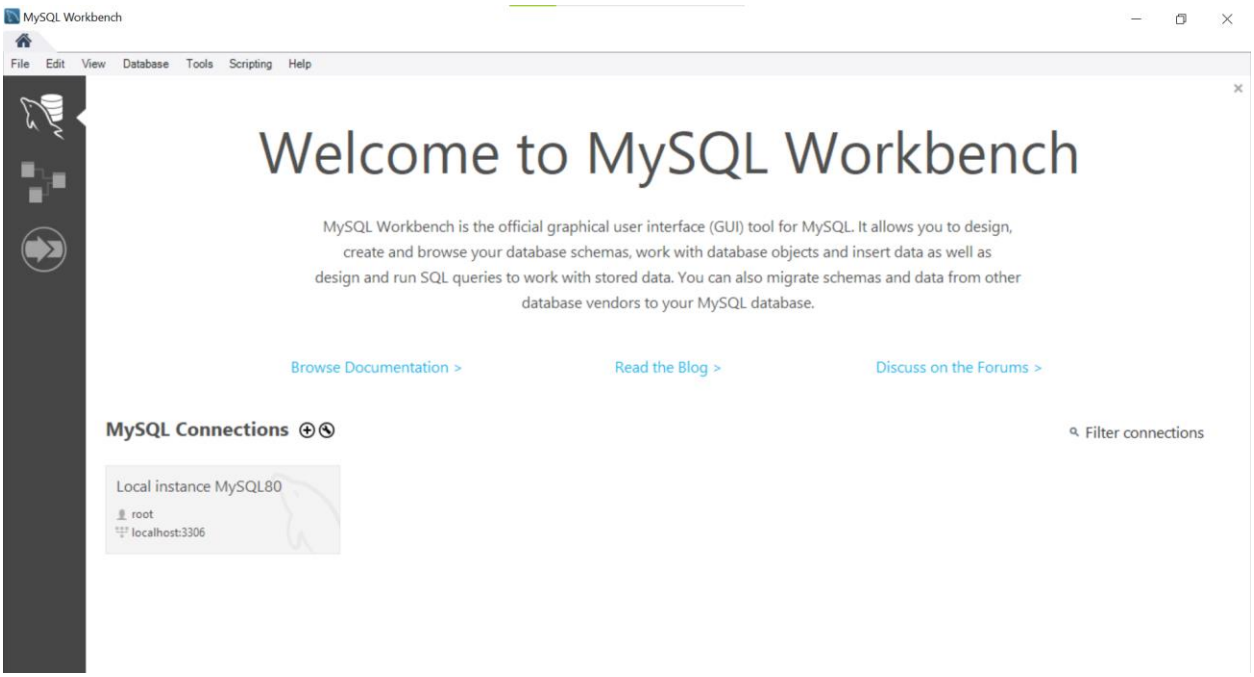
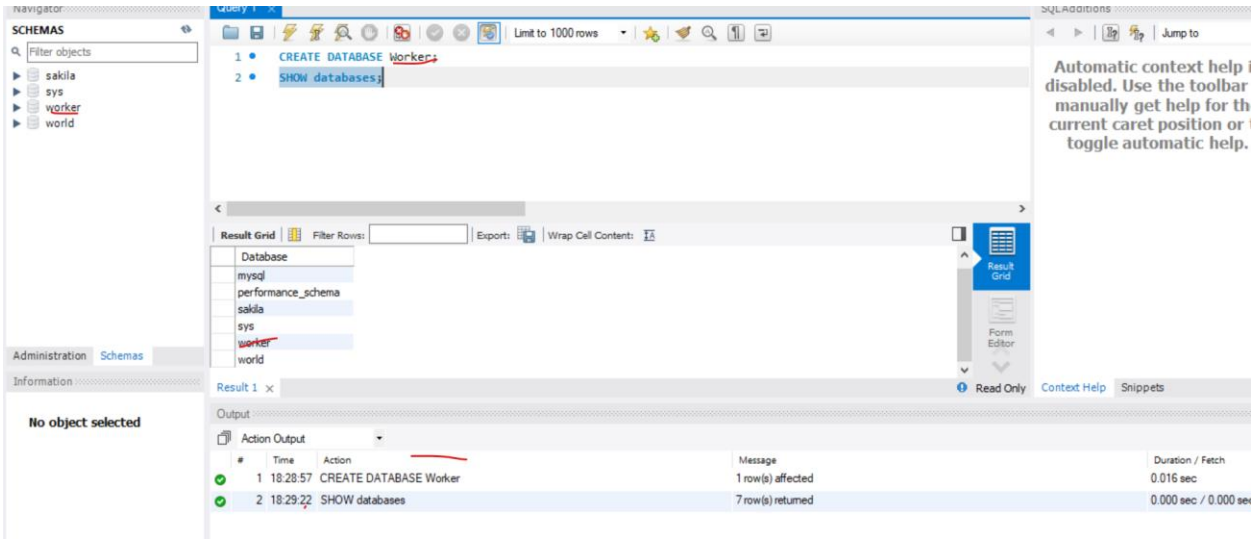
INFO 531: DATA WAREHOUSING IN THE CLOUD

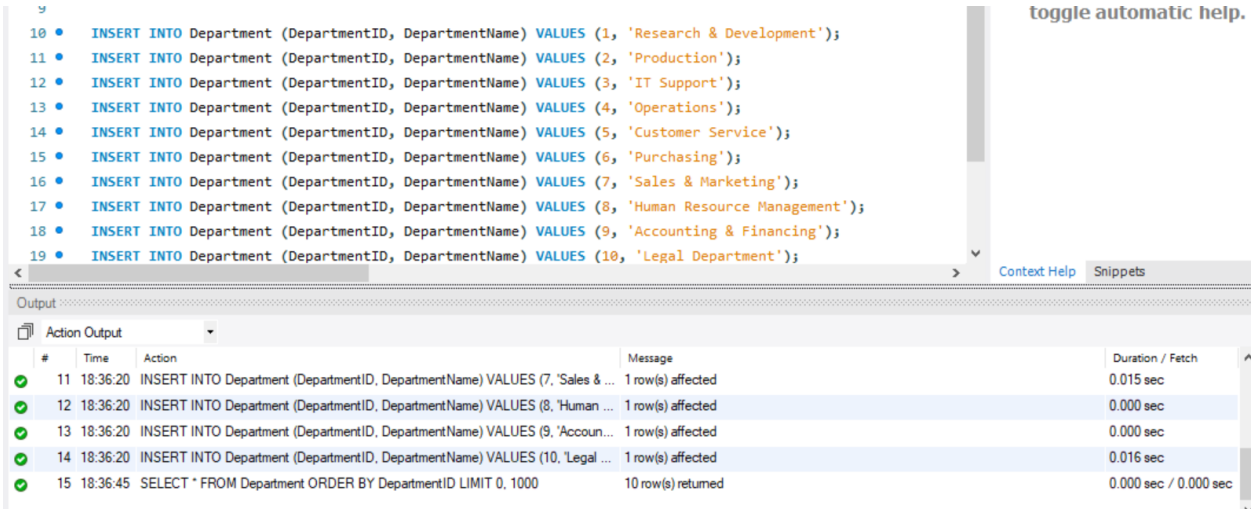
ASSIGNMENT – 3

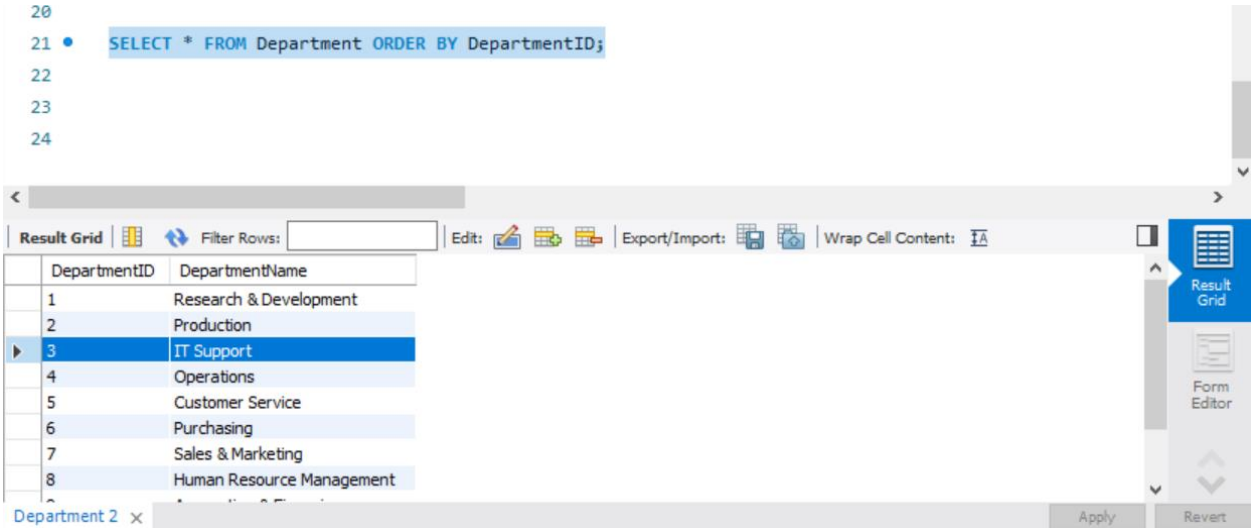
Q1. Show the screenshot of a successful installation of MySQL Software and MySQL Workbench with the latest version on your machine. Show the screenshot of the database "Worker"created.





Q2. . Create the Department table in the Worker database (table must be based on Physical Model Provided in the Assignment folder). (a) Columns, Primary Key (PK), Data Type & length, and NULL/NOT NULL need to be implemented, as provided in the Physical Model. (b) Show the table definition (DDL) that you implemented. (c) Insert the complete set of data provided in the Excel file (uploaded in the Assignment folder) and show the insert statements used. (d) Retrieve the data from the Department table by using the SELECT * statement and order by PK column(s). Show the output. Make sure you show the print screen of the complete set of the rows and columns. The rows must be ordered by PK column(s).





Q3. Create the Employee table in the Worker database (table must be based on Physical Model Provided in the Assignment folder). (a) Columns, Primary Key (PK), Data Type and length, and NULL/NOT NULL need to be implemented, as provided in the Physical Model. (b) Show the table definition (DDL) that you implemented (not in a graphical view). (c) Insert the complete set of data provided in the Excel file (uploaded in the Assignment folder) and show the insert statements used. (d) Retrieve the data from the Employee table by using the SELECT * statement and order by PK column(s). Show the output. Make sure you show the print screen of the complete set of the rows and columns. The rows must be ordered by PK column(s).

```sql
/* 3rd Question*/

CREATE TABLE Employee (
    EmployeeID INT PRIMARY KEY,
    FirstName VARCHAR(255) NOT NULL,
    LastName VARCHAR(255) NOT NULL,
    HireDate DATE,
    DepartmentID INT,
    FOREIGN KEY (DepartmentID) REFERENCES Department(DepartmentID)
);
```

```sql
43      (4, 'Nola', 'Davis', '2016-03-23', 4);
44
45      INSERT INTO Employee (EmployeeID, FirstName, LastName, HireDate, DepartmentID) VALUES
46      (5, 'Kathy', 'Cooper', '2011-11-18', 5),
47      (6, 'Tom', 'Harper', '2010-04-11', 6);
48
49      SELECT * FROM Employee ORDER BY EmployeeID;
50
51
```

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

EmployeeID	FirstName	LastName	HireDate	DepartmentID
1	Andy	Wong	2001-01-15	1
2	John	Wilson	2017-03-19	2
3	Vivek	Pandey	2003-11-15	3
4	Nola	Davis	2016-03-23	4
5	Kathy	Cooper	2011-11-18	5
6	Tom	Harper	2010-04-11	6

Q4. Create the Equipment table in the Worker database (table must be based on Physical Model Provided in the Assignment folder). (a) Columns, Primary Key (PK), Data Type & length, and NULL/NOT NULL need to be implemented, as provided in the Physical Model. (b) Show the table definition (DDL) that you implemented. (c) Insert the complete set of data provided in the Excel file (uploaded in the Assignment folder) and show the insert statements used. (d) Retrieve the data from the Equipment table by using the SELECT * statement and order by PK column(s). Show the output. Make sure you show the print screen of the complete set of the rows and columns. The rows must be ordered by PK column(s).

```sql
/* 4th Question*/

CREATE TABLE Equipment (
    EquipmentID INT PRIMARY KEY,
    EquipmentName VARCHAR(255) NOT NULL,
    EquipmentCostAmount DECIMAL(10, 2) NOT NULL
);
```

```sql
71
72  SELECT * FROM Equipment ORDER BY EquipmentID;
73
74  /* 5th Question*/
75  CREATE TABLE EmployeeEquipment (
76      EmployeeID INT,
```

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

EquipmentID	EquipmentName	EquipmentCostAmount
1	NoteBook Computers	1000.00
2	Headsets	150.00
3	Computer Moniters	5000.00
4	Multi-Function printer	100.00
5	Projector	850.00
6	Servers	1600.00
7	Internet Modem	300.00

uipment 7 × Apply

Q5. Create the EmployeeEquipment table in the Worker database (table must be based on Physical Model Provided in the Assignment folder). (a) Columns, Primary Key (PK), Data Type & length, and NULL/NOT NULL need to be implemented, as provided in the Physical Model. (b) Show the table definition (DDL) that you implemented. (c) Insert the complete set of data provided in the Excel file (uploaded in the Assignment folder) and show the insert statements used. (d) Retrieve the data from the EmployeeEquipment table by using the SELECT * statement and order by PK column(s). Show the output. Make sure you show the print screen of the complete set of the rows and columns. The rows must be ordered by PK column(s).

```
75  CREATE TABLE EmployeeEquipment (
76      EmployeeID INT,
77      EquipmentID INT,
78      PRIMARY KEY (EmployeeID, EquipmentID),
79      FOREIGN KEY (EmployeeID) REFERENCES Employee(EmployeeID),
80      FOREIGN KEY (EquipmentID) REFERENCES Equipment(EquipmentID)
81  );
```

```
82
83  INSERT INTO EmployeeEquipment (EmployeeID, EquipmentID) VALUES
84  (1,1),
85  (2,1),
86  (2,3),
87  (3,1),
88  (3,2),
89  (3,3),
90  (4,1),
91  (4,2),
92  (5,1),
```

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

EmployeeID	EquipmentID
1	1
2	1
2	3
3	1
3	2
3	3

Q6. Create the Training table in the Worker database (table must be based on Physical Model Provided in the Assignment folder). (a) Columns, Primary Key (PK), Data Type & length, and NULL/NOT NULL need to be implemented, as provided in the Physical Model. (b) Show the table definition (DDL) that you implemented. (c) Insert the complete set of data provided in the Excel file (uploaded in the Assignment folder) and show the insert statements used. (d) Retrieve the data from the Training table by using the SELECT * statement and order by PK column(s). Show the output. Make sure you show the print screen of the complete set of the rows and columns. The rows must be ordered by PK column(s).

```sql
CREATE TABLE Training (
    TrainingID INT PRIMARY KEY,
    TrainingName VARCHAR(255) NOT NULL
);

INSERT INTO Training (TrainingID, TrainingName) VALUES
(1, 'Covid-19 Awareness and Protection Training'),
(2, 'Code of Conduct Training'),
(3, 'Saftey Training'),
(4, 'Intro to python'),
(5, 'Machine Learning'),
(6, 'Microsoft Certifications'),
(7, 'Security and Privacy'),
(8, 'Product Knowledge'),
```

```sql
120
121  SELECT * FROM Training ORDER BY TrainingID;
122
123
```

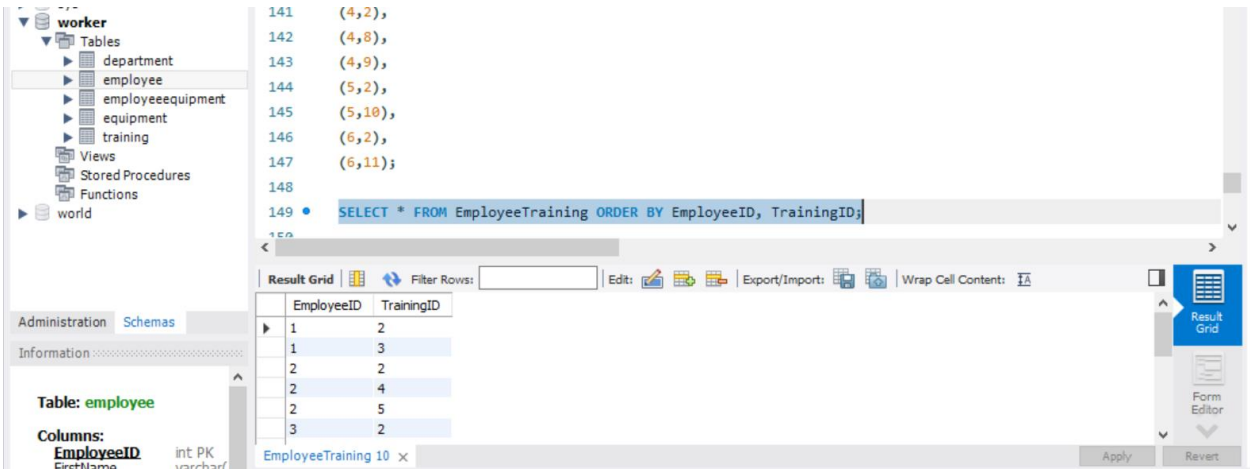
Result Grid | Filter Rows: | Edit: | Export/Import: | Wrap Cell Content:

TrainingID	TrainingName
1	Covid-19 Awareness and Protection Training
2	Code of Conduct Training
3	Saftey Training
4	Intro to python
5	Machine Learning
6	Microsoft Certifications

Training 9 | Apply | Revert

Q7. Create the EmployeeTraining table in the Worker database (table must be based on Physical Model Provided in the Assignment folder). (a) Columns, Primary Key (PK), Data Type & length, and NULL/NOT NULL need to be implemented, as provided in the Physical Model. (b) Show the table definition (DDL) that you implemented. (c) Insert the complete set of data provided in the Excel file (uploaded in the Assignment folder) and show the insert statements used. (d) Retrieve the data from the EmployeeTraining table by using the SELECT * statement and order by PK column(s). Show the output. Make sure you show the print screen of the complete set of the rows and columns. The rows must be ordered by PK column(s).

```
5  CREATE TABLE EmployeeTraining (
6      EmployeeID INT,
7      TrainingID INT,
8      PRIMARY KEY (EmployeeID, TrainingID),
9      FOREIGN KEY (EmployeeID) REFERENCES Employee(EmployeeID),
0      FOREIGN KEY (TrainingID) REFERENCES Training(TrainingID)
1  );
2  INSERT INTO EmployeeTraining (EmployeeID, TrainingID) VALUES
3  (1, 2),
4  (1,3),
5  (2, 2),
6  (2,4),
7  (2,5),
8  (3,2),
9  (3,6),
0  (3,7),
1  (4,2),
2  (4,8),
3  (4,9),
4  (5,2),
```



Q8. Create the Trainer table in the Worker database (table must be based on Physical Model Provided in the Assignment folder). (a) Columns, Primary Key (PK), Data Type & length, and NULL/NOT NULL need to be implemented, as provided in the Physical Model. (b) Show the table definition (DDL) that you implemented. (c) Insert the complete set of data provided in the Excel file (uploaded in the Assignment folder) and show the insert statements used. (d) Retrieve the data from the Trainer table by using the SELECT * statement and order by PK column(s). Show the output. Make sure you show the print screen of the complete set of the rows and columns. The rows must be ordered by PK column(s).

```
CREATE TABLE Trainer (
    TrainerID INT PRIMARY KEY,
    TrainerFirstName VARCHAR(255) NOT NULL,
    TrainerLastName VARCHAR(255)
);

INSERT INTO Trainer (TrainerID, TrainerFirstName, TrainerLastName) VALUES
(1, 'James', 'Smith'),
(2, 'Jhonny ', 'Khor'),
(3, 'Michael', 'Smith'),
(4, 'Maria ', 'Gracia'),
(5, 'John', NULL),
(6, 'Paul ', 'Dietel'),
(7, 'Mike', 'Taylor'),
(8, ' Avinash', 'Nalvani'),
(9, 'Robert','Smith'),
(10, 'Maria ','Rodriguez'),
```

```
177
178 • SELECT * FROM Trainer ORDER BY TrainerID;
```

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

TrainerID	TrainerFirstName	TrainerLastName
1	James	Smith
2	Jhonny	Khor
3	Michael	Smith
4	Maria	Gracia
5	John	NULL
6	Paul	Dietel

Q9. Retrieve the data from the Trainer table by using the SELECT * statement with filter, WHERE TrainerLastName IS NULL. Show the output. Make sure you show the print screen of the complete set of the rows and columns. The rows must be ordered by PK column(s).

SELECT * FROM Trainer WHERE TrainerLastName IS NULL ORDER BY TrainerID;

```
179
180     /* 9th Question*/
181
182 •   SELECT * FROM Trainer WHERE TrainerLastName IS NULL ORDER BY TrainerID;
183
184
185
186
187
```

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

TrainerID	TrainerFirstName	TrainerLastName
5	John	NULL
14	Vanesa	NULL
15	Jordan	NULL
NULL	NULL	NULL

Result Grid | Form Editor

Trainer 12 | Apply | Revert

Q10. By using the SHOW tables statements, show the list of tables you have created in the Worker database. Show the screenshot of the execution of the above statements and results. Make sure you show the print screen of the complete set of the rows and columns. The rows must be ordered by PK column(s).

```
185
186 •  SHOW tables;
187
188
189
```

Result Grid | Filter Rows: | Export: | Wrap Cell Content:

Tables_in_worker
department
employee
employeeequipment
employeetraining
equipment
trainer
training

Q11. Write a single-row subquery to display EmployeeID, FirstName, LastName, and HireDate of employees hired after employee Vivek Pandey. Sort the results by EmployeeID. Make sure you show the print screen of the complete set of the rows, and columns as specified.

```
188     /* 11th Question*/
189
190 •   SELECT EmployeeID, FirstName, LastName, HireDate
191     FROM Employee
192     WHERE HireDate > (SELECT HireDate FROM Employee WHERE FirstName = 'Vivek' AND LastName = 'Pandey'
193     ORDER BY EmployeeID;
194
```

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

EmployeeID	FirstName	LastName	HireDate
2	John	Wilson	2017-03-19
4	Nola	Davis	2016-03-23
5	Kathy	Cooper	2011-11-18
6	Tom	Harper	2010-04-11
NULL	NULL	NULL	NULL

Employee 14 ×

Q12. Write a query to display FirstName, LastName, and TrainingName for employee Tom Harper. Sort the results by TrainingName. Make sure you show the print screen of the complete set of the rows, and columns as specified.

```
SELECT E.FirstName, E.LastName, T.TrainingName

FROM Employee E

INNER JOIN EmployeeTraining ET ON E.EmployeeID = ET.EmployeeID

INNER JOIN Training T ON ET.TrainingID = T.TrainingID

WHERE E.FirstName = 'Tom' AND E.LastName = 'Harper'

ORDER BY T.TrainingName;
```

```
194
195     /* 12th Question*/
196
197 •   SELECT E.FirstName, E.LastName, T.TrainingName
198     FROM Employee E
199     INNER JOIN EmployeeTraining ET ON E.EmployeeID = ET.EmployeeID
200     INNER JOIN Training T ON ET.TrainingID = T.TrainingID
201     WHERE E.FirstName = 'Tom' AND E.LastName = 'Harper'
202     ORDER BY T.TrainingName;
203
```

Result Grid | Filter Rows: | Export: | Wrap Cell Content:

FirstName	LastName	TrainingName
Tom	Harper	Code of Conduct Training
Tom	Harper	Travel and Expense Management

Q13. Write a query to display the complete list of Trainings, and trainers (first and last name) available for each training. Sort the output by TrainingName and Trainers' first and last name. Make sure you show the print screen of the complete set of the rows, and columns as specified.

```
SELECT T.TrainingName, TR.TrainerFirstName, TR.TrainerLastName

FROM Training T

INNER JOIN EmployeeTraining ET ON T.TrainingID = ET.TrainingID

INNER JOIN Trainer TR ON ET.EmployeeID = TR.TrainerID

ORDER BY T.TrainingName, TR.TrainerFirstName, TR.TrainerLastName;
```

```
206  SELECT T.TrainingName, TR.TrainerFirstName, TR.TrainerLastName
207  FROM Training T
208  INNER JOIN EmployeeTraining ET ON T.TrainingID = ET.TrainingID
209  INNER JOIN Trainer TR ON ET.EmployeeID = TR.TrainerID
210  ORDER BY T.TrainingName, TR.TrainerFirstName, TR.TrainerLastName;
```

Result Grid | Filter Rows: | Export: | Wrap Cell Content:

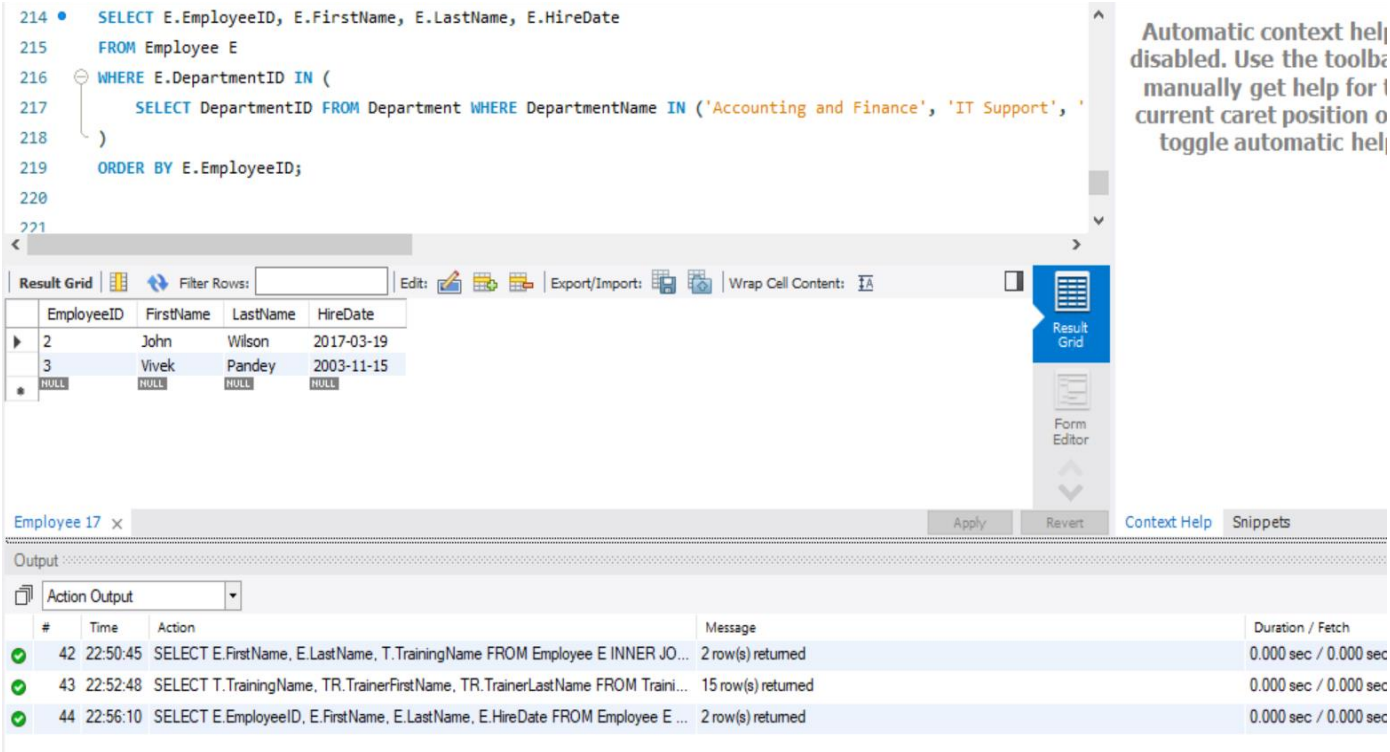
TrainingName	TrainerFirstName	TrainerLastName
Code of Conduct Training	James	Smith
Code of Conduct Training	Jhonny	Khor
Code of Conduct Training	John	NULL
Code of Conduct Training	Maria	Gracia
Code of Conduct Training	Michael	Smith
Code of Conduct Training	Paul	Dietel
Employee Relations	John	NULL
Intro to python	Jhonny	Khor
Machine Learning	Jhonny	Khor
Microsoft Certifications	Michael	Smith
Product Knowledge	Maria	Gracia
Saftey Training	James	Smith
Sales Skills	Maria	Gracia
Security and Privacy	Michael	Smith
Travel and Expense Man...	Paul	Dietel

Result Grid | Form Editor | Field Types | Query Stats

Result 16 | Read Only

Q14. Write a multiple-row subquery to display EmployeeID, FirstName, LastName, and HireDate of employees who work for the following departments: Accounting and Finance, IT Support, and Production. Sort the results by EmployeeID. Make sure you show the print screen of the complete set of the rows, and columns as specified.

```
SELECT E.EmployeeID, E.FirstName, E.LastName, E.HireDate

FROM Employee E

WHERE E.DepartmentID IN (

   SELECT DepartmentID FROM Department WHERE DepartmentName IN ('Accounting and Finance', 'IT Support', 'Production')

)

ORDER BY E.EmployeeID;
```



Q15. Write a query to display the EmployeeID, FirstName, LastName, EquipmentName, and EquipmentCostAmount for one of the employees. Sort the results by EmployeeID. Make sure you show the print screen of the complete set of the rows, and columns as specified.

```
SELECT E.EmployeeID, E.FirstName, E.LastName, EQ.EquipmentName, EQ.EquipmentCostAmount

FROM Employee E

INNER JOIN EmployeeEquipment EE ON E.EmployeeID = EE.EmployeeID

INNER JOIN Equipment EQ ON EE.EquipmentID = EQ.EquipmentID

ORDER BY E.EmployeeID;
```

```
221     /* 15th Question*/
222 •   SELECT E.EmployeeID, E.FirstName, E.LastName, EQ.EquipmentName, EQ.EquipmentCostAmount
223     FROM Employee E
224     INNER JOIN EmployeeEquipment EE ON E.EmployeeID = EE.EmployeeID
225     INNER JOIN Equipment EQ ON EE.EquipmentID = EQ.EquipmentID
226     ORDER BY E.EmployeeID;
227
```

Result Grid | Filter Rows: | Export: | Wrap Cell Content:

EmployeeID	FirstName	LastName	EquipmentName	EquipmentCostAmount
1	Andy	Wong	NoteBook Computers	1000.00
2	John	Wilson	NoteBook Computers	1000.00
2	John	Wilson	Computer Moniters	5000.00
3	Vivek	Pandey	NoteBook Computers	1000.00
3	Vivek	Pandey	Headsets	150.00
3	Vivek	Pandey	Computer Moniters	5000.00
4	Nola	Davis	NoteBook Computers	1000.00
4	Nola	Davis	Headsets	150.00
5	Kathy	Cooper	NoteBook Computers	1000.00
5	Kathy	Cooper	Headsets	150.00
5	Kathy	Cooper	Computer Moniters	5000.00
6	Tom	Harper	NoteBook Computers	1000.00
6	Tom	Harper	Computer Moniters	5000.00

Result 18

Q16. Write a query to display the TrainingID, TrainingName, TrainerID, TrainerFirstName, and TrainerLastName with the trainers who did not provide their last name. Sort the results by TrainingID and TrainerID. Make sure you show the print screen of the complete set of the rows, and columns as specified.

```
SELECT T.TrainingID, T.TrainingName, TR.TrainerID, TR.TrainerFirstName, TR.TrainerLastName

FROM Training T

INNER JOIN Trainer TR ON T.TrainingID = TR.TrainerID

WHERE TR.TrainerLastName IS NULL

ORDER BY T.TrainingID, TR.TrainerID;
```

```
228     /* 16th Question*/
229
230 •   SELECT T.TrainingID, T.TrainingName, TR.TrainerID, TR.TrainerFirstName, TR.TrainerLastName
231     FROM Training T
232     INNER JOIN Trainer TR ON T.TrainingID = TR.TrainerID
233     WHERE TR.TrainerLastName IS NULL
234     ORDER BY T.TrainingID, TR.TrainerID;
```

Result Grid | Filter Rows: | Export: | Wrap Cell Content:

TrainingID	TrainingName	TrainerID	TrainerFirstName	TrainerLastName
5	Machine Learning	5	John	NULL

Q17. Write a query to display the distinct list of equipments used by the current employees. Sort the output by EquipmentName. Make sure you show the print screen of the complete set of the rows, and columns as specified.

```
SELECT DISTINCT EQ.EquipmentName

FROM Equipment EQ

INNER JOIN EmployeeEquipment EE ON EQ.EquipmentID = EE.EquipmentID

ORDER BY EQ.EquipmentName;
```

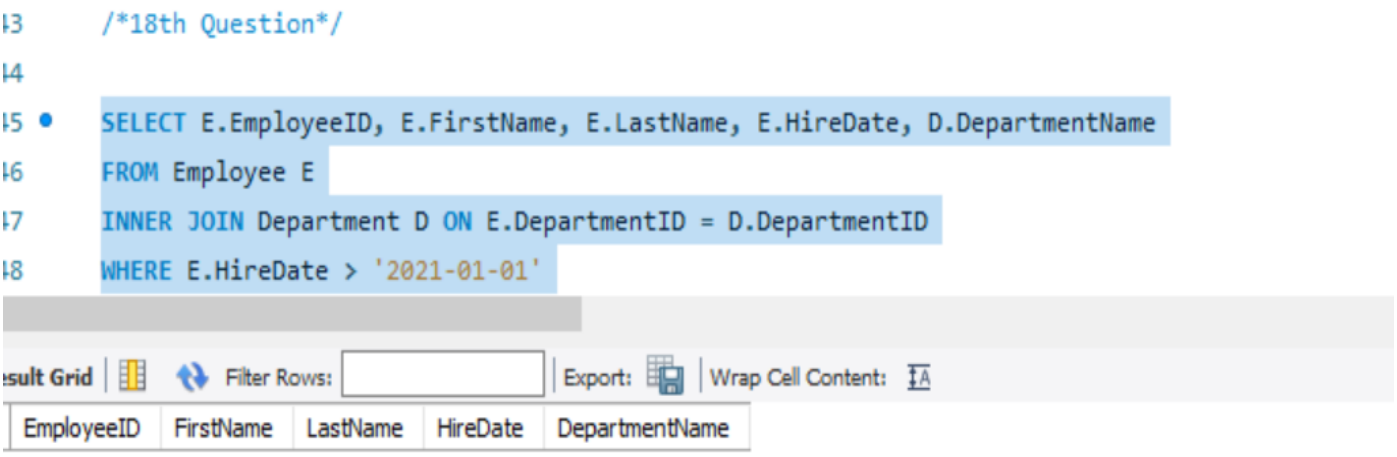
```
237
238 •  SELECT DISTINCT EQ.EquipmentName
239    FROM Equipment EQ
240    INNER JOIN EmployeeEquipment EE ON EQ.EquipmentID = EE.EquipmentID
241    ORDER BY EQ.EquipmentName;
```

Result Grid | Filter Rows: | Export: | Wrap Cell Content:

EquipmentName
Computer Moniters
Headsets
NoteBook Computers

Q18. Write a query to display the FirstName, LastName, TrainingName, and trainer(s) (with first and last name in two separate columns) for one of the employees. Sort the results by TrainingName and TrainerFirstName. Make sure you show the print screen of the complete set of the rows, and columns as specified.

```
SELECT E.EmployeeID, E.FirstName, E.LastName, E.HireDate, D.DepartmentName

FROM Employee E

INNER JOIN Department D ON E.DepartmentID = D.DepartmentID

WHERE E.HireDate > '2021-01-01'

ORDER BY E.EmployeeID;
```



Q19. Write a query to display the EmployeeID, FirstName, LastName, DepartmentID, DepartmentName, EquipmentID, EquipmentName for all employees. Sort the results by EmployeeID, DepartmentID, and EquipmentID. Make sure you show the print screen of the complete set of the rows, and columns as specified.

```
SELECT T.TrainingName, TR.TrainerFirstName, TR.TrainerLastName

FROM Training T

INNER JOIN EmployeeTraining ET ON T.TrainingID = ET.TrainingID

INNER JOIN Trainer TR ON ET.EmployeeID = TR.TrainerID

ORDER BY T.TrainingName, TR.TrainerFirstName, TR.TrainerLastName;
```

```
253
254 •  SELECT T.TrainingName, TR.TrainerFirstName, TR.TrainerLastName
255    FROM Training T
256    INNER JOIN EmployeeTraining ET ON T.TrainingID = ET.TrainingID
257    INNER JOIN Trainer TR ON ET.EmployeeID = TR.TrainerID
258    ORDER BY T.TrainingName, TR.TrainerFirstName, TR.TrainerLastName;
```

Result Grid | Filter Rows: | Export: | Wrap Cell Content:

TrainingName	TrainerFirstName	TrainerLastName
Code of Conduct Training	James	Smith
Code of Conduct Training	Jhonny	Khor
Code of Conduct Training	John	NULL
Code of Conduct Training	Maria	Gracia
Code of Conduct Training	Michael	Smith
Code of Conduct Training	Paul	Dietel
Employee Relations	John	NULL
Intro to python	Jhonny	Khor
Machine Learning	Jhonny	Khor
Microsoft Certifications	Michael	Smith
Product Knowledge	Maria	Gracia
Saftey Training	James	Smith
Sales Skills	Maria	Gracia
Security and Privacy	Michael	Smith
Travel and Expense Man...	Paul	Dietel

Result 22 ×

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Q20. Write a query to display the EmployeeID, FirstName, LastName, DepartmentID, DepartmentName, TrainingID, TrainingName for all employees. Sort the results by EmployeeID, DepartmentID, and TrainingID. Make sure you show the print screen of the complete set of the rows, and columns as specified.

```
SELECT E.EmployeeID, E.FirstName, E.LastName, EQ.EquipmentName, EQ.EquipmentCostAmount

FROM Employee E

INNER JOIN EmployeeEquipment EE ON E.EmployeeID = EE.EmployeeID

INNER JOIN Equipment EQ ON EE.EquipmentID = EQ.EquipmentID

ORDER BY E.EmployeeID;
```