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SQL Query SYNTAX

Instruction:

a. Please use the DBeaver application and the DBeaver Sample Database (SQLite) to do the task on the questions in PART I.

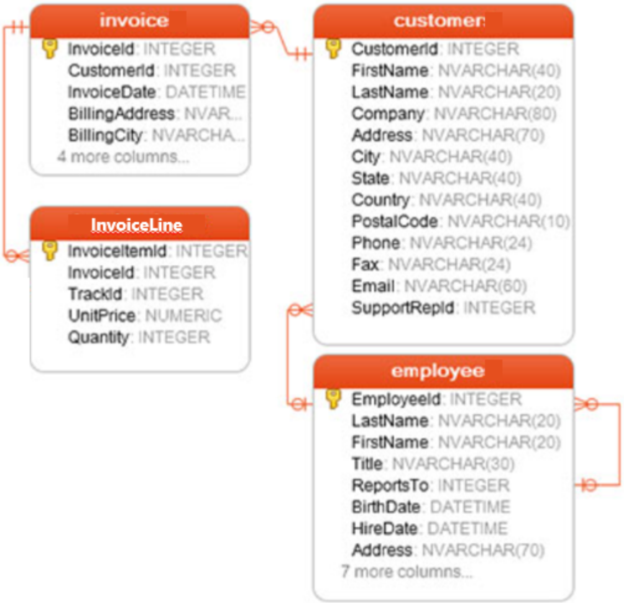
b. Please attach the screenshots to answer the questions. Example:

Question : Show all songs (tracks) contained in the database.

Answer:

```sql
SELECT * FROM track;
```

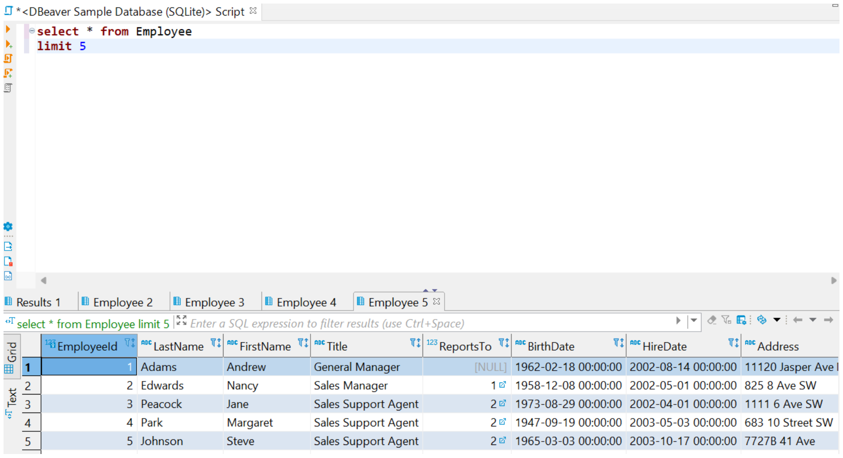
Here are the details of the tables that will be used:



Questions:

1. Show all columns of the first five rows in the employee table (employees)

   Answer:



*<DBeaver Sample Database (SQLite)> Script

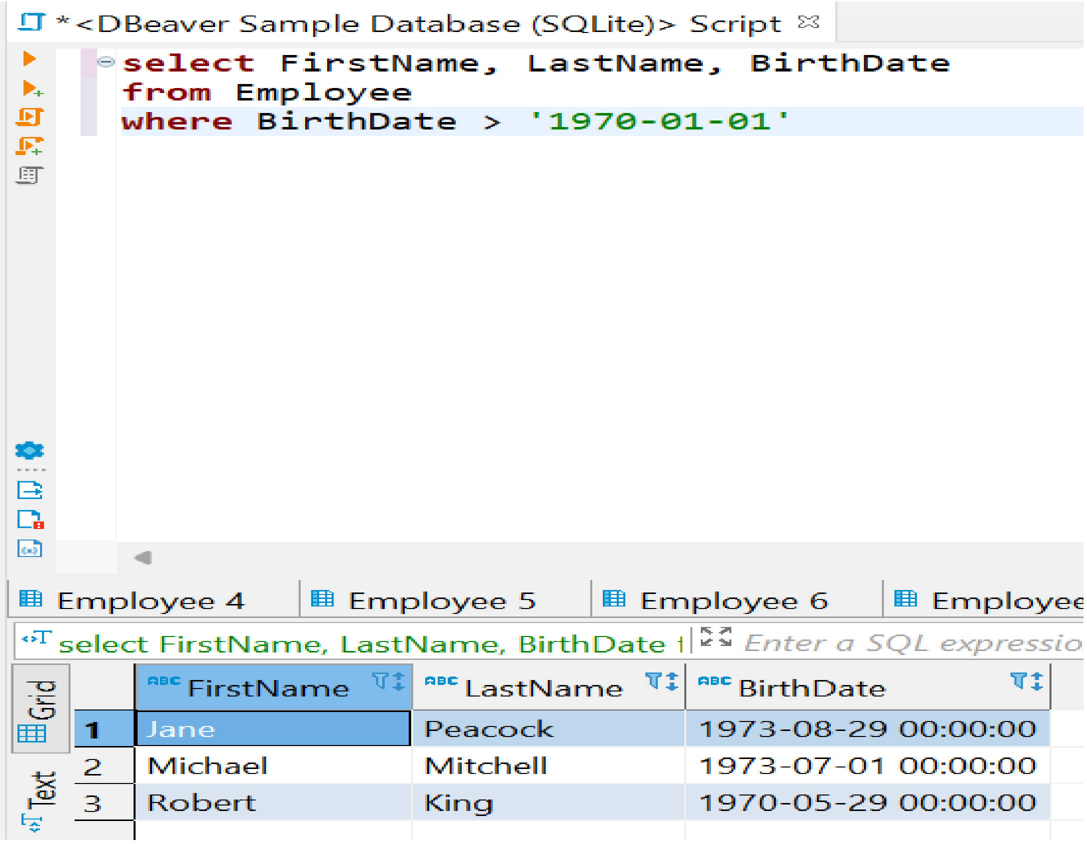
```
select * from Employee
limit 5
```

select * from Employee limit 5

	EmployeeId	LastName	FirstName	Title	ReportsTo	BirthDate	HireDate	Address
1	1	Adams	Andrew	General Manager	[NULL]	1962-02-18 00:00:00	2002-08-14 00:00:00	11120 Jasper Ave
2	2	Edwards	Nancy	Sales Manager	1	1958-12-08 00:00:00	2002-05-01 00:00:00	825 8 Ave SW
3	3	Peacock	Jane	Sales Support Agent	2	1973-08-29 00:00:00	2002-04-01 00:00:00	1111 6 Ave SW
4	4	Park	Margaret	Sales Support Agent	2	1947-09-19 00:00:00	2003-05-03 00:00:00	683 10 Street SW
5	5	Johnson	Steve	Sales Support Agent	2	1965-03-03 00:00:00	2003-10-17 00:00:00	7727B 41 Ave

2. Show the first name, last name, and date of birth of employees (employees) who were born after 1970-01-01.

   Answer:



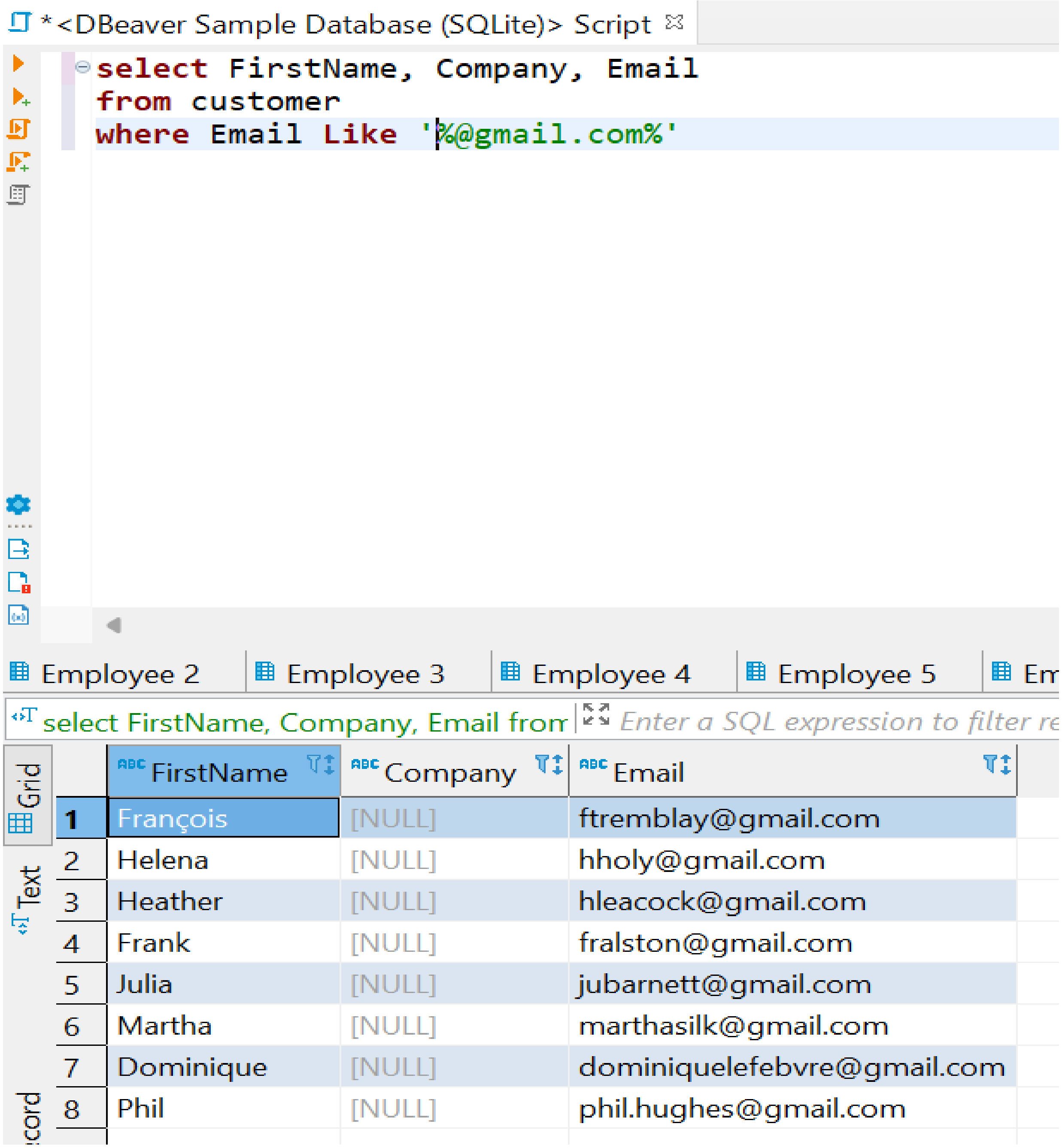
*<DBeaver Sample Database (SQLite)> Script

```
select FirstName, LastName, BirthDate
from Employee
where BirthDate > '1970-01-01'
```

select FirstName, LastName, BirthDate f

	FirstName	LastName	BirthDate
1	Jane	Peacock	1973-08-29 00:00:00
2	Michael	Mitchell	1973-07-01 00:00:00
3	Robert	King	1970-05-29 00:00:00

3. Show first name, company, and email of customers (customers) who use gmail. (Hint: email ends with '@gmail.com').
   Answer:



*<DBeaver Sample Database (SQLite)> Script
Employee 2
Employee 3
Employee 4
Employee 5
Em
Enter a SQL expression to filter re
Grid
Text
cord

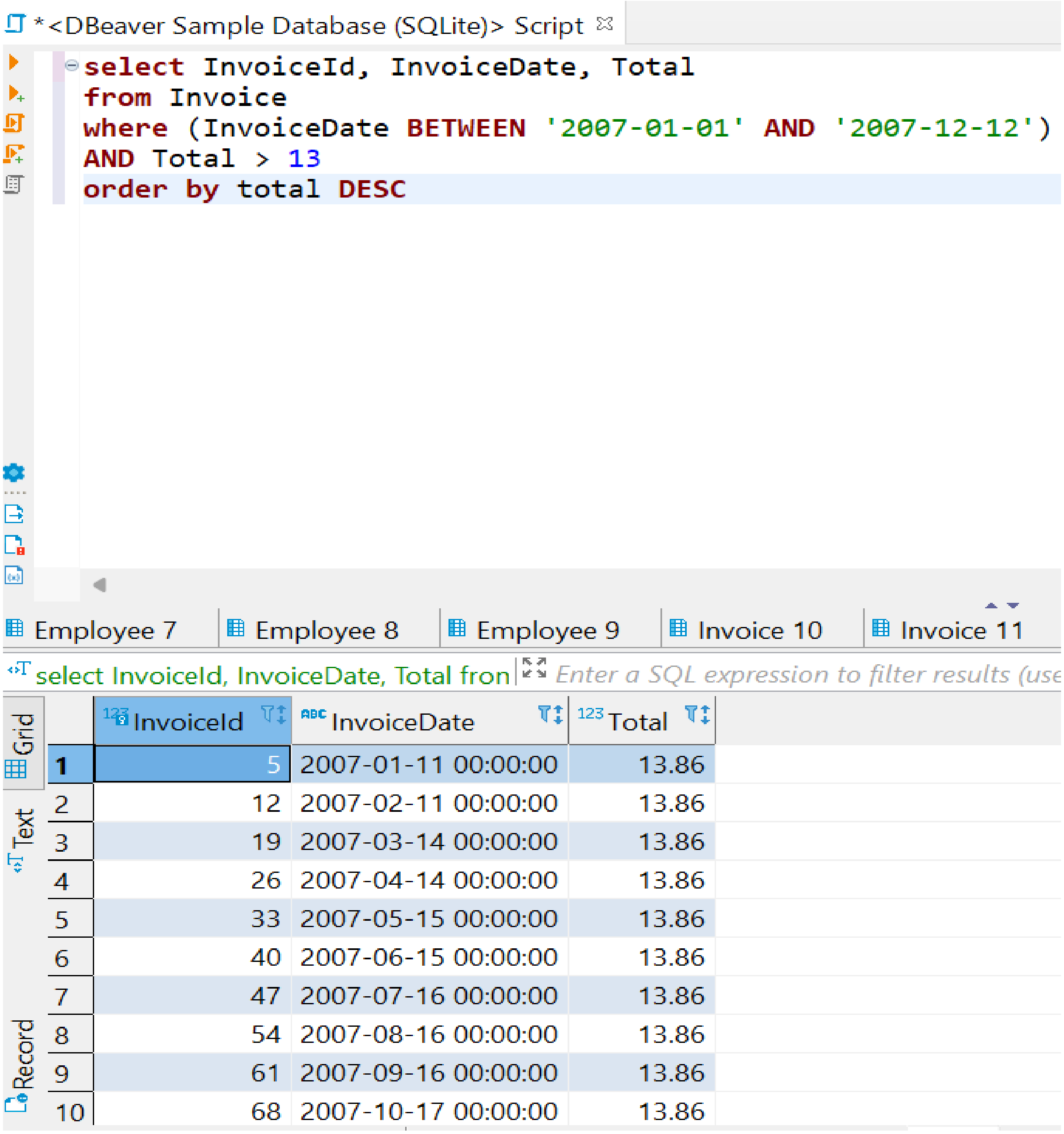
```
select FirstName, Company, Email
from customer
where Email Like '%@gmail.com%'
```

select FirstName, Company, Email from

	FirstName	Company	Email
1	François	[NULL]	ftremblay@gmail.com
2	Helena	[NULL]	hholy@gmail.com
3	Heather	[NULL]	hleacock@gmail.com
4	Frank	[NULL]	fralston@gmail.com
5	Julia	[NULL]	jubarnett@gmail.com
6	Martha	[NULL]	marthasilk@gmail.com
7	Dominique	[NULL]	dominiquelefebvre@gmail.com
8	Phil	[NULL]	phil.hughes@gmail.com

4. Show invoice ID, invoice date, and total invoices created between January 1, 2007 and December 12, 2007 and have a total of more than 13. Show the total in order of the largest to the smallest.

Answer:



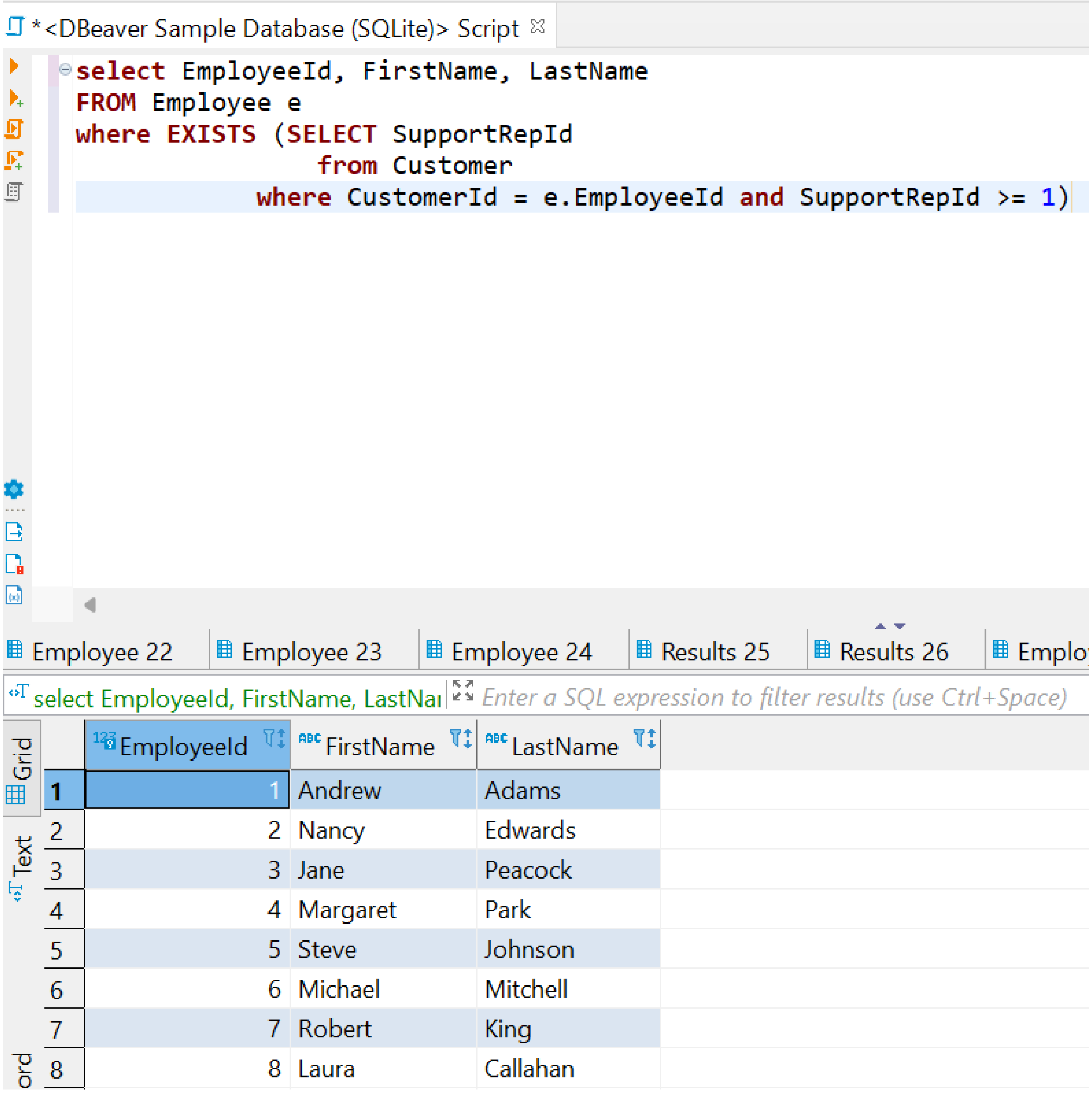
*<DBeaver Sample Database (SQLite)> Script
Employee 7
Employee 8
Employee 9
Invoice 10
Invoice 11
Grid
Text
Record
Enter a SQL expression to filter results (use

```sql
select InvoiceId, InvoiceDate, Total
from Invoice
where (InvoiceDate BETWEEN '2007-01-01' AND '2007-12-12')
AND Total > 13
order by total DESC
```

select InvoiceId, InvoiceDate, Total fron

	InvoiceId	InvoiceDate	Total
1	5	2007-01-11 00:00:00	13.86
2	12	2007-02-11 00:00:00	13.86
3	19	2007-03-14 00:00:00	13.86
4	26	2007-04-14 00:00:00	13.86
5	33	2007-05-15 00:00:00	13.86
6	40	2007-06-15 00:00:00	13.86
7	47	2007-07-16 00:00:00	13.86
8	54	2007-08-16 00:00:00	13.86
9	61	2007-09-16 00:00:00	13.86
10	68	2007-10-17 00:00:00	13.86

5. Show ID, first name, and last name of employees who handle at least one customer (SupportRepId) (Hint: Use EXISTS).
   Jawaban:



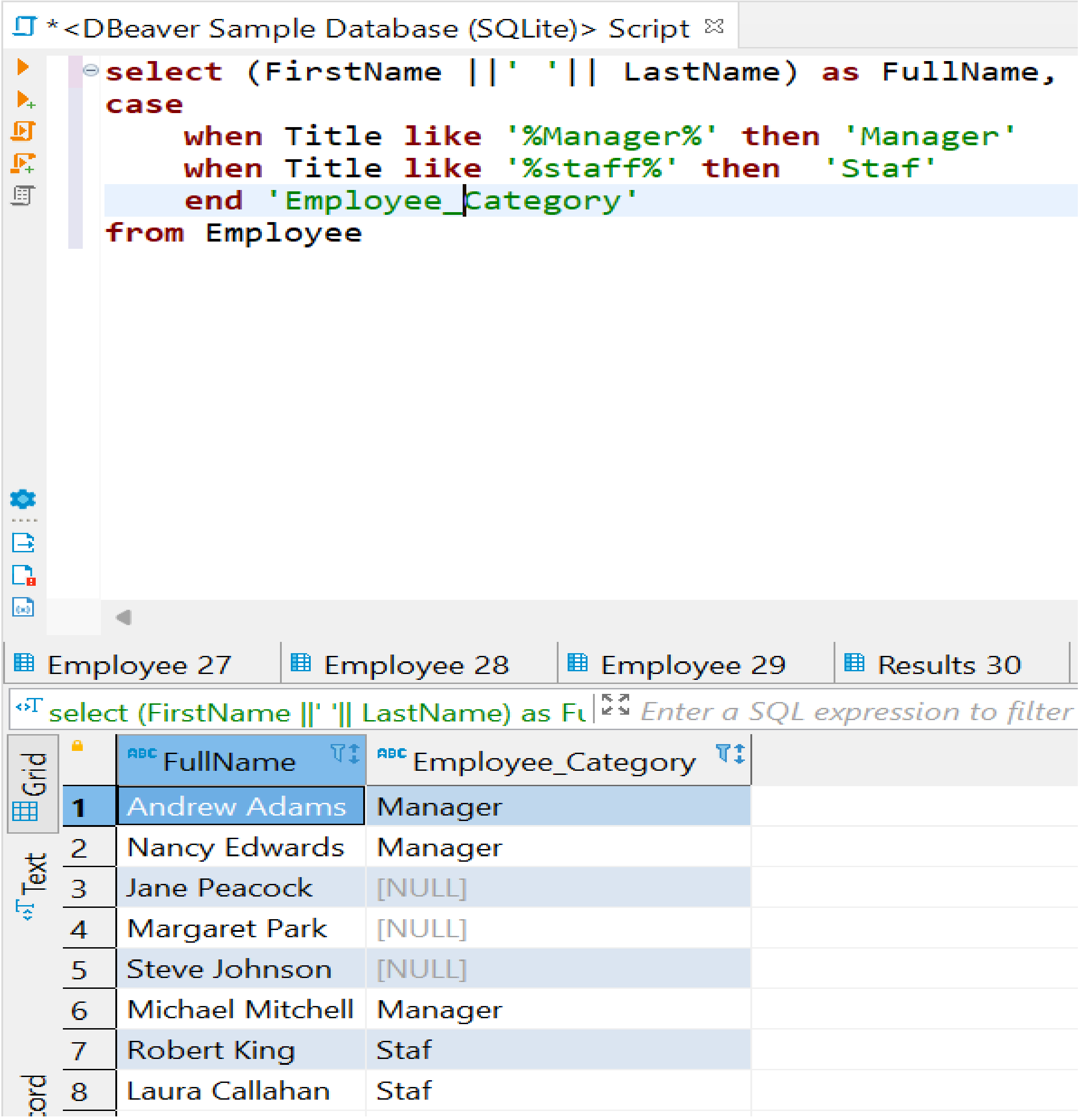
```
select EmployeeId, FirstName, LastName
FROM Employee e
where EXISTS (SELECT SupportRepId
                from Customer
            where CustomerId = e.EmployeeId and SupportRepId >= 1)
```

select EmployeeId, FirstName, LastNa | Enter a SQL expression to filter results (use Ctrl+Space)

	EmployeeId	FirstName	LastName
1	1	Andrew	Adams
2	2	Nancy	Edwards
3	3	Jane	Peacock
4	4	Margaret	Park
5	5	Steve	Johnson
6	6	Michael	Mitchell
7	7	Robert	King
8	8	Laura	Callahan

6. Show full name and employee category with the following conditions.
    - Full name: Combine of first name and last name separated by a space, example: First Name = 'Andrew', Last Name = 'Adams' → Full Name = 'Andrew Adams'
    - The employee category consists of two categories, namely 'staff' and 'manager'. All employees who have titles containing the word 'manager' will enter the 'manager' category, while the others will enter the 'staff' category.

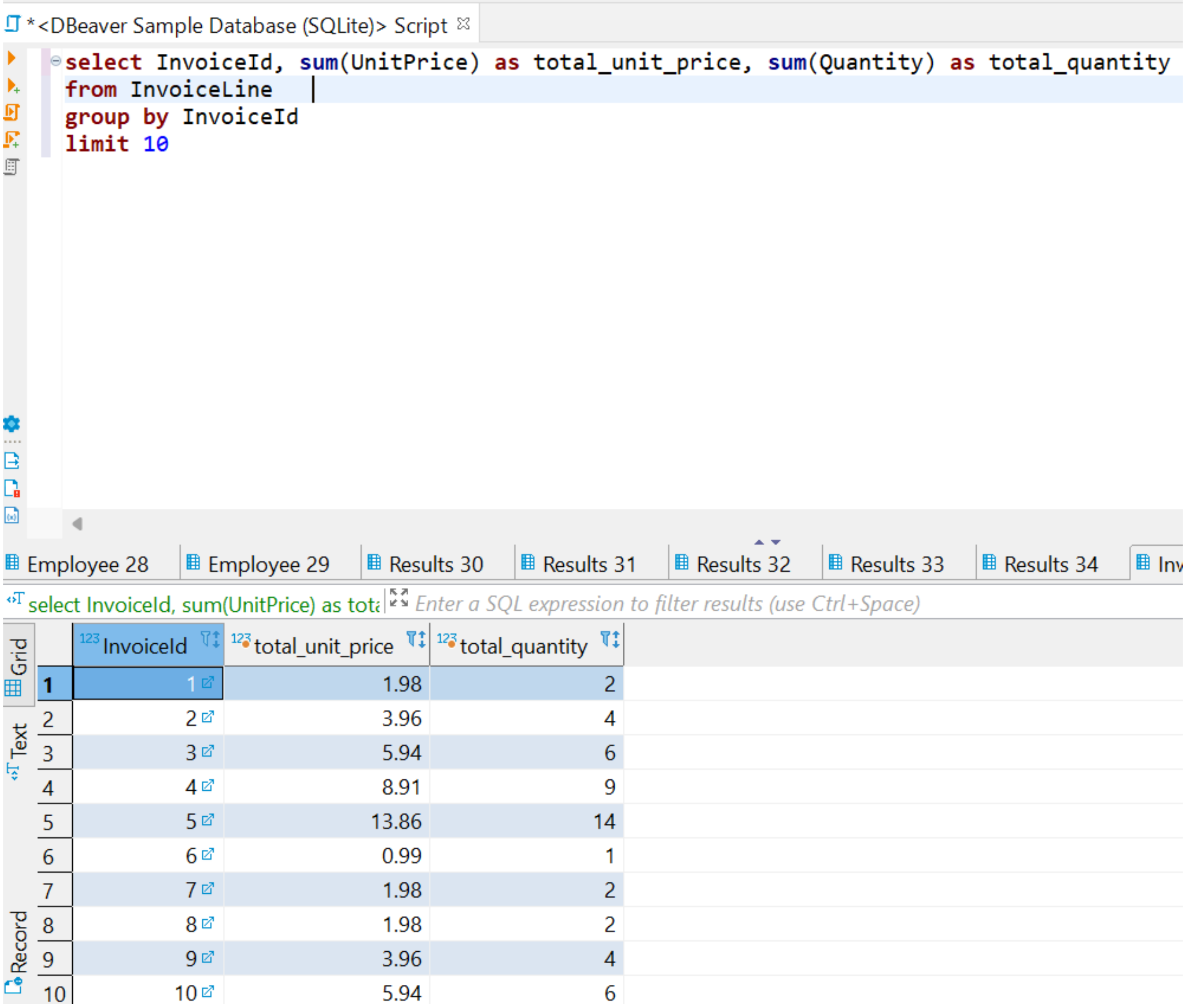
Answer:


*<DBeaver Sample Database (SQLite)> Script
Employee 27
Employee 28
Employee 29
Results 30
select (FirstName ||' '|| LastName) as Fu
Enter a SQL expression to filter
Grid
Text
ord

```
select (FirstName ||' '|| LastName) as FullName,
case
    when Title like '%Manager%' then 'Manager'
    when Title like '%staff%' then  'Staf'
    end 'Employee_Category'
from Employee
```

	FullName	Employee_Category
1	Andrew Adams	Manager
2	Nancy Edwards	Manager
3	Jane Peacock	[NULL]
4	Margaret Park	[NULL]
5	Steve Johnson	[NULL]
6	Michael Mitchell	Manager
7	Robert King	Staf
8	Laura Callahan	Staf

7. Show Invoice ID, total unit price, and total quantity for each invoice from the InvoiceLine table without JOIN with other tables.
Answer:



*<DBeaver Sample Database (SQLite)> Script
Employee 28
Employee 29
Results 30
Results 31
Results 32
Results 33
Results 34
Inv
Enter a SQL expression to filter results (use Ctrl+Space)
Grid
Text
Record

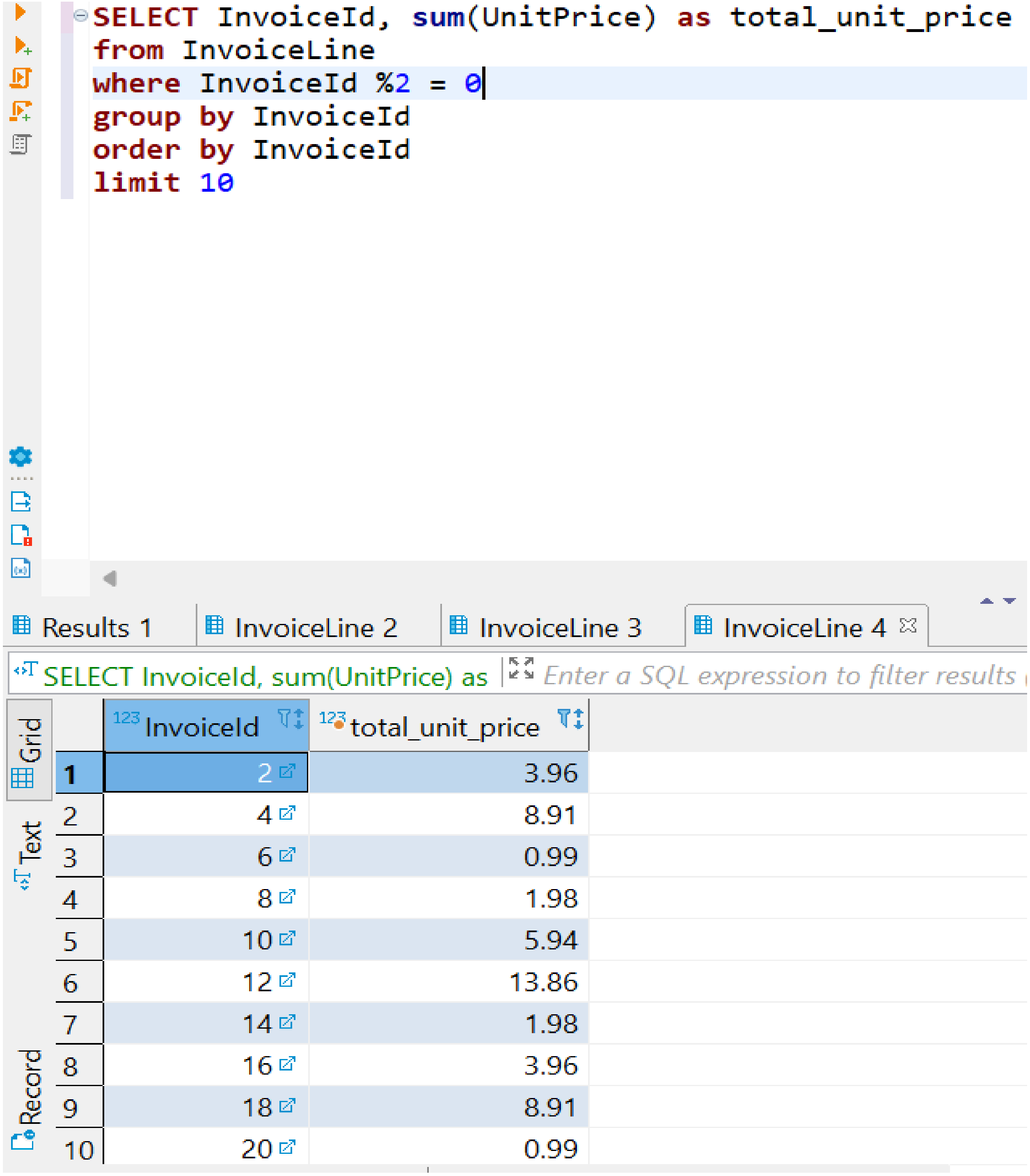
```sql
select InvoiceId, sum(UnitPrice) as total_unit_price, sum(Quantity) as total_quantity
from InvoiceLine
group by InvoiceId
limit 10
```

select InvoiceId, sum(UnitPrice) as tot

	InvoiceId	total_unit_price	total_quantity
1	1	1.98	2
2	2	3.96	4
3	3	5.94	6
4	4	8.91	9
5	5	13.86	14
6	6	0.99	1
7	7	1.98	2
8	8	1.98	2
9	9	3.96	4
10	10	5.94	6

8. Show the Invoice ID and the total price that has an even ID, sorted from the smallest to the largest ID.

Answer:



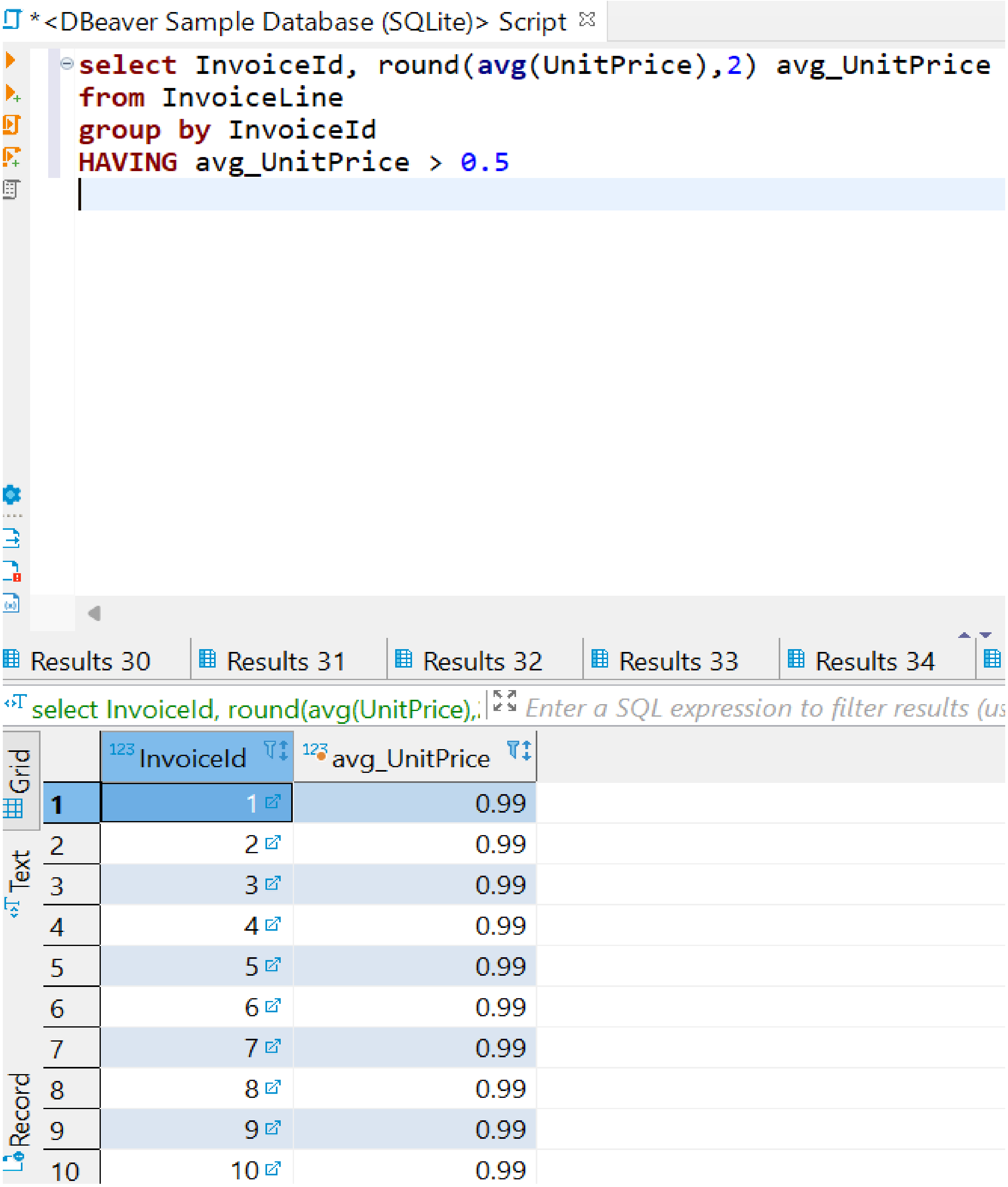
```
SELECT InvoiceId, sum(UnitPrice) as total_unit_price
from InvoiceLine
where InvoiceId %2 = 0
group by InvoiceId
order by InvoiceId
limit 10
```

Results 1
InvoiceLine 2
InvoiceLine 3
InvoiceLine 4
SELECT InvoiceId, sum(UnitPrice) as
Enter a SQL expression to filter results
Grid
Text
Record

	InvoiceId	total_unit_price
1	2	3.96
2	4	8.91
3	6	0.99
4	8	1.98
5	10	5.94
6	12	13.86
7	14	1.98
8	16	3.96
9	18	8.91
10	20	0.99

9. Show all invoices ID that have an average unit price of more than 0.5 (Hint: using HAVING).

Answer:



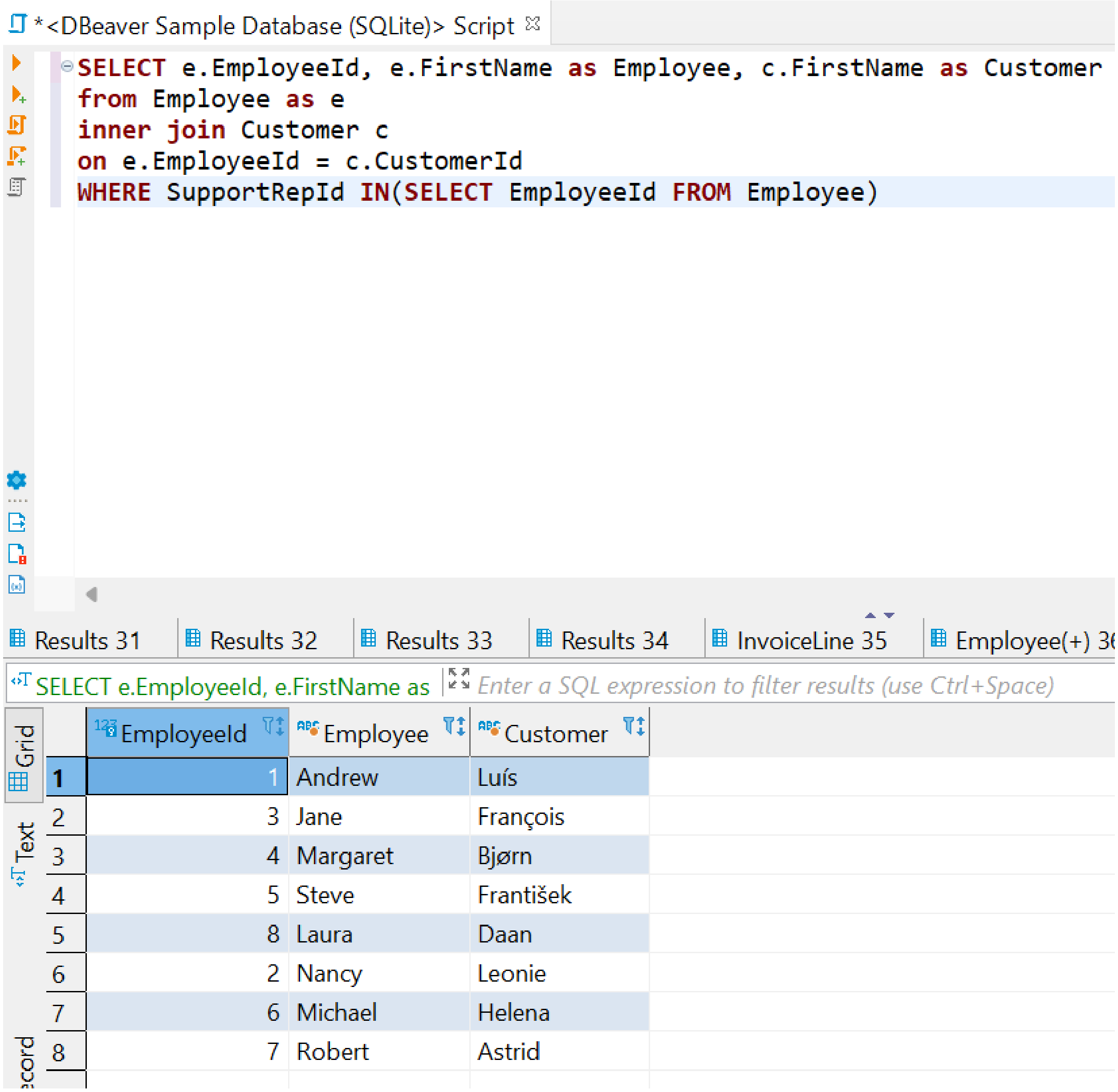
```
select InvoiceId, round(avg(UnitPrice),2) avg_UnitPrice
from InvoiceLine
group by InvoiceId
HAVING avg_UnitPrice > 0.5
```

Results 30
Results 31
Results 32
Results 33
Results 34
select InvoiceId, round(avg(UnitPrice),:
Enter a SQL expression to filter results (us
Grid
Text
Record

	InvoiceId	avg_UnitPrice
1	1	0.99
2	2	0.99
3	3	0.99
4	4	0.99
5	5	0.99
6	6	0.99
7	7	0.99
8	8	0.99
9	9	0.99
10	10	0.99

10. Show employee ID, employee first name, and customer first name that have been handled by the employee. Change the name of the column that is displayed if there are two columns with the same name.

Answer:



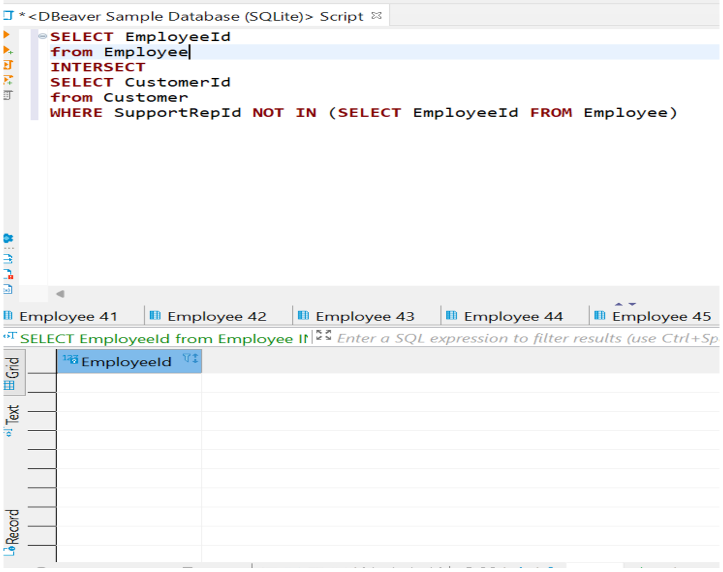
```
SELECT e.EmployeeId, e.FirstName as Employee, c.FirstName as Customer
from Employee as e
inner join Customer c
on e.EmployeeId = c.CustomerId
WHERE SupportRepId IN(SELECT EmployeeId FROM Employee)
```

SELECT e.EmployeeId, e.FirstName as | Enter a SQL expression to filter results (use Ctrl+Space)

	EmployeeId	Employee	Customer
1	1	Andrew	Luís
2	3	Jane	François
3	4	Margaret	Bjørn
4	5	Steve	František
5	8	Laura	Daan
6	2	Nancy	Leonie
7	6	Michael	Helena
8	7	Robert	Astrid

11. Show employee ID that never handles customers. (Use one of the INTERSECT/EXCEPT/UNION operators).

Answer:

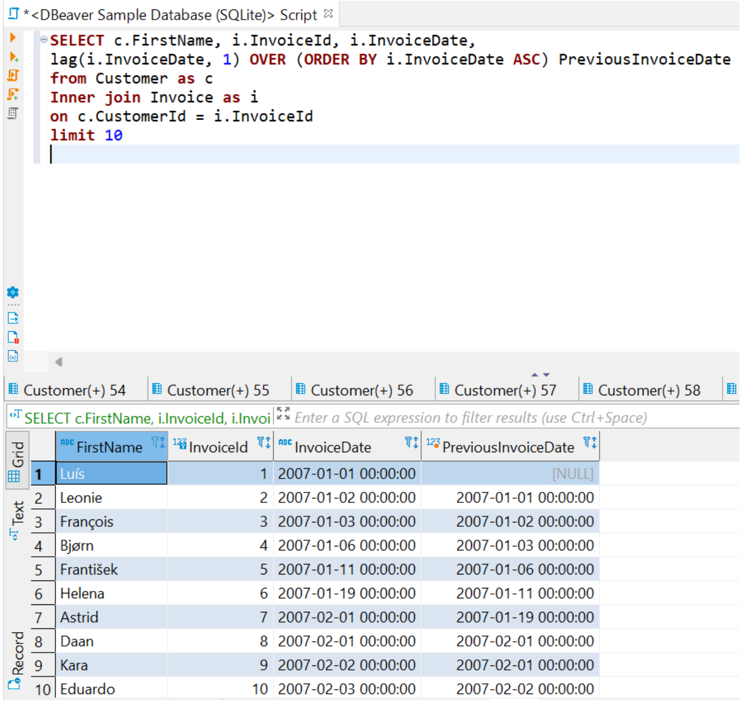

*<DBeaver Sample Database (SQLite)> Script
Employee 41
Employee 42
Employee 43
Employee 44
Employee 45
SELECT EmployeeId from Employee II
Enter a SQL expression to filter results (use Ctrl+Sp
Grid
Text
Record

```sql
SELECT EmployeeId
from Employee
INTERSECT
SELECT CustomerId
from Customer
WHERE SupportRepId NOT IN (SELECT EmployeeId FROM Employee)
```

EmployeeId

12. Show customer first name, invoice ID, invoice date, and previous invoice date.

Answer:

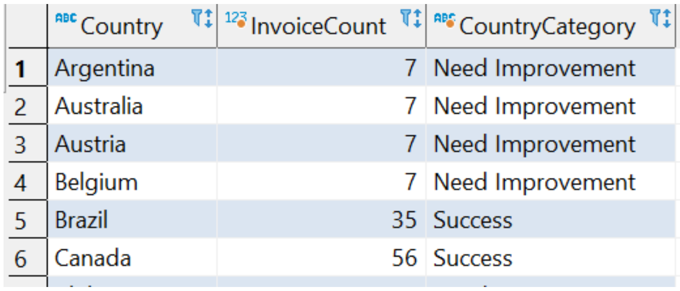

*<DBeaver Sample Database (SQLite)> Script
Customer(+) 54
Customer(+) 55
Customer(+) 56
Customer(+) 57
Customer(+) 58
SELECT c.FirstName, i.InvoiceId, i.Invoi
Enter a SQL expression to filter results (use Ctrl+Space)
Grid
Text
Record

```sql
SELECT c.FirstName, i.InvoiceId, i.InvoiceDate,
lag(i.InvoiceDate, 1) OVER (ORDER BY i.InvoiceDate ASC) PreviousInvoiceDate
from Customer as c
Inner join Invoice as i
on c.CustomerId = i.InvoiceId
limit 10
```

	FirstName	InvoiceId	InvoiceDate	PreviousInvoiceDate
1	Luís	1	2007-01-01 00:00:00	[NULL]
2	Leonie	2	2007-01-02 00:00:00	2007-01-01 00:00:00
3	François	3	2007-01-03 00:00:00	2007-01-02 00:00:00
4	Bjørn	4	2007-01-06 00:00:00	2007-01-03 00:00:00
5	František	5	2007-01-11 00:00:00	2007-01-06 00:00:00
6	Helena	6	2007-01-19 00:00:00	2007-01-11 00:00:00
7	Astrid	7	2007-02-01 00:00:00	2007-01-19 00:00:00
8	Daan	8	2007-02-01 00:00:00	2007-02-01 00:00:00
9	Kara	9	2007-02-02 00:00:00	2007-02-01 00:00:00
10	Eduardo	10	2007-02-03 00:00:00	2007-02-02 00:00:00

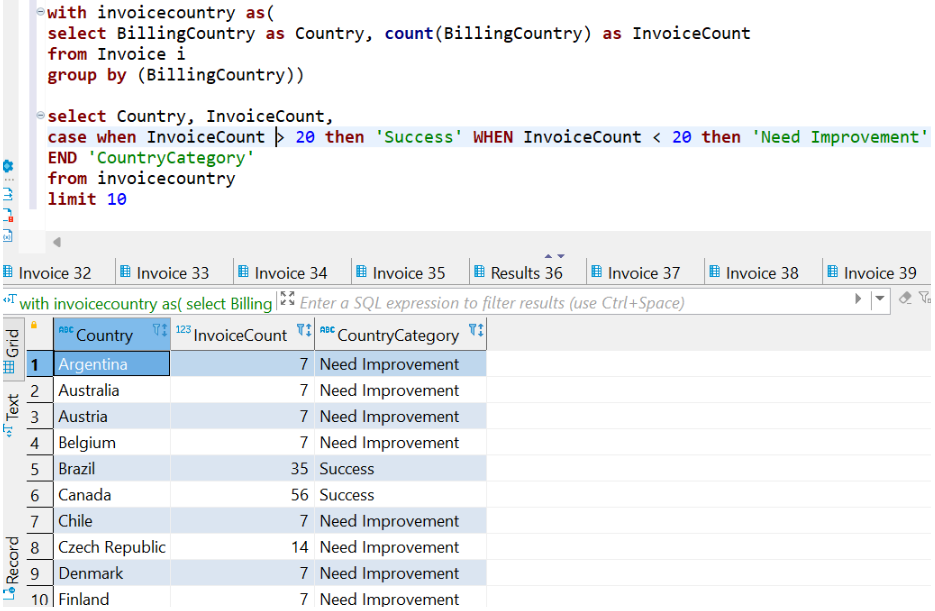
13. Show the customer's country origin, number of invoices, and country category based on the following criteria → 'Success' if the country has more than 20 invoices, and 'Need Improvement' if the country has less than 20 invoices. (Can use Subquery or CTE).

Expected output (partial data, not whole data):



	Country	InvoiceCount	CountryCategory
1	Argentina	7	Need Improvement
2	Australia	7	Need Improvement
3	Austria	7	Need Improvement
4	Belgium	7	Need Improvement
5	Brazil	35	Success
6	Canada	56	Success

Answer:



```sql
with invoicecountry as(
select BillingCountry as Country, count(BillingCountry) as InvoiceCount
from Invoice i
group by (BillingCountry))

select Country, InvoiceCount,
case when InvoiceCount > 20 then 'Success' WHEN InvoiceCount < 20 then 'Need Improvement'
END 'CountryCategory'
from invoicecountry
limit 10
```

Invoice 32
Invoice 33
Invoice 34
Invoice 35
Results 36
Invoice 37
Invoice 38
Invoice 39
with invoicecountry as(select Billing
Enter a SQL expression to filter results (use Ctrl+Space)
Grid
Text
Record

	Country	InvoiceCount	CountryCategory
1	Argentina	7	Need Improvement
2	Australia	7	Need Improvement
3	Austria	7	Need Improvement
4	Belgium	7	Need Improvement
5	Brazil	35	Success
6	Canada	56	Success
7	Chile	7	Need Improvement
8	Czech Republic	14	Need Improvement
9	Denmark	7	Need Improvement
10	Finland	7	Need Improvement