

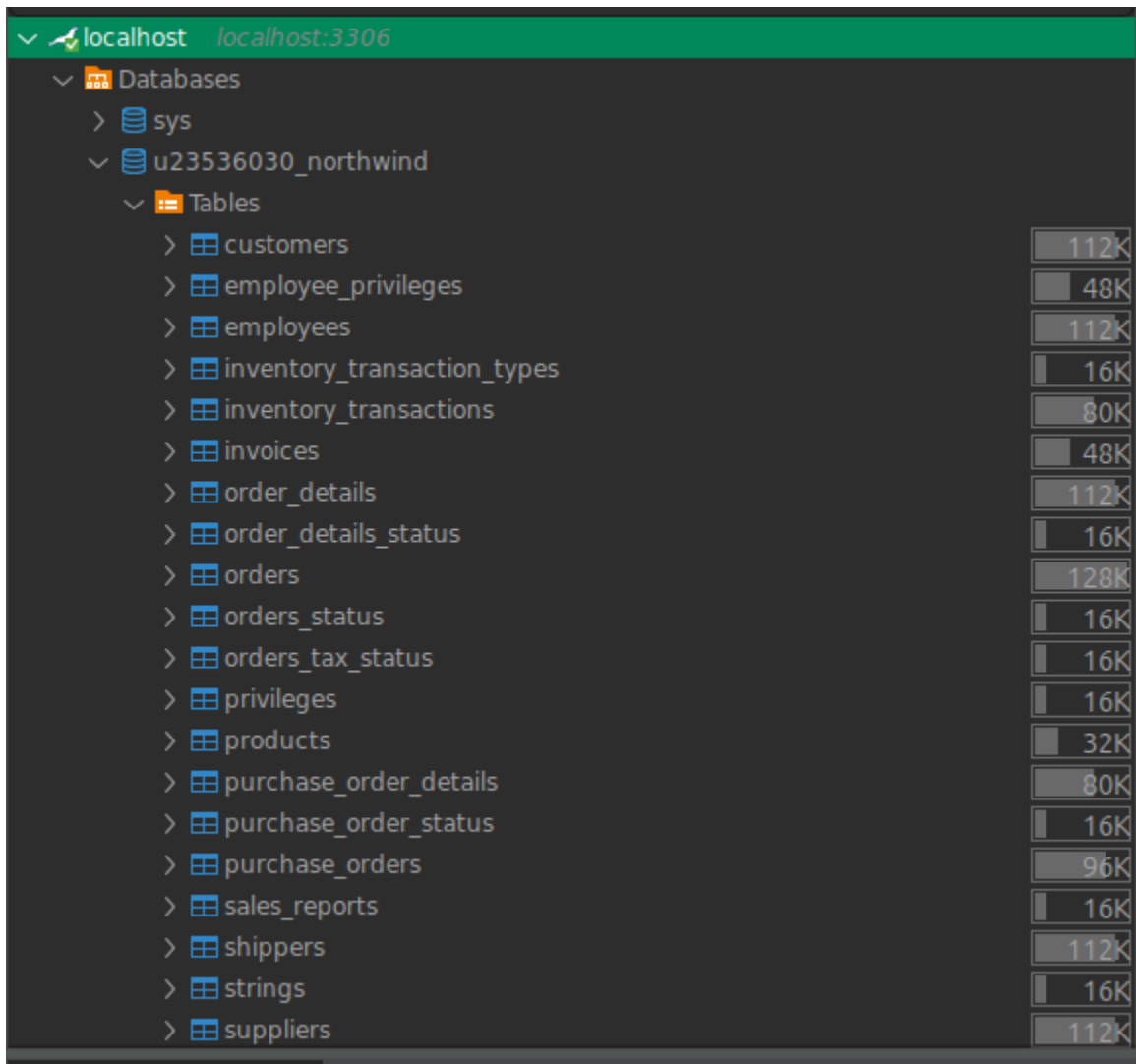
Task 1:

src/data/Northwind

Task 2:

2.1: DBeaver

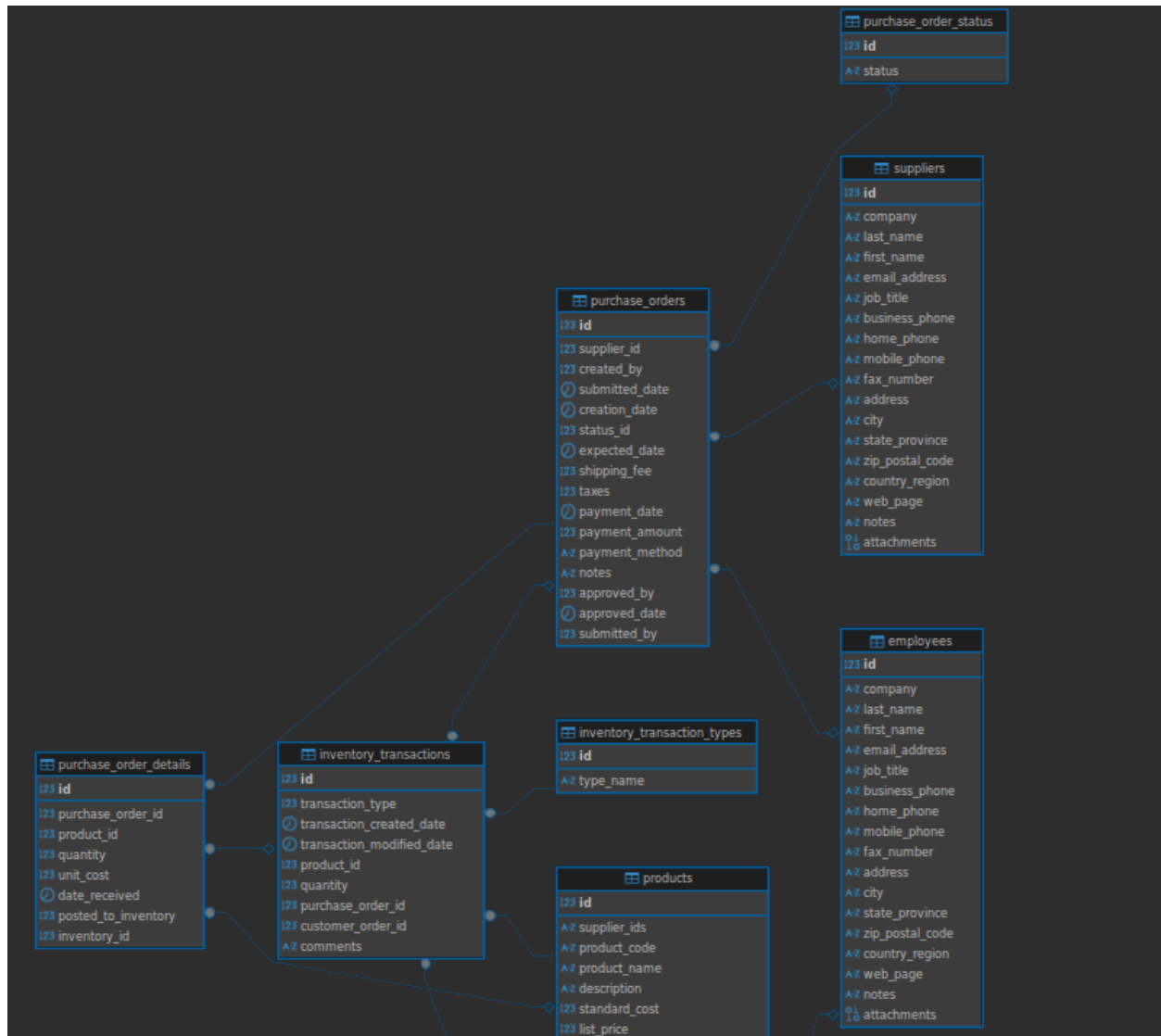
2.2:

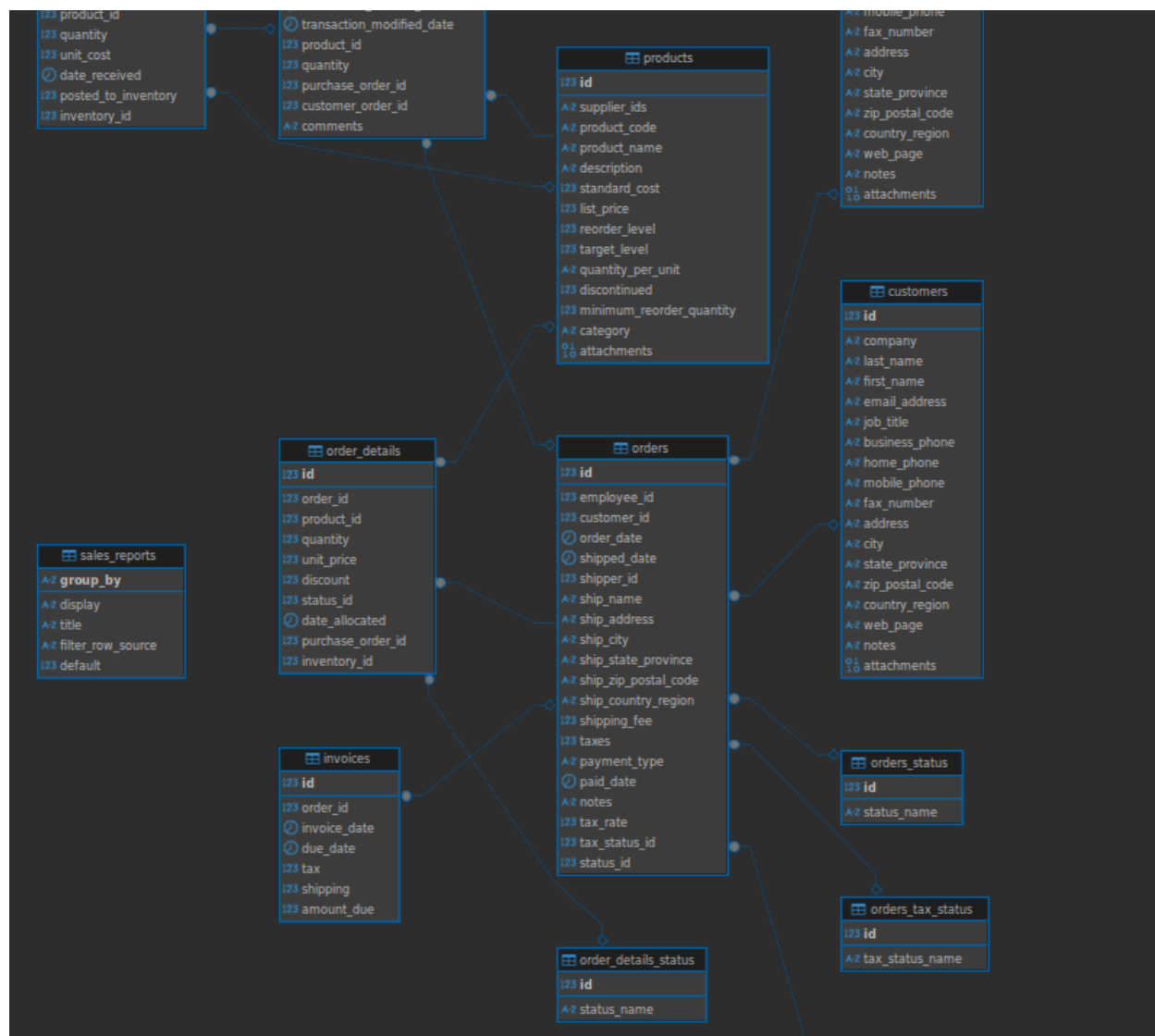


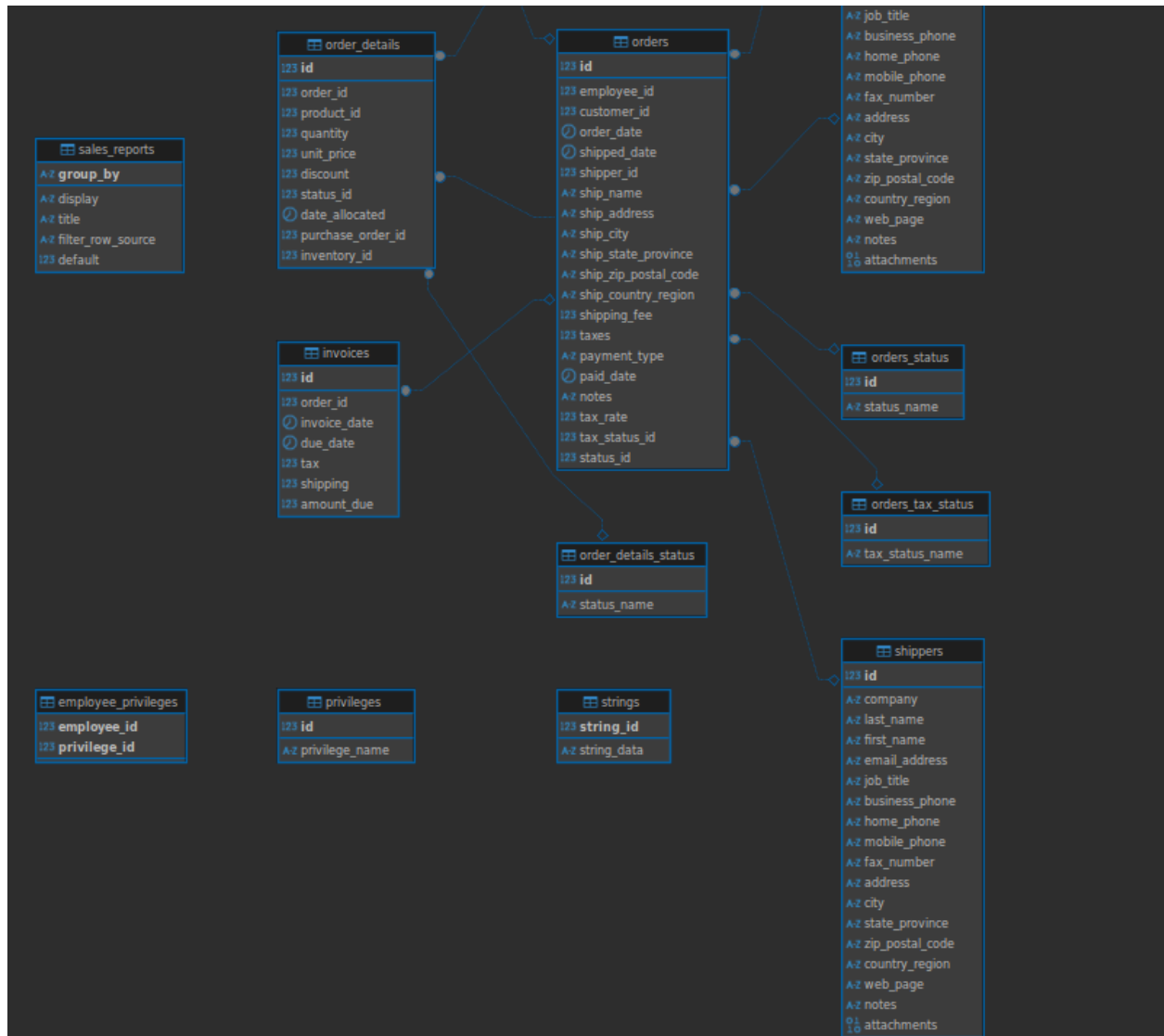
localhost localhost:3306	
Databases	
sys	
u23536030_northwind	
Tables	
customers	112K
employee_privileges	48K
employees	112K
inventory_transaction_types	16K
inventory_transactions	80K
invoices	48K
order_details	112K
order_details_status	16K
orders	128K
orders_status	16K
orders_tax_status	16K
privileges	16K
products	32K
purchase_order_details	80K
purchase_order_status	16K
purchase_orders	96K
sales_reports	16K
shippers	112K
strings	16K
suppliers	112K

### Task 3:

#### 3.1:







3.2:

DATA TYPES:

supplier\_ids: LONGTEXT  
can be NULL

id: INT(11)  
Cannot be NULL  
Primary Key: Uniquely identifies each product.  
Auto Increment: Automatically increases with each new record.

product\_code: VARCHAR(25)  
Indexed: Creates an index on this column for fast lookups.  
can be NULL

product\_name: VARCHAR(50)  
can be NULL

description: LONGTEXT  
can be NULL

standard\_cost: DECIMAL(19,4)  
Default value = 0  
can be NULL

list\_price: DECIMAL(19,4)  
not nullable  
Default value = 0

reorder\_level: int(11)  
can be null

target\_level: INT(11)  
can be null

quality\_per\_unit: VARCHAR(50)  
can be null

discontinued: TINYINT(1)  
can be null

minimum\_reorder\_quantity: INT(11)  
can be null

category: VARCHAR(50)  
can be null

attachments: LONGBLOB  
can be null

CONSTRAINTS:

Primary Key:

Column: id

Auto Increment:

Column: id

Not Null:

Columns: id, list\_price, discontinued

These fields cannot be left empty (NULL).

Default Value:

Columns: standard\_cost, list\_price (default to 0.0000).

Index:

Column: product\_code

LINKS:

The Products table is linked to other tables like Suppliers, Categories, OrderDetails, and an inventory management table.

These relationships are not explicitly enforced with foreign key constraints in the schema but are inferred based on the table structure.

## Task 4.

### 4.1.

Northwind Trading Database							
Employees Products Report Notifications							
Filter: <input type="text"/> Filter							
first_name	last_name	address	email_address	city	region	zip_postal_code	home_phone
Nancy	Freehafer	123 1st Avenue	nancy@northwindtr...	Seattle	USA	99999	(123)555-0102
Andrew	Cencini	123 2nd Avenue	andrew@northwind...	Bellevue	USA	99999	(123)555-0102
Jan	Kotas	123 3rd Avenue	jan@northwindtrad...	Redmond	USA	99999	(123)555-0102
Mariya	Sergienko	123 4th Avenue	mariya@northwindt...	Kirkland	USA	99999	(123)555-0102
Steven	Thorpe	123 5th Avenue	steven@northwindt...	Seattle	USA	99999	(123)555-0102
Michael	Neipper	123 6th Avenue	michael@northwind...	Redmond	USA	99999	(123)555-0102
Robert	Zare	123 7th Avenue	robert@northwindtr...	Seattle	USA	99999	(123)555-0102
Laura	Giussani	123 8th Avenue	laura@northwindtra...	Redmond	USA	99999	(123)555-0102
Anne	Hellung-Larsen	123 9th Avenue	anne@northwindtra...	Seattle	USA	99999	(123)555-0102

### 4.2.



Figure 4.3: Northwind Trading Database

Northwind Trading Database							
Employees							
Filter: se							
first_name	last_name	address	email_address	city	region	zip_postal_code	home_phone
Nancy	Freehafer	123 1st Avenue	nancy@northwindtr...	Seattle	USA	99999	(123)555-0102
Mariya	Sergienko	123 4th Avenue	mariya@northwindtr...	Kirkland	USA	99999	(123)555-0102
Steven	Thorpe	123 5th Avenue	steven@northwindtr...	Seattle	USA	99999	(123)555-0102
Robert	Zare	123 7th Avenue	robert@northwindtr...	Seattle	USA	99999	(123)555-0102
Anne	Hellung-Larsen	123 9th Avenue	anne@northwindtra...	Seattle	USA	99999	(123)555-0102

4.3.

Northwind Trading Database				
Employees Products Report Notifications				
Filter:				Add Product
id	product_name	list_price	supplier_ids	category
1	Northwind Traders Chai	18.0000	4	Beverages
3	Northwind Traders Syrup	10.0000	10	Condiments
4	Northwind Traders Cajun Season...	22.0000	10	Condiments
5	Northwind Traders Olive Oil	21.3500	10	Oil
6	Northwind Traders Boysenberry ...	25.0000	2;6	Jams, Preserves
7	Northwind Traders Dried Pears	30.0000	2	Dried Fruit & Nuts
8	Northwind Traders Curry Sauce	40.0000	8	Sauces
14	Northwind Traders Walnuts	23.2500	2;6	Dried Fruit & Nuts
17	Northwind Traders Fruit Cocktail	39.0000	6	Canned Fruit & Vegetables
19	Northwind Traders Chocolate Bis...	9.2000	1	Baked Goods & Mixes
20	Northwind Traders Marmalade	81.0000	2;6	Jams, Preserves
21	Northwind Traders Scones	10.0000	1	Baked Goods & Mixes
34	Northwind Traders Beer	14.0000	4	Beverages
40	Northwind Traders Crab Meat	18.4000	7	Canned Meat
41	Northwind Traders Clam Chowder	9.6500	6	Soups
43	Northwind Traders Coffee	46.0000	3;4	Beverages
48	Northwind Traders Chocolate	12.7500	10	Candy
51	Northwind Traders Dried Apples	53.0000	2	Dried Fruit & Nuts
52	Northwind Traders Long Grain Ri...	7.0000	1	Grains
56	Northwind Traders Gnocchi	38.0000	1	Pasta
57	Northwind Traders Ravioli	19.5000	1	Pasta
65	Northwind Traders Hot Pepper S...	21.0500	8	Sauces
66	Northwind Traders Tomato Sauce	17.0000	8	Sauces
72	Northwind Traders Mozzarella	34.8000	5	Dairy products
74	Northwind Traders Almonds	10.0000	2;6	Dried Fruit & Nuts
77	Northwind Traders Mustard	13.0000	10	Condiments
80	Northwind Traders Dried Plums	3.5000	2	Dried Fruit & Nuts
81	Northwind Traders Green Tea	2.9900	3	Beverages
82	Northwind Traders Granola	4.0000	1	Cereal
83	Northwind Traders Potato Chips	1.8000	9	Chips, Snacks
85	Northwind Traders Brownie Mix	12.4900	1	Baked Goods & Mixes
86	Northwind Traders Cake Mix	15.9900	1	Baked Goods & Mixes
87	Northwind Traders Tea	4.0000	7	Beverages
88	Northwind Traders Pears	1.3000	6	Canned Fruit & Vegetables
89	Northwind Traders Peaches	1.5000	6	Canned Fruit & Vegetables
90	Northwind Traders Pineapple	1.8000	6	Canned Fruit & Vegetables
91	Northwind Traders Cherry Pie Fill...	3.0000	6	Canned Fruit & Vegetables

Northwind Trading Database				
Employees Products Report Notifications				
Filter:	ch	Add Product		
id	product_name	list_price	supplier_ids	category
1	Northwind Traders Chai	18.0000	4	Beverages
19	Northwind Traders Chocolate Bis...	9.2000	1	Baked Goods & Mixes
41	Northwind Traders Clam Chowder	9.6500	6	Soups
48	Northwind Traders Chocolate	12.7500	10	Candy
56	Northwind Traders Gnocchi	38.0000	1	Pasta
83	Northwind Traders Potato Chips	1.8000	9	Chips, Snacks
89	Northwind Traders Peaches	1.5000	6	Canned Fruit & Vegetables
91	Northwind Traders Cherry Pie Filli...	2.0000	6	Canned Fruit & Vegetables
99	Northwind Traders Chicken Soup	1.9500	6	Soups

(pro insert here) //////////////////////////////////

4.4.

Page 2 of 10 Northwind Trading Database

Employees	Products	Report	Notifications
Warehouse	Category	Product Count	
Supplier A	Baked Goods & Mixes	4	
Supplier A	Cereal	2	
Supplier A	Grains	1	
Supplier A	Pasta	2	
Supplier B	Dried Fruit & Nuts	5	
Supplier B	Jams, Preserves	2	
Supplier C		1	
Supplier C	Beverages	2	
Supplier D	Beverages	2	
Supplier E	Dairy products	1	
Supplier F	Canned Fruit & Vegetables	8	
Supplier F	Soups	3	
Supplier G	Beverages	1	
Supplier G	Canned Meat	3	
Supplier H	Sauces	3	
Supplier I	Chips, Snacks	1	
Supplier J	Candy	1	
Supplier J	Condiments	3	
Supplier J	Oil	1	

4.5.

Northwind Trading Database

EmployeesProductsReportNotifications

ID	Name	Email	Phone
1	Anna Bedecs		
2	Antonio Gratacos Solsona		
3	Thomas Axen		
4	Christina Lee		
5	Martin O'Donnell		
6	Francisco Pérez-Olaeta		
7	Ming-Yang Xie		
8	Elizabeth Andersen		2436
9	Sven Mortensen		
10	Roland Wacker		
11	Peter Krschne		
12	John Edwards		
13	Andre Ludick		
14	Carlos Grilo		1324
15	Helena Kupkova		
16	Daniel Goldschmidt		
17	Jean Philippe Bagel		
18	Catherine Autier Miconi		235624
19	Alexander Eggerer		
20	George Li		
21	Bernard Tham		
22	Luciana Ramos		
23	Michael Entin		
24	Jonas Hasselberg		
25	John Rodman		
26	Run Liu		2345
27	Karen Toh		
28	Amritansh Raghav		
29	Soo Junn Lee		

Company:

Last Name:

First Name:

Email Address:

Job Title:

Business Phone:

Home Phone:

Mobile Phone:

Fax Number:

Address:

City:

State/Province:

Zip/Postal Code:

Country/Region:

Web Page:

Notes:

Add Client

Update Client

Delete Client

Northwind Trading Database

Employees

Products

Report

Notifications

ID	Name	Email	Phone
1	Anna Bedecs		
2	Antonio Gratacos Solsona		
3	Thomas Axen		
4	Christina Lee		
5	Martin O'Donnell		
6	Francisco Pérez-Olaeta		
7	Ming-Yang Xie		
8	Elizabeth Andersen		2436
9	Sven Mortensen		
10	Roland Wacker		
11	Peter Krschne		
12	John Edwards		
13	Andre Ludick		
14	Carlos Grilo		1324
15	Helena Kupkova		
16	Daniel Goldschmidt		
17	Jean Philippe Bagel		
18	Catherine Autier Miconi		235624
19	Alexander Eggerer		
21	Bernard Tham		
22	Luciana Ramos		
23	Michael Entin		
24	Jonas Hasselberg		
25	John Rodman		
26	Run Liu		2345
27	Karen Toh		
28	Amritansh Raghav		
29	Soo Jung Lee		
31	Selected Selec	EMAIL@EMAIL	13546

Company:

noname

Last Name:

Selec

First Name:

Selected

Email Address:

EMAIL@EMAIL

Job Title:

owner

Business Phone:

Home Phone:

13546

Mobile Phone:

2356

Fax Number:

1738

Address:

City:

State/Province:

Zip/Postal Code:

Country/Region:

Web Page:

Notes:

Add Client

Update Client

Delete Client

Northwind Trading Database

EmployeesProductsReportNotifications

ID	Name	Email	Phone
1	Anna Bedecs		
2	Antonio Gratacos Solsona		
3	Thomas Axen		
4	Christina Lee		
5	Martin O'Donnell		
6	Francisco Pérez-Olaeta		
7	Ming-Yang Xie		
8	Elizabeth Andersen		2436
9	Sven Mortensen		
10	Roland Wacker		
11	Peter Krschne		
12	John Edwards		
13	Andre Ludick		
14	Carlos Grilo		1324
15	Helena Kupkova		
16	Daniel Goldschmidt		
17	Jean Philippe Bagel		
18	Catherine Autier Miconi		235624
19	Alexander Eggerer		
20	George Li		
21	Bernard Tham		
22	Luciana Ramos		
23	Michael Entin		
24	Jonas Hasselberg		
25	John Rodman		
26	Run Liu		2345
27	Karen Toh		
28	Amritansh Raghav		
29	Soo Jinn Lee		

Company:Company T

Job Title:urchasing Manager

Fax Number:(123)555-0101

Zip/Postal Code:99999

Last Name:Li

Business Phone:(123)555-0100

Address:789 20th Street

Country/Region:USA

First Name:George

Home Phone:

City:New York

Web Page:

Email Address:

Mobile Phone:

State/Province:NY

Notes:

Add ClientUpdate ClientDelete Client

Northwind Trading Database

Employees Products Report Notifications

ID	Name	Email	Phone
1	Anna Bedecs		
2	Antonio Gratacos Solsona		
3	Thomas Axen		
4	Christina Lee		
5	Martin O'Donnell		
6	Francisco Pérez-Olaeta		
7	Ming-Yang Xie		
8	Elizabeth Andersen		2436
9	Sven Mortensen		
10	Roland Wacker		
11	Peter Krschne		
12	John Edwards		
13	Andre Ludick		
14	Carlos Grilo		1324
15	Helena Kupkova		
16	Daniel Goldschmidt		
17	Jean Philippe Bagel		
18	Catherine Autier Miconi		235624
19	Alexander Eggerer		
21	Bernard Tham		
22	Luciana Ramos		
23	Michael Entin		
24	Jonas Hasselberg		
25	John Rodman		
26	Run Liu		2345
27	Karen Toh		
28	Amritansh Raghav		
29	Soo Jung Lee		

Company:  Last Name:  First Name:  Email Address:

Job Title:  Business Phone:  Home Phone:  Mobile Phone:

Fax Number:  Address:  City:  State/Province:

Zip/Postal Code:  Country/Region:  Web Page:  Notes:

4.6.



Northwind Trading Database

Employees

Products

Report

Notifications

ID	Name	Email	Phone	Active
1	Anna Bedecs			Inactive
2	Antonio Gratacos Solsona			Inactive
5	Martin O'Donnell			Inactive
7	Ming-Yang Xie			Inactive
11	Peter Krschne			Inactive
13	Andre Ludick			Inactive
14	Carlos Grilo		1324	Inactive
15	Helena Kupkova			Inactive
16	Daniel Goldschmidt			Inactive
17	Jean Philippe Bagel			Inactive
18	Catherine Autier Miconi		235624	Inactive
19	Alexander Eggerer			Inactive
21	Bernard Tham			Inactive
22	Luciana Ramos			Inactive
23	Michael Entin			Inactive
24	Jonas Hasselberg			Inactive
31	Selected Selec	EMAIL@EMAIL	13546	Inactive

Company:

Last Name:

First Name:

Email Address:

Job Title:

Business Phone:

Home Phone:

Mobile Phone:

Fax Number:

Address:

City:

State/Province:

Zip/Postal Code:

Country/Region:

Web Page:

Notes:

Add Client

Update Client

Delete Client

Show Active Clients

Show All Clients

rs\_getString("#home\_phone")

Northwind Trading Database

Employees

Products

Report

Notifications

ID	Name	Email	Phone	Active
1	Anna Bedecs			Inactive
2	Antonio Gratacos Solsona			Inactive
3	Thomas Axen			Active
4	Christina Lee			Active
5	Martin O'Donnell			Inactive
6	Francisco Pérez-Olaeta			Active
7	Ming-Yang Xie			Inactive
8	Elizabeth Andersen		2436	Active
9	Sven Mortensen			Active
10	Roland Wacker			Active
11	Peter Krschne			Inactive
12	John Edwards			Active
13	Andre Ludick			Inactive
14	Carlos Grilo		1324	Inactive
15	Helena Kupkova			Inactive
16	Daniel Goldschmidt			Inactive
17	Jean Philippe Bagel			Inactive
18	Catherine Autier Miconi		235624	Inactive
19	Alexander Eggerer			Inactive
21	Bernard Tham			Inactive
22	Luciana Ramos			Inactive
23	Michael Entin			Inactive
24	Jonas Hasselberg			Inactive
25	John Rodman			Active
26	Rui Liu		2345	Active
27	Karen Toh			Active
28	Amritansh Raghav			Active
29	Soo Jung Lee			Active
31	Selected Seler	EMAIL@EMAIL	13546	Inactive

Company:

Last Name:

First Name:

Email Address:

Job Title:

Business Phone:

Home Phone:

Mobile Phone:

Fax Number:

Address:

City:

State/Province:

Zip/Postal Code:

Country/Region:

Web Page:

Notes:

Add Client

Update Client

Delete Client

Show Inactive Clients

Showing All Clients

Northwind Trading Database

Employees

Products

Report

Notifications

be

Filter:

ID	Name	Email	Phone	Active
1	Anna Bedecs			Inactive
8	Elizabeth Andersen		2436	Active
21	Bernard Tham			Inactive
24	Jonas Hasselberg			Inactive

Company:

Last Name:

First Name:

Email Address:

Job Title:

Business Phone:

Home Phone:

Mobile Phone:

Fax Number:

Address:

City:

State/Province:

Zip/Postal Code:

Country/Region:

Web Page:

Notes:

Add Client

Update Client

Delete Client

Show Inactive Clients

Showing All Clients

Northwind Trading Database				
Employees Products Report Notifications				
Filter:				Add Product
id	product_name	list_price	supplier_ids	category
20	Northwind Traders Marmalade	81.0000	2,6	Jams, Preserves
21	Northwind Traders Scones	10.0000	1	Baked Goods & Mixes
34	Northwind Traders Beer	14.0000	4	Beverages
40	Northwind Traders Crab Meat	18.4000	7	Canned Meat
41	Northwind Traders Clam Chowder	9.6500	6	Soups
43	Northwind Traders Coffee	46.0000	3,4	Beverages
48	Northwind Traders Chocolate	12.7500	10	Candy
51	Northwind Traders Dried Apples	53.0000	2	Dried Fruit & Nuts
52	Northwind Traders Long Grain Ri...	7.0000	1	Grains
56	Northwind Traders Gnocchi	38.0000	1	Pasta
57	Northwind Traders			Pasta
65	Northwind Traders			Sauces
66	Northwind Traders			Sauces
72	Northwind Traders			Dairy products
74	Northwind Traders			Dried Fruit & Nuts
77	Northwind Traders			Condiments
80	Northwind Traders			Dried Fruit & Nuts
81	Northwind Traders			Beverages
82	Northwind Traders			Cereal
83	Northwind Traders			Chips, Snacks
85	Northwind Traders			Baked Goods & Mixes
86	Northwind Traders			Baked Goods & Mixes
87	Northwind Traders			Beverages
88	Northwind Traders Pears	1.3000	6	Canned Fruit & Vegetables
89	Northwind Traders Peaches	1.5000	6	Canned Fruit & Vegetables
90	Northwind Traders Pineapple	1.8000	6	Canned Fruit & Vegetables
91	Northwind Traders Cherry Pie Fill...	2.0000	6	Canned Fruit & Vegetables
92	Northwind Traders Green Beans	1.2000	6	Canned Fruit & Vegetables
93	Northwind Traders Corn	1.2000	6	Canned Fruit & Vegetables
94	Northwind Traders Peas	1.5000	6	Canned Fruit & Vegetables
95	Northwind Traders Tuna Fish	2.0000	7	Canned Meat
96	Northwind Traders Smoked Salm...	4.0000	7	Canned Meat
97	Northwind Traders Hot Cereal	5.0000	1	Cereal
98	Northwind Traders Vegetable So...	1.8900	6	Soups
99	Northwind Traders Chicken Soup	1.9500	6	Soups
100	adsgsdg	123.0000	3	

Add Product

Name:

Canned Beans

Price:

37

Supplier:

6 - Supplier F

Category:

Soups

Save

Cancel

Task 5.

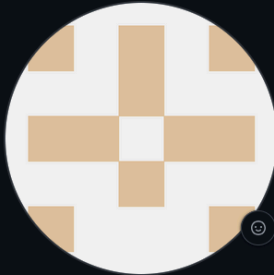
5.1.src/main/resources/.dbconfig.properties

```
cos221p4 > src > main > re
1 DB_URL=jdbc:
2 DB_USER=root
3 DB_PASSWORD=
```

Task 6.


6.1. <https://github.com/amJohnnyma/COS221>

https://github.com/amJohnnyma




**Dewald Colesky**  
amJohnnyma · he/him  
Computer science student.  
[Edit profile](#)

**Achievements**



**Organizations**



**Popular repositories** [Customize your pins](#)

**COS314** [Public](#)

● C++

**COS221** [Public](#)

COS221 Repository

● Java

147 contributions in the last year

Contribution settings ▾

2025

2024

2023

2022

Learn how we count contributions

Less ▾ More

**Contribution activity**

April 2025

- Created 28 commits in 2 repositories
  - amJohnnyma/COS221 25 commits
  - amJohnnyma/COS314 3 commits
- Created 1 repository
  - amJohnnyma/COS221
- Opened 2 pull requests in 2 repositories
  - amJohnnyma/COS221
    - merged
    - merged
  - COS301-SE-2025/MP15
- Reviewed 1 pull request in 1 repository
  - COS301-SE-2025/MP15
    - Integration UI into mpdbd

6.2. Pretty standard sql, spaghetti code available for review