Senior Engineer	1986-06-26	1999-01-01
10002	Staff	1996-08-03	1999-01-01
10003	Senior Engineer	1995-12-03	1999-01-01
10004	Engineer	1986-12-01	1995-12-01
10004	Senior Engineer	1995-12-01	1999-01-01
10005	Senior Staff	1996-09-12	1999-01-01

titles 1 x

Output

Action Output

#	Time	Action	Message	Duration / Fetch
29	22:09:02		21258 row(s) affected Records: 21258 Duplicates: 0 Warnings: 0	0.547 sec
30	22:09:02		21252 row(s) affected Records: 21252 Duplicates: 0 Warnings: 0	1.140 sec
31	22:09:03		21260 row(s) affected Records: 21260 Duplicates: 0 Warnings: 0	0.500 sec
32	22:09:04		21276 row(s) affected Records: 21276 Duplicates: 0 Warnings: 0	0.984 sec
33	22:09:05		15401 row(s) affected Records: 15401 Duplicates: 0 Warnings: 0	0.812 sec
34	22:09:31	SELECT * FROM company.titles	443308 row(s) returned	0.141 sec / 0.921 sec

Object Info Session

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

Activate Windows Go to Settings to activate Windows.

10:26 PM 3/13/2020

MySQL Workbench

Local instance MySQL80 x unconnected x

File Edit View Query Database Server Tools Scripting Help

Navigator

SCHEMAS

Filter objects

company

Tables

departments

dept_emp

dept_manager

employees

salaries

titles

Views

Stored Procedures

Functions

hello

my_database

Administration Schemas

Information

Table: titles

Columns:

emp_no int PK

title varchar(50) PK

from_date date

to_date date

salaries

1 • SELECT * FROM company.salaries;

Result Grid

emp_no	salary	from_date	to_date
201772	54369	1999-11-26	2000-11-25
201772	57497	2000-11-25	2001-11-25
201772	59306	2001-11-25	1999-01-01
201773	44729	1992-05-07	1993-05-07
201773	48686	1993-05-07	1994-05-07
201773	52568	1994-05-07	1995-05-07
201773	55796	1995-05-07	1996-05-06
201773	57282	1996-05-06	1997-05-06

salaries 1 x

Output

Action Output

#	Time	Action	Message	Duration / Fetch
9	14:29:37	SELECT * FROM company.titles	130183 row(s) returned	0.062 sec / 0.313 sec
10	14:34:17	SELECT * FROM company.departments	9 row(s) returned	0.031 sec / 0.000 sec
11	14:37:25	SELECT * FROM company.dept_emp	331603 row(s) returned	0.172 sec / 0.813 sec
12	14:40:12	SELECT * FROM company.dept_manager	24 row(s) returned	0.031 sec / 0.000 sec
13	14:42:52	SELECT * FROM company.employees	300024 row(s) returned	0.172 sec / 0.985 sec
14	14:44:44	SELECT * FROM company.salaries	1876717 row(s) returned	0.109 sec / 4.282 sec

Object Info Session

Query Completed

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

Activate Windows Go to Settings to activate Windows.

2:45 PM 3/12/2020

6. titles

The screenshot shows the MySQL Workbench interface. The 'SCHEMAS' pane on the left lists the 'company' database and its tables, including 'titles'. The main editor displays the SQL code to create the 'titles' table:

```
1 CREATE TABLE titles (  
2   emp_no INTEGER NOT NULL,  
3   title VARCHAR(50) NOT NULL,  
4   from_date DATE NOT NULL,  
5   to_date DATE NOT NULL,  
6   PRIMARY KEY(emp_no,title)  
7 );
```

The 'Output' pane shows the results of a series of SELECT queries executed against the 'company' database:

#	Time	Action	Message	Duration / Fetch
11	14:37:25	SELECT * FROM company.dept_emp	331603 row(s) returned	0.172 sec / 0.813 sec
12	14:40:12	SELECT * FROM company.dept_manager	24 row(s) returned	0.031 sec / 0.000 sec
13	14:42:52	SELECT * FROM company.employees	300024 row(s) returned	0.172 sec / 0.985 sec
14	14:44:44	SELECT * FROM company.salaries	1876717 row(s) returned	0.109 sec / 4.282 sec
15	14:46:50	SELECT * FROM company.titles	130183 row(s) returned	0.063 sec / 0.203 sec
16	14:52:41	SELECT * FROM company.titles	130183 row(s) returned	0.016 sec / 0.203 sec

The 'Table: titles' information pane on the left shows the columns: emp_no (int PK), title (varchar(50) PK), from_date (date), and to_date (date).

The screenshot shows the MySQL Workbench interface. The 'SCHEMAS' pane on the left lists the 'company' database and its tables, including 'titles'. The main editor displays the SQL code to select all records from the 'titles' table:

```
1 SELECT * FROM company.titles;
```

The 'Result Grid' shows the results of the query:

emp_no	title	from_date	to_date
10001	Senior Engineer	1986-06-26	9999-01-01
10002	Staff	1996-08-03	9999-01-01
10003	Senior Engineer	1995-12-03	9999-01-01
10004	Engineer	1986-12-01	1995-12-01
10004	Senior Engineer	1995-12-01	9999-01-01
10005	Senior Staff	1996-09-12	9999-01-01

The 'Output' pane shows the results of a series of SELECT queries executed against the 'company' database:

#	Time	Action	Message	Duration / Fetch
29	22:09:02		21258 row(s) affected Records: 21258 Duplicates: 0 Warnings: 0	0.547 sec
30	22:09:02		21252 row(s) affected Records: 21252 Duplicates: 0 Warnings: 0	1.140 sec
31	22:09:03		21260 row(s) affected Records: 21260 Duplicates: 0 Warnings: 0	0.500 sec
32	22:09:04		21276 row(s) affected Records: 21276 Duplicates: 0 Warnings: 0	0.984 sec
33	22:09:05		15401 row(s) affected Records: 15401 Duplicates: 0 Warnings: 0	0.812 sec
34	22:09:31	SELECT * FROM company.titles	443308 row(s) returned	0.141 sec / 0.921 sec

The 'Table: dept_manager' information pane on the left shows the columns: emp_no (int PK), dept_no (char(4) PK), from_date (date), and to_date (date).

Foreign Keys

The screenshot shows the MySQL Workbench interface. The left sidebar displays the 'SCHEMAS' tree with a 'company' database selected. The main editor window shows a series of SQL queries to add foreign keys to the 'dept_manager', 'dept_emp', 'dept_manager', 'titles', and 'salaries' tables. The 'employees' table is highlighted in the 'titles' tab. The right sidebar shows the 'SQL Additions' panel with a message about automatic context help being disabled. The bottom status bar shows the time as 10:33 AM on 3/14/2020.

```
1 ALTER TABLE dept_manager ADD FOREIGN KEY(dept_no) REFERENCES departments (dept_no)
2 ON DELETE CASCADE ON UPDATE CASCADE;
3
4 ALTER TABLE dept_emp ADD FOREIGN KEY(dept_no) REFERENCES departments (dept_no)
5 ON DELETE CASCADE ON UPDATE CASCADE;
6
7 ALTER TABLE dept_emp ADD FOREIGN KEY(emp_no) REFERENCES employees (emp_no)
8 ON DELETE CASCADE ON UPDATE CASCADE;
9 ALTER TABLE dept_manager ADD FOREIGN KEY(emp_no) REFERENCES employees (emp_no)
10 ON DELETE CASCADE ON UPDATE CASCADE;
11 ALTER TABLE titles ADD FOREIGN KEY(emp_no) REFERENCES employees (emp_no)
12 ON DELETE CASCADE ON UPDATE CASCADE;
13 ALTER TABLE salaries ADD FOREIGN KEY(emp_no) REFERENCES employees (emp_no)
14 ON DELETE CASCADE ON UPDATE CASCADE;
```

#	Time	Action	Message	Duration / Fetch
1	10:25:32	ALTER TABLE dept_manager ADD FOREIGN KEY(dept_no) REFERENCES departments (...)	24 row(s) affected Records: 24 Duplicates: 0 Warnings: 0	1.922 sec
2	10:26:29	ALTER TABLE dept_emp ADD FOREIGN KEY(dept_no) REFERENCES departments (dept_...	331603 row(s) affected Records: 331603 Duplicates: 0 Warnings: 0	17.000 sec
3	10:27:38	ALTER TABLE dept_emp ADD FOREIGN KEY(emp_no) REFERENCES employees (emp_n...	331603 row(s) affected Records: 331603 Duplicates: 0 Warnings: 0	21.047 sec
4	10:28:53	ALTER TABLE dept_manager ADD FOREIGN KEY(emp_no) REFERENCES employees (em...	24 row(s) affected Records: 24 Duplicates: 0 Warnings: 0	2.391 sec
5	10:29:54	ALTER TABLE titles ADD FOREIGN KEY(emp_no) REFERENCES employees (emp_no) ON...	443308 row(s) affected Records: 443308 Duplicates: 0 Warnings: 0	20.672 sec
6	10:30:54	ALTER TABLE salaries ADD FOREIGN KEY(emp_no) REFERENCES employees (emp_no) ...	Error Code: 2013. Lost connection to MySQL server during query	30.015 sec
7	10:31:42	ALTER TABLE salaries ADD FOREIGN KEY(emp_no) REFERENCES employees (emp_no) ...	Error Code: 2013. Lost connection to MySQL server during query	30.015 sec
8	10:32:53	ALTER TABLE salaries ADD FOREIGN KEY(emp_no) REFERENCES employees (emp_no) ...	Error Code: 2013. Lost connection to MySQL server during query	30.016 sec

The screenshot shows the phpMyAdmin interface. The left sidebar displays the 'New' button and a tree view of the database schema. The main editor window shows the 'SQL' tab with two queries. The first query is a simple SELECT statement, and the second query is an ALTER TABLE statement to add a foreign key to the 'salaries' table. The bottom status bar shows the time as 10:46 AM on 3/14/2020.

```
ALTER TABLE salaries ADD FOREIGN KEY(emp_no) REFERENCES employees(emp_no) ON DELETE CASCADE ON UPDATE CASCADE
```


Question 2

The screenshot shows the MySQL Workbench interface. The left sidebar displays the 'SCHEMAS' tree with 'company' expanded, showing tables like 'dept_manager', 'employees', and 'titles'. The main editor window shows a query: `SELECT last_name FROM employees LIMIT 10;`. The 'Result Grid' shows the results of this query, listing the last names of 10 employees: Facello, Simmel, Bamford, Koblick, Malniak, Preusig, Zielinski, Kaloufi, Peac, and Piveteau. The 'Action Output' pane at the bottom shows the execution progress of the query.

#	Time	Action	Message	Duration / Fetch
34	22:09:31	SELECT * FROM company.titles	443308 row(s) returned	0.141 sec / 0.921 sec
35	22:29:23	SELECT * FROM company.employees	300024 row(s) returned	0.047 sec / 0.468 sec
36	22:35:22	SELECT last_name FROM employees LIMIT 10	10 row(s) returned	0.031 sec / 0.000 sec

Question 3

The screenshot shows the MySQL Workbench interface. The left sidebar displays the 'SCHEMAS' tree with 'company' expanded, showing tables like 'dept_manager', 'employees', and 'titles'. The main editor window shows a complex query: `SELECT departments.dept_name, COUNT(*) FROM titles, employees, dept_emp, departments WHERE titles.title LIKE '%Engineer' AND employees.emp_no=titles.emp_no AND employees.emp_no=dept_emp.emp_no AND dept_emp.dept_no=departments.dept_no GROUP BY departments.dept_name ORDER BY COUNT(*) DESC`. The 'Result Grid' shows the results of this query, listing the department names and their corresponding counts: Development (115230), Production (98299), Quality Management (27547), Research (5934), and Customer Service (4687). The 'Action Output' pane at the bottom shows the execution progress of the query.

#	Time	Action	Message	Duration / Fetch
24	17:03:38	SELECT departments.dept_name, COUNT(*) FROM titles, employees, dept_emp, departments	5 row(s) returned	3.828 sec / 0.000 sec
25	17:03:58	SELECT * FROM company.titles	443308 row(s) returned	0.047 sec / 0.656 sec
26	17:04:02	SELECT departments.dept_name, titles.COUNT(*) FROM titles, employees, dept_emp, departments	5 row(s) returned	14.672 sec / 0.000 sec
27	17:04:37	SELECT departments.dept_name, titles.COUNT(*) FROM titles, employees, dept_emp, departments	5 row(s) returned	14.765 sec / 0.000 sec
28	17:05:05	SELECT departments.dept_name, COUNT(*) FROM titles, employees, dept_emp, departments	5 row(s) returned	3.828 sec / 0.000 sec

Question 4

The screenshot shows the MySQL Workbench interface. The left sidebar displays the 'SCHEMAS' tree with 'company' selected. The main editor shows a SQL query:

```
1 SELECT employees.emp_no,employees.first_name,employees.last_name,dept_manager.dept_no
2 FROM employees,titles,dept_manager
3 WHERE titles.title='Senior Engineer' AND employees.sex='F'
4 AND titles.emp_no=employees.emp_no AND employees.emp_no=dept_manager.emp_no;
```

The 'Result Grid' shows the following data:

emp_no	first_name	last_name	dept_no
110344	Rosine	Cools	d004
110800	Sarjoo	Quadeer	d006

The 'Output' pane shows the execution results:

#	Time	Action	Message	Duration / Fetch
1	19:39:01	SELECT employees emp_no,departments dept_name,titles title,salaries.salary FROM emplo...	21228 row(s) returned	2.437 sec / 6.328 sec
2	19:39:34	SELECT departments dept_name,count(DISTINCT employees emp_no) FROM employee...	9 row(s) returned	4.843 sec / 0.000 sec
3	20:00:13	SELECT employees emp_no,employees first_name,employees last_name,dept_manager de...	2 row(s) returned	0.078 sec / 0.000 sec

The status bar at the bottom indicates 'Query Completed' and the system clock shows 8:00 PM on 3/14/2020.

Question 5

The screenshot shows the MySQL Workbench interface. The left sidebar displays the 'SCHEMAS' tree with 'company' selected. The main editor shows a SQL query:

```
2 SELECT departments.dept_name,titles.title,count(DISTINCT employees.emp_no) as no_of_employees
3 FROM employees,departments,titles,salaries,dept_emp
4 WHERE salaries.salary > 115000 AND salaries.emp_no=employees.emp_no
5 AND titles.emp_no=employees.emp_no AND employees.emp_no=dept_emp.emp_no
6 AND dept_emp.dept_no=departments.dept_no
7 GROUP BY departments.dept_name,titles.title;
```

The 'Result Grid' shows the following data:

dept_name	title	no_of_employees
Customer Service	Engineer	4
Customer Service	Senior Engineer	7
Customer Service	Senior Staff	110
Customer Service	Staff	90
Development	Assistant Engineer	15
Development	Engineer	86
Development	Senior Engineer	95
Development	Senior Staff	1
Development	Technique Leader	9
Finance	Senior Staff	219

The 'Output' pane shows the execution results:

#	Time	Action	Message	Duration / Fetch
1	14:09:55	SELECT departments dept_name,titles title,count(DISTINCT employees emp_no) as no_of...	31 row(s) returned	9.297 sec / 0.000 sec

The status bar at the bottom indicates 'Query Completed' and the system clock shows 2:10 PM on 3/16/2020.

Question 6

The screenshot shows the MySQL Workbench interface. The SQL editor contains the following code:

```
1 CREATE VIEW temp AS
2 SELECT e.emp_no,e.from_date,e.to_date,SUM(e.age) AS service
3 FROM
4 (SELECT emp_no,from_date,If(year(to_date)>year(current_date()),current_date(),to_date) as to_date,
5 SUM(TIMESTAMPDIFF(YEAR,from_date,If(year(to_date)>year(current_date()),current_date(),to_date))) AS age
6 FROM titles
7 group by emp_no
8 UNION
9 SELECT emp_no,from_date,to_date,TIMESTAMPDIFF(YEAR,from_date,to_date) as age
10 FROM dept_manager
11 ) as e
12 group by emp_no;
```

The Output pane shows the execution results:

#	Time	Action	Message	Duration / Fetch
1	10:54:25	CREATE VIEW temp AS SELECT e.emp_no,e.from_date,e.to_date,SUM(e.age) AS service...	0 row(s) affected	0.140 sec

On the right side, a message states: "Automatic context help is disabled. Use the toolbar to manually get help for the current caret position or to toggle automatic help."

The screenshot shows the MySQL Workbench interface. The SQL editor contains the following code:

```
15
16 SELECT employees.emp_no,CONCAT(employees.first_name,employees.last_name) AS name,employees.hire_date,
17 TIMESTAMPDIFF(YEAR,employees.birth_date,now()) AS age,service
18 FROM employees,temp
19 WHERE (TIMESTAMPDIFF(YEAR,employees.birth_date,now())>50) AND employees.emp_no=temp.emp_no AND service>10;
```

The Output pane shows the execution results:

#	Time	Action	Message	Duration / Fetch
1	10:54:25	CREATE VIEW temp AS SELECT e.emp_no,e.from_date,e.to_date,SUM(e.age) AS service...	0 row(s) affected	0.140 sec
2	10:54:47	SELECT employees.emp_no,CONCAT(employees.first_name,employees.last_name) AS na...	244999 row(s) returned	1.828 sec / 2.359 sec

The Result Grid shows the following data:

emp_no	name	hire_date	age	service
10001	GeorgiFacello	1986-06-26	66	33
10002	BezaelSimmel	1985-11-21	55	23
10003	PartoSamford	1986-08-28	60	24
10004	ChristaniKoblick	1986-12-01	65	33
10005	KyoichiMaliniak	1989-09-12	65	30

On the right side, a message states: "Automatic context help is disabled. Use the toolbar to manually get help for the current caret position or to toggle automatic help."

Question 7

The screenshot shows the MySQL Workbench interface. The left sidebar displays the 'SCHEMAS' tree with 'company' selected. The main editor shows a SQL query:

```
1 SELECT CONCAT(employees.first_name, ' ', employees.last_name) AS name
2 FROM employees, dept_emp, departments
3 WHERE employees.emp_no=dept_emp.emp_no AND dept_emp.dept_no=departments.dept_no
4 AND departments.dept_name != 'Human Resources';
5
```

The 'Result Grid' shows the following data:

name
Cristinel Bouloucos
Georgy Dredge
Berhard McFarlin
Lunjin Givcon
Yuuel Auria
Aleksandar Ananiadou
Xiping Klerer
Karoline Cesareni
Nikolaos Uedo
Susanna Vesel
Dyelloul Laventhal
Phule Hammerschmidt

The 'Output' pane shows the execution message: '1 16:19:27 SELECT CONCAT(employees.first_name, ' ', employees.last_name) AS name FROM employees, dept_emp, departments WHERE employees.emp_no=dept_emp.emp_no AND dept_emp.dept_no=departments.dept_no AND departments.dept_name != 'Human Resources'; 313817 row(s) returned'. The duration is 0.094 sec / 10.812 sec.

Question 8

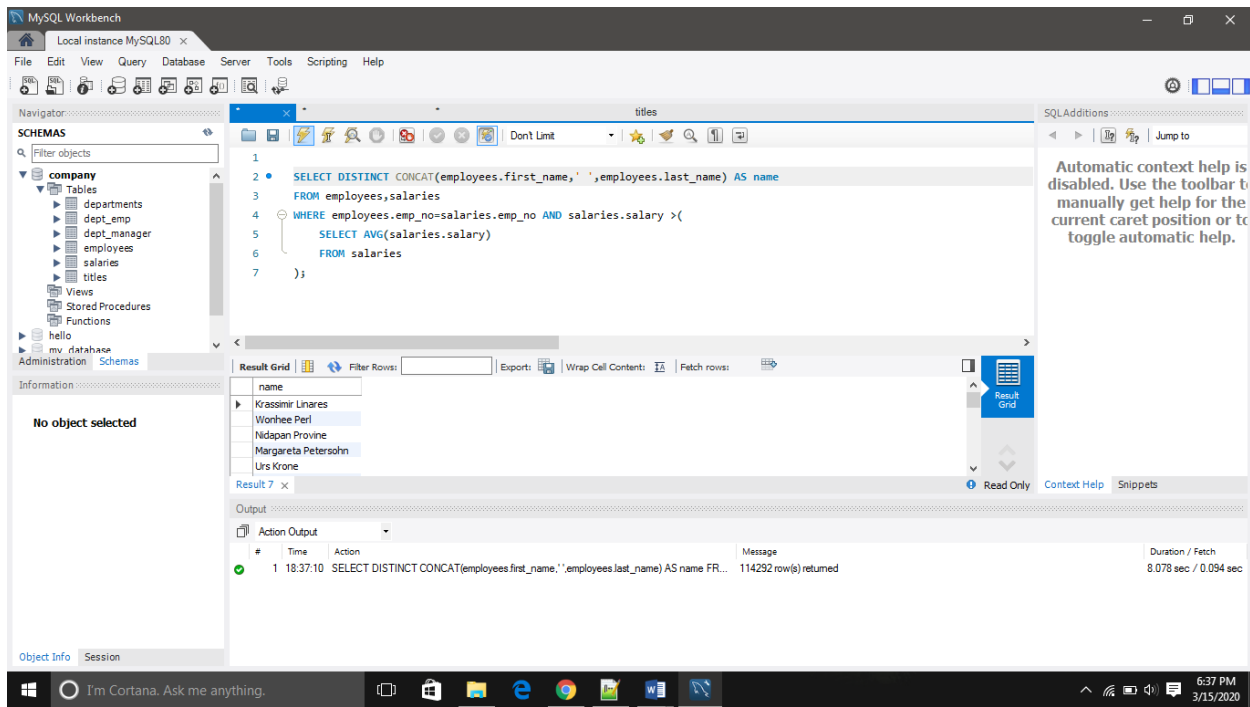
The screenshot shows the phpMyAdmin interface. The left sidebar displays the 'Database: company' tree with 'employees' selected. The main editor shows a SQL query:

```
SELECT DISTINCT CONCAT( employees.first_name, ' ', employees.last_name) AS name FROM employees, salaries, dept_emp, departments WHERE employees.emp_no=salaries.emp_no AND dept_emp.emp_no=employees.emp_no AND dept_emp.dept_no=departments.dept_no AND departments.dept_name='Finance' AND salaries.salary > (SELECT MAX(s.salary) FROM employees AS E, salaries AS S, dept_emp AS DE, departments AS D WHERE E.emp_no=S.emp_no AND DE.emp_no=E.emp_no AND DE.dept_no=D.dept_no AND D.dept_name='Finance')
```

The 'Result Grid' shows the following data:

name
Akemi Warwick
Charmaine Griswold
Boalin Rosen
Nikolaus Businaro
JoAnne Matheson
Wonhee Pagter
Tadanori Sudbeck
Weicheng Hatcliff
Chaitali Baik
Mitsuyuki Stanfel
Dines Giaccio
Amid Junot
Heping Brender
Sanjai Luders
Honesty Mukaidono
Honglan Otilio
Console/nwald

Question 9

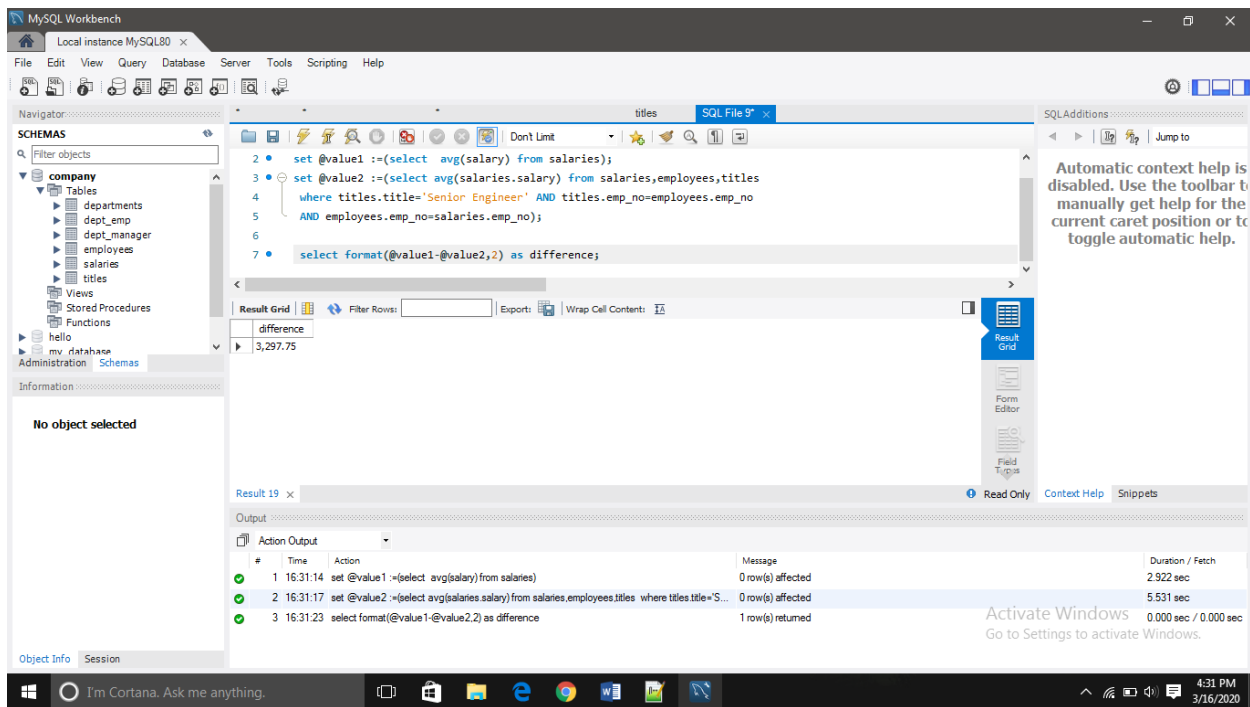


A screenshot of the MySQL Workbench interface. The left sidebar shows the 'SCHEMAS' pane with a tree view of the 'company' database, including tables like 'employees', 'salaries', and 'titles'. The main editor window displays an SQL query:

```
1 SELECT DISTINCT CONCAT(employees.first_name, ' ', employees.last_name) AS name
2 FROM employees, salaries
3 WHERE employees.emp_no=salaries.emp_no AND salaries.salary > (
4 SELECT AVG(salaries.salary)
5 FROM salaries
6 );
```

 The 'Result Grid' pane shows a single row with the name 'Kassimir Linares'. The 'Output' pane shows the execution message: 'SELECT DISTINCT CONCAT(employees.first_name, ' ', employees.last_name) AS name FR... 114292 row(s) returned'. A context help window is open on the right, stating: 'Automatic context help is disabled. Use the toolbar to manually get help for the current caret position or to toggle automatic help.'

Question 10



A screenshot of the MySQL Workbench interface. The left sidebar shows the 'SCHEMAS' pane with a tree view of the 'company' database. The main editor window displays an SQL script:

```
2 set @value1 :=(select avg(salary) from salaries);
3 set @value2 :=(select avg(salaries.salary) from salaries, employees, titles
4 where titles.title='Senior Engineer' AND titles.emp_no=employees.emp_no
5 AND employees.emp_no=salaries.emp_no);
6
7 select format(@value1-@value2,2) as difference;
```

 The 'Result Grid' pane shows a single row with the value '3,297.75'. The 'Output' pane shows the execution messages: 'set @value1 :=(select avg(salary) from salaries) 0 row(s) affected', 'set @value2 :=(select avg(salaries.salary) from salaries, employees, titles where titles.title='S... 0 row(s) affected', and 'select format(@value1-@value2,2) as difference 1 row(s) returned'. A context help window is open on the right, stating: 'Automatic context help is disabled. Use the toolbar to manually get help for the current caret position or to toggle automatic help.'

Question 11

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

- Navigator:** Schemas list includes employees, salaries, salary_updates, titles, Views (current_dept, current_dept_emp, temp), Stored Procedures (print_info), Functions (hello, mv database, Administration), and Schemas.
- Table: employees:** Columns include emp_no (int PK), birth_date (date), first_name (varchar(14)), last_name (varchar(16)), sex (enum('M','F')), and hire_date (date).
- SQL Editor:** Contains two SQL statements:

```
1 CREATE VIEW current_dept(emp_no,fromdate,lastdate,deptname) AS
2 SELECT dept_emp.emp_no,dept_emp.from_date,dept_emp.to_date,departments.dept_name
3 FROM dept_emp,departments
4 WHERE dept_emp.dept_no=departments.dept_no AND dept_emp.to_date>current_date();
5
6 CREATE VIEW current_dept_emp(emp_no,name,deptname,fromdate,lastdate) AS
7 SELECT employees.emp_no,CONCAT(employees.first_name,' ',employees.last_name),current_dept.deptname,
8 current_dept.fromdate,current_dept.lastdate
9 FROM employees,current_dept
10 WHERE current_dept.emp_no=employees.emp_no;
```
- Output:** Action Output table showing the execution of the two CREATE VIEW statements. Both completed successfully with 0 rows affected.
- Message:** "Automatic context help is disabled. Use the toolbar to manually get help for the current caret position or to toggle automatic help."
- Footer:** "Activate Windows Go to Settings to activate Windows."

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

- Navigator:** Same as the previous screenshot.
- Table: employees:** Same as the previous screenshot.
- SQL Editor:** Contains a single SQL statement:

```
1 SELECT * FROM company.current_dept;
```
- Result Grid:** Displays the results of the query, showing columns emp_no, fromdate, lastdate, and deptname. The data includes employees from the Marketing department.
- Output:** Action Output table showing the execution of the SELECT query. It returned 240124 rows.
- Message:** "Automatic context help is disabled. Use the toolbar to manually get help for the current caret position or to toggle automatic help."
- Footer:** "Activate Windows Go to Settings to activate Windows."

MySQL Workbench

Local instance MySQL80

File Edit View Query Database Server Tools Scripting Help

Navigator

SCHEMAS

Filter objects

employees
salaries
salary_updates
titles
Views
current_dept
current_dept_emp
temp
Stored Procedures
print_info
Functions
hello
mv database
Administration Schemas

Information

Table: employees

Columns:

emp_no int PK
birth_date date
first_name varchar(14)
last_name varchar(16)
sex enum('M','F')
hire_date date

Query

```
1 • SELECT * FROM company.current_dept_emp;
```

Result Grid

emp_no	name	deptname	fromdate	lastdate
10340	Djeloul Laventhal	Marketing	1988-03-30	9999-01-01
10353	Phule Hammerschmidt	Marketing	1989-08-24	9999-01-01
10367	Hyuckchul Gini	Marketing	1991-06-24	9999-01-01
10384	Feiyu Luft	Marketing	1986-01-16	9999-01-01
10418	Candida Porotnikoff	Marketing	1996-10-04	9999-01-01
10449	Aleksandar Sudkamp	Marketing	1996-03-12	9999-01-01
10491	Garrik Narahari	Marketing	1990-01-17	9999-01-01
10448	Bansalman Gundersen	Marketing	1991-10-04	9999-01-01

Output

Action Output

#	Time	Action	Message	Duration / Fetch
1	21:52:14	CREATE VIEW current_dept(emp_no,fromdate,lastdate,deptname) AS SELECT dept_emp...	0 row(s) affected	0.141 sec
2	21:52:15	CREATE VIEW curen_dept_emp(emp_no,name,deptname,fromdate,lastdate) AS SELEC...	0 row(s) affected	0.125 sec
3	21:52:39	SELECT * FROM company.current_dept	240124 row(s) returned	0.078 sec / 11.813 sec
4	21:52:52	SELECT * FROM company.current_dept_emp	240124 row(s) returned	0.141 sec / 15.187 sec

Activate Windows
Go to Settings to activate Windows.

9:53 PM
3/18/2020

Question 12

MySQL Workbench

Local instance MySQL80

File Edit View Query Database Server Tools Scripting Help

Navigator

SCHEMAS

Filter objects

employees
salaries
salary_updates
titles
Views
current_dept
current_dept_emp
temp
Stored Procedures
print_info
Functions
hello
mv database
Administration Schemas

Information

Table: employees

Columns:

emp_no int PK
birth_date date
first_name varchar(14)
last_name varchar(16)
sex enum('M','F')
hire_date date

Query

```
1 • SELECT employees.emp_no,CONCAT(employees.first_name,' ',employees.last_name) AS name,  
2 dept_emp.from_date,dept_emp.to_date,departments.dept_name  
3 FROM employees,dept_emp,departments  
4 WHERE employees.emp_no=dept_emp.emp_no AND dept_emp.dept_no=departments.dept_no  
5 AND dept_emp.to_date>current_date();
```

Result Grid

emp_no	name	from_date	to_date	dept_name
10017	Cristinel Bouloucos	1993-08-03	9999-01-01	Marketing
10058	Berhard McFarlin	1988-04-25	9999-01-01	Marketing
10140	Yucel Auria	1991-03-14	9999-01-01	Marketing
10228	Karoline Cesareni	1993-01-28	9999-01-01	Marketing
10239	Nikolaos Llado	1996-05-04	9999-01-01	Marketing
10340	Djeloul Laventhal	1988-03-30	9999-01-01	Marketing
10353	Phule Hammerschmidt	1989-08-24	9999-01-01	Marketing
10367	Hyuckchul Gini	1991-06-24	9999-01-01	Marketing
10384	Feiyu Luft	1986-01-16	9999-01-01	Marketing
10418	Candida Porotnikoff	1996-10-04	9999-01-01	Marketing

Output

Action Output

#	Time	Action	Message	Duration / Fetch
1	22:03:55	SELECT employees.emp_no,CONCAT(employees.first_name,' ',employees.last_name), dep...	240124 row(s) returned	0.093 sec / 15.110 sec
2	22:05:11	SELECT employees.emp_no,CONCAT(employees.first_name,' ',employees.last_name) AS ...	240124 row(s) returned	0.093 sec / 15.813 sec

Activate Windows
Go to Settings to activate Windows.

10:05 PM
3/18/2020

Question 13

The screenshot shows the MySQL Workbench interface. The left sidebar displays the 'SCHEMAS' tree with a search filter. The main editor window contains a SQL script to create a table named 'salary_updates'. The 'Output' pane at the bottom shows the successful execution of the 'CREATE TABLE' statement, indicating that 0 rows were affected. A context help panel on the right is visible, and a Windows taskbar is at the bottom.

MySQL Workbench

Local instance MySQL80

File Edit View Query Database Server Tools Scripting Help

Navigator

SQL File 9* SQL File 33* salaries employees employees salaries salaries salaries salaries dept_manager

SCHEMAS

Filter objects

dept_emp
dept_manager
employees
salaries
titles
Views
current_dept_emp
current_dept
temp
Stored Procedures
print_info
Functions
Administration Schemas

Information

No object selected

Object Info Session

14
15 CREATE TABLE salary_updates (
16 emp_no INTEGER,
17 new_salary INTEGER,
18 old_salary INTEGER,
19 difference INTEGER
20);
21
22
23
24

SQLAdditions

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

Context Help Snippets

Output

Action Output

#	Time	Action	Message	Duration / Fetch
1	17:59:06	CREATE TABLE salary_updates (emp_no INTEGER, new_salary INTEGER, old_salary INT...	0 row(s) affected	1.391 sec

Activate Windows
Go to Settings to activate Windows.

Windows taskbar: I'm Cortana. Ask me anything. 5:59 PM 3/18/2020

The screenshot shows the MySQL Workbench interface. The left sidebar displays the 'SCHEMAS' tree with a search filter. The main editor window contains a SQL script to create a trigger named 'print_updated_info' and an update query. The 'Output' pane at the bottom shows the successful execution of both statements, indicating that 0 rows were affected by the trigger creation and 3 rows were updated. A context help panel on the right is visible, and a Windows taskbar is at the bottom.

MySQL Workbench

Local instance MySQL80

File Edit View Query Database Server Tools Scripting Help

Navigator

SQL File 9* SQL File 33* salaries employees employees salaries salaries salaries salaries dept_manager salary_updates salary_updates

SCHEMAS

Filter objects

departments
dept_emp
dept_manager
employees
salaries
titles
Views
current_dept_emp
current_dept
temp
Stored Procedures
print_info
Functions
Administration Schemas

Information

Table: dept_emp

Columns:
emp_no int PK
dept_no varchar(4) PK
from_date date
to_date date

Object Info Session

1
2 delimiter |
3 CREATE TRIGGER print_updated_info
4 BEFORE UPDATE ON salaries
5 FOR EACH ROW BEGIN
6 IF new.salary != old.salary THEN
7 INSERT INTO salary_updates VALUES(NEW.emp_no,NEW.salary,OLD.salary,NEW.salary-OLD.salary);
8 END IF;
9 END ;
10 delimiter ;
11
12 update salaries
13 set salary=salary+1000
14 where emp_no='201772';
15
16
17

SQLAdditions

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

Context Help Snippets

Output

Action Output

#	Time	Action	Message	Duration / Fetch
1	18:08:11	CREATE TRIGGER print_updated_info BEFORE UPDATE ON salaries FOR EACH ROW B...	0 row(s) affected	0.172 sec
2	18:08:34	update salaries set salary=salary+1000 where emp_no='201772'	3 row(s) affected Rows matched: 3 Changed: 3 Warnings: 0	0.188 sec

Activate Windows
Go to Settings to activate Windows.

Windows taskbar: I'm Cortana. Ask me anything. 6:08 PM 3/18/2020

MySQL Workbench

Local instance MySQL80

File Edit View Query Database Server Tools Scripting Help

Navigator employees salaries salaries salaries salaries dept_manager salary_updates salary_updates

SCHEMAS

Filter objects

company

- Tables
 - departments
 - dept_emp
 - dept_manager
 - employees
 - salaries
 - salary_updates
 - titles
- Views
 - current_dept_emp
 - current_dept
 - temm

Administration Schemas

Information

Table: dept_manager

Columns:

- emp_no int PK
- dept_no char(4) PK
- from_date date
- to_date date

```
12
13 • update salaries
14   set salary=salary+1000
15   where emp_no='201772';
16
17 • select * from salary_updates;
18
19
20
21
```

Result Grid

emp_no	new_salary	old_salary	difference
201772	60369	59369	1000
201772	62497	61497	1000
201772	64306	63306	1000

salary_updates 2

Output

Action Output

#	Time	Action	Message	Duration / Fetch
1	18:08:11	CREATE TRIGGER print_updated_info BEFORE UPDATE ON salaries FOR EACH ROW ...	0 row(s) affected	0.172 sec
2	18:08:34	update salaries set salary=salary+1000 where emp_no='201772'	3 row(s) affected Rows matched: 3 Changed: 3 Warnings: 0	0.188 sec
3	18:09:13	select * from salary_updates	3 row(s) returned	0.000 sec / 0.000 sec

Activate Windows
Go to Settings to activate Windows.

6:09 PM
3/18/2020

Question 14

MySQL Workbench interface showing the creation of a trigger. The SQL editor contains the following code:

```
6 delimiter |
7 CREATE TRIGGER update_error
8 BEFORE UPDATE ON salaries
9 FOR EACH ROW BEGIN
10 IF((new.salary-old.salary)/old.salary) *100>10 THEN
11 SIGNAL SQLSTATE '45000' set message_text='Can not update';
12 END IF;
13 END |
14 delimiter ;
15
```

The Output pane shows the execution results:

#	Time	Action	Message	Duration / Fetch
1	17:36:04	CREATE TRIGGER update_error BEFORE UPDATE ON salaries FOR EACH ROW BEG...	0 row(s) affected	0.187 sec
2	17:36:04	SHOW triggers	1 row(s) returned	0.000 sec / 0.000 sec

Information: No object selected

MySQL Workbench interface showing the execution of an update statement. The SQL editor contains the following code:

```
1 update salaries
2 set salary=salary+8000
3 where emp_no='201772';
4
5
6 delimiter |
7 CREATE TRIGGER update_error
8 BEFORE UPDATE ON salaries
9 FOR EACH ROW BEGIN
10 IF((new.salary-old.salary)/old.salary) *100>10 THEN
11 SIGNAL SQLSTATE '45000' set message_text='Can not update';
12 END IF;
13 END |
14
```

The Output pane shows the execution results:

#	Time	Action	Message	Duration / Fetch
1	17:36:04	CREATE TRIGGER update_error BEFORE UPDATE ON salaries FOR EACH ROW BEG...	0 row(s) affected	0.187 sec
2	17:36:04	SHOW triggers	1 row(s) returned	0.000 sec / 0.000 sec
3	17:36:39	update salaries set salary=salary+1000 where emp_no='201772'	3 row(s) affected Rows matched: 3 Changed: 3 Warnings: 0	0.125 sec
4	17:36:48	update salaries set salary=salary+8000 where emp_no='201772'	Error Code: 1644. Can not update	0.000 sec

Information: No object selected