

Q1

```
D:\demo_db#HouJunchen>sqlite3 northwind.db
SQLite version 3.36.0 2021-06-18 18:36:39
Enter ".help" for usage hints.
sqlite> select CategoryName from Category order by CategoryName;
Beverages
Condiments
Confections
Dairy Products
Grains/Cereals
Meat/Poultry
Produce
Seafood
```

Q2

```
D:\demo_db#HouJunchen>sqlite3 northwind.db
SQLite version 3.36.0 2021-06-18 18:36:39
Enter ".help" for usage hints.
sqlite> select distinct ShipName, substr(ShipName,1,instr(ShipName,'-')-1)
...> from 'Order'
...> where ShipName like '%-%'
...> order by ShipName;
Bottom-Dollar Markets|Bottom
Chop-suey Chinese|Chop
GROSELLA-Restaurante|GROSELLA
HILARION-Abastos|HILARION
Hungry Owl All-Night Grocers|Hungry Owl All
LILA-Supermercado|LILA
LINO-Delicatesses|LINO
QUICK-Stop|QUICK
Save-a-lot Markets|Save
```

Q3

```
D:\demo_db#HouJunchen>sqlite3 northwind.db
SQLite version 3.36.0 2021-06-18 18:36:39
Enter ".help" for usage hints.
sqlite> select * from
...> (select id, ShipCountry, 'NorthAmerica' from 'Order' where id >= 15445 and ShipCountry in ('USA','Mexico','Canada'))
...> union
...> select id, ShipCountry, 'OtherPlace' from 'Order' where id >= 15445 and ShipCountry not in ('USA','Mexico','Canada'))
...> order by id limit 20;
15445 France|OtherPlace
15446 Italy|OtherPlace
15447 Portugal|OtherPlace
15448 Argentina|OtherPlace
15449 Portugal|OtherPlace
15450 Venezuela|OtherPlace
15451 Brazil|OtherPlace
15452 France|OtherPlace
15453 France|OtherPlace
15454 Canada|NorthAmerica
15455 USA|NorthAmerica
15456 France|OtherPlace
15457 Mexico|NorthAmerica
15458 USA|NorthAmerica
15459 Germany|OtherPlace
15460 Argentina|OtherPlace
15461 Austria|OtherPlace
15462 Austria|OtherPlace
15463 Finland|OtherPlace
15464 Brazil|OtherPlace
```

Q4

```
D:\demo_db#HouJunchen>sqlite3 northwind.db
SQLite version 3.36.0 2021-06-18 18:36:39
Enter ".help" for usage hints.
sqlite> select s1.CompanyName, round(a1*100.0/a2,2) as percentage
...> from (select CompanyName, count(*) as a1
...>         from Shipper, 'Order'
...>         where Shipvia = Shipper.id and ShippedDate > RequiredDate
...>         group by CompanyName) s1,
...>
...>         (select CompanyName, count(*) as a2
...>         from Shipper, 'Order'
...>         where Shipvia = Shipper.id
...>         group by CompanyName) s2
...> where s1.CompanyName = s2.CompanyName
...> order by percentage desc;
Federal Shipping|23.61
Speedy Express|23.46
United Package|23.44
```

Q5

```
D:\demo_db#HouJunchen>sqlite3 northwind.db
SQLite version 3.36.0 2021-06-18 18:36:39
Enter ".help" for usage hints.
sqlite> select CategoryName, kind, average, minimum, maximum, sums
...> from
...>     (select *
...>      from (select CategoryName, count(*) as kind, round(avg(UnitPrice),2) as average, min(UnitPrice) as minimum,
...>      max(UnitPrice) as maximum, sum(Product.UnitsOnOrder) as sums, Category.Id as id
...>      from Product, Category
...>      where Product.CategoryId = Category.Id
...>      group by Category.Id)
...>      where kind > 10)
...>
...>     union all
...>
...>     select *
...>     from (select CategoryName, count(*) as kind, round(avg(UnitPrice),2) as average, min(UnitPrice) as minimum,
...>     max(UnitPrice) as maximum, NULL as sums, Category.Id as id
...>     from Product, Category
...>     where Product.CategoryId = Category.Id
...>     group by Category.Id)
...>     where kind <= 10)
...> order by id;
Beverages|12|37.98|4.5|263.5|60
Condiments|12|23.06|10|43.9|170
Confections|13|25.16|9.2|81|180
Dairy Products|10|28.73|2.5|55|
Grains/Cereals|7|20.25|7|38|
Meat/Poultry|6|54.01|7.45|123.79|
Produce|5|32.37|10|53|
Seafood|12|20.68|6|62.5|120
```

Q6

```
D:\demo_db#HouJunchen>sqlite3 northwind.db
SQLite version 3.36.0 2021-06-18 18:36:39
Enter ".help" for usage hints.
sqlite> select ProductName, CompanyName, ContactName
...> from Product, OrderDetail, 'Order', Customer, (select min('Order'.OrderDate) as Date_, ProductId
...>         from Product, OrderDetail, 'Order', Customer
...>         where Product.Id = OrderDetail.ProductId and OrderDetail.OrderId = 'Order'.Id and 'Order'.CustomerId = C
...>         ustomer.Id and Product.Discontinued = 1
...>         group by ProductName) A
...> where Product.Id = OrderDetail.ProductId and OrderDetail.OrderId = 'Order'.Id and 'Order'.CustomerId = Customer.
...> Id
...>         and Product.Discontinued = 1 and A.ProductId = Product.Id and 'Order'.OrderDate = A.Date_
...> group by ProductName
...> order by ProductName;
Alice Mutton|Consolidated Holdings|Elizabeth Brown
Chef Anton's Gumbo Mix|Piccolo und mehr|Georg Pipps
Guaraná Fantástica|Piccolo und mehr|Georg Pipps
Mishi Kobe Niku|Old World Delicatessen|Rene Phillips
Perth Pasties|Piccolo und mehr|Georg Pipps
Rössle Sauerkraut|Piccolo und mehr|Georg Pipps
Singaporean Hokkien Fried Mee|Vins et alcools Chevalier|Paul Henriot
Thüringer Rostbratwurst|Piccolo und mehr|Georg Pipps
sqlite>
```

Q7

```
D:\demo_db#HouJunchen>sqlite3 northwind.db
SQLite version 3.36.0 2021-06-18 18:36:39
Enter ".help" for usage hints.
sqlite> select *, round(julianday(OrderByDate) - julianday(previousDate),2)
...> from (select id, OrderDate, lag(OrderDate, 1, OrderDate) over (order by OrderDate) as previousDate
...> from 'Order'
...> where 'Order'.CustomerId = 'BLONP' order by OrderDate limit 10)
...> order by OrderDate;
16766 2012-07-22 23:11:15|2012-07-22 23:11:15|0.0
10265 2012-07-25|2012-07-22 23:11:15|2.03
12594 2012-08-16 12:35:15|2012-07-25|22.52
20249 2012-08-16 16:52:23|2012-08-16 12:35:15|0.18
20882 2012-08-18 19:11:48|2012-08-16 16:52:23|2.1
18443 2012-08-28 05:34:03|2012-08-18 19:11:48|9.43
10297 2012-09-04|2012-08-28 05:34:03|6.77
11694 2012-09-17 00:27:14|2012-09-04|13.02
25613 2012-09-18 22:37:15|2012-09-17 00:27:14|1.92
17361 2012-09-19 12:13:21|2012-09-18 22:37:15|0.57
```

Q8

```
D:\demo_db#HouJunchen>sqlite3 northwind.db
SQLite version 3.36.0 2021-06-18 18:36:39
Enter ".help" for usage hints.
sqlite> select cpn, cstmrId, total_expenditure
...> from (
...> select ntile(4) over (order by total_expenditure) num, *
...> from(
...> select cstmrId, ifNULL(CompanyName, 'MISSING_NAME') as cpn, total_expenditure from(
...> (select 'Order'.CustomerId as cstmrId, round(sum(OrderDetail.UnitPrice * OrderDetail.Quantity), 2) as total_expenditure
...> from 'Order', OrderDetail
...> where 'Order'.Id = OrderDetail.OrderId
...> group by cstmrId)
...>
...> natural left outer join
...>
...> (select id as cstmrId, CompanyName
...> from Customer
...> group by cstmrId)
...> )
...> )
...> where num = 1;
MISSING_NAME|DUMO|1615.9
MISSING_NAME|OCEA|3460.2
MISSING_NAME|ANTO|7515.35
MISSING_NAME|QUEE|30226.1
Trail's Head Gourmet Provisioners|TRAH|3874502.02
Blondesddsl père et fils|BLONP|3879728.69
Around the Horn|AROUT|4395636.28
Hungry Owl All-Night Grocers|HUNGO|4431457.1
Bon app|BONAP|4485708.49
Bólido Comidas preparadas|BOLID|4520121.88
Galería del gastrónomo|GALED|4533089.9
FISSA Fabrica Inter. Salchichas S.A.|FISSA|4554591.02
Maison Dewey|MAISD|4555931.37
Cactus Comidas para llevar|CACTU|4559046.87
Spécialités du monde|SPECM|4571764.89
Magazzini Alimentari Riuniti|MAGAA|4572382.35
Toms Spezialit?ten|TOMSP|4628403.36
Split Rail Beer & Ale|SPLIR|4641383.53
Santé Gourmet|SANTG|4647668.15
Morgenstern Gesundkost|MORGK|4676234.2
White Clover Markets|WHITC|4681531.74
La corne d'abondance|LACOR|4724494.22
Victuailles en stock|VICTE|4726476.33
Lonesome Pine Restaurant|LONEP|4735780.66
```

## Q9

```
D:\demo_db#HouJunchen>sqlite3 northwind.db
SQLite version 3.36.0 2021-06-18 18:36:39
Enter ".help" for usage hints.
sqlite> select RegionDescription, FirstName, LastName, birthdt
...> from
...> (select FirstName, LastName, birthDate as birthdt
...> from Employee
...> where birthDate in
...> (select max(Employee.birthDate) as birthdt
...> from ((Region join Territory on Territory.RegionId = Region.Id) join EmployeeTerritory on EmployeeTerritory.TerritoryId = Territory.Id) join Employee on EmployeeTerritory.EmployeeId = Employee.Id
...> group by RegionId
...> )
...> )
...> natural join
...> (select max(Employee.birthDate) as birthdt, RegionDescription, RegionId
...> from ((Region join Territory on Territory.RegionId = Region.Id) join EmployeeTerritory on EmployeeTerritory.TerritoryId = Territory.Id) join Employee on EmployeeTerritory.EmployeeId = Employee.Id
...> group by RegionId
...> )
...> order by RegionId:
Eastern|Steven|Buchanan|1987-03-04
Western|Michael|Suyama|1995-07-02
Northern|Anne|Dodsworth|1998-01-27
Southern|Janet|Leverling|1995-08-30
```

## Q10

```
D:\demo_db#HouJunchen>sqlite3 northwind.db
SQLite version 3.36.0 2021-06-18 18:36:39
Enter ".help" for usage hints.
sqlite> with recursive cte(name_, length_, id_) as (
...> values(' ', 0, 0)
...> union
...> select c.name_ || ',' || k.ProductName as name_, length(c.name_), pid as id_ from (select ProductName, ProductId as pid
...> from Product, OrderDetail, 'Order', Customer
...> where Customer.Id = 'Order'.CustomerId and OrderDetail.OrderId = 'Order'.Id and OrderDetail.ProductId = Product.Id and CompanyName = 'Queen Cozinha' and OrderDate like '2014-12-25%'
...> order by Product.id
...> ) k, cte c
...> where k.pid > c.id_
...> )
...> select substr(name_, 2, length(name_) - 1) from cte where length(name_) in (select max(length(name_)) from cte)
Mishi Kobe Niku,NuNuCa Nu?-Nougat-Creme,Schoggi Schokolade,Mascarpone Fabioli,Sasquatch Ale,Boston Crab Meat,Manjimup Dried Apples,Longlife Tofu,Lakkalik??ri
```