

Project: Database Design and Implementation

Task 1: Identify entities

The first step when designing a new database

The screenshot shows the pgAdmin 4 web interface. The left sidebar displays the database structure, with 'Tables (5)' expanded to show 'customer', 'products', 'sales_outlet', 'sales_transaction', and 'staaf'. The 'Query Editor' tab is active, showing a SQL query: `SELECT * FROM public.sales_transaction ORDER BY id ASC`. Below the query editor, the 'Data Output' tab displays a table with the following data:

id	date	time	sales_outlet_id	staff_id	customer_id	product_id	quantity	price
1	27/4/20...	09:53:55		1	1	1	6	200

The bottom status bar indicates the time is 10:39 AM on 9/8/2022, and the temperature is 38°C.

Task 2: Identify attributes

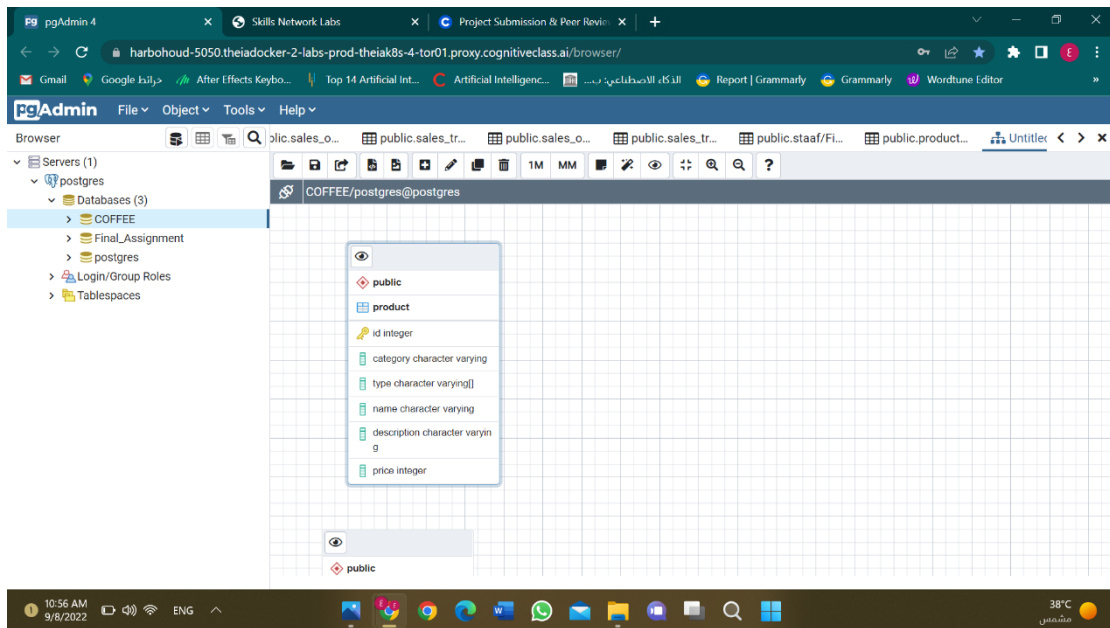
The screenshot shows the pgAdmin 4 interface. On the left, the 'Browser' pane displays a tree view of the database structure. The 'sales_transaction' table is highlighted under the 'public' schema. In the center, the 'Query Editor' shows a SQL query: `SELECT * FROM public.sales_transaction ORDER BY id ASC`. Below the query editor, the 'Data Output' pane displays the results of the query. A blue box highlights the 'price' column in the results table.

id	date	time	sales_outlet_id	staff_id	customer_id	product_id	quantity	price
1	27/4/20...	09:53:55		1	1	1	1	200

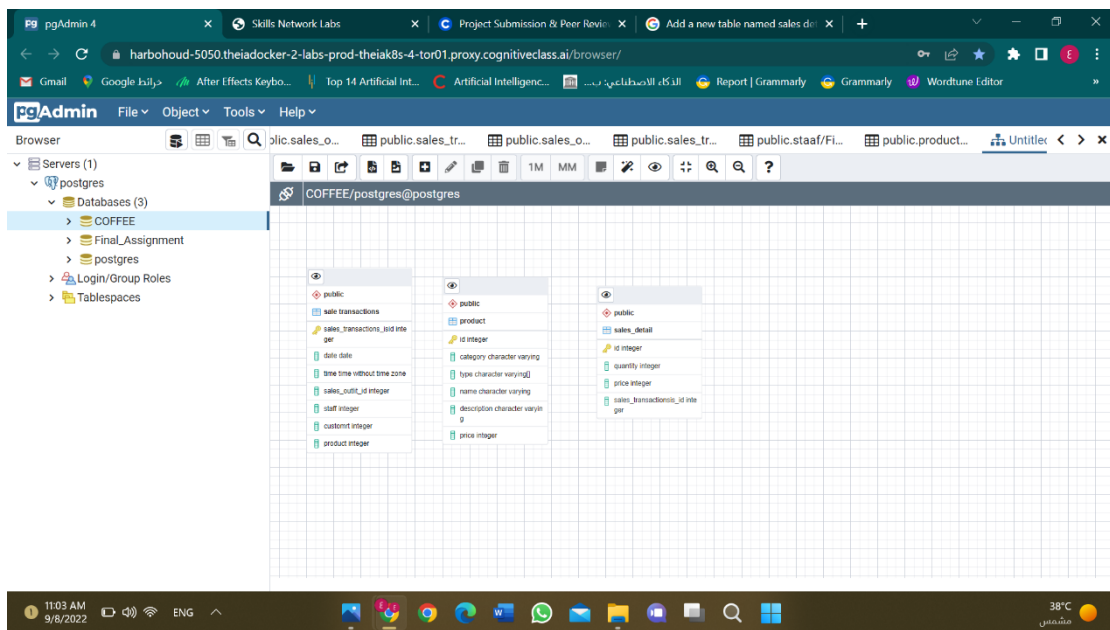
Task 3: Create an ERD

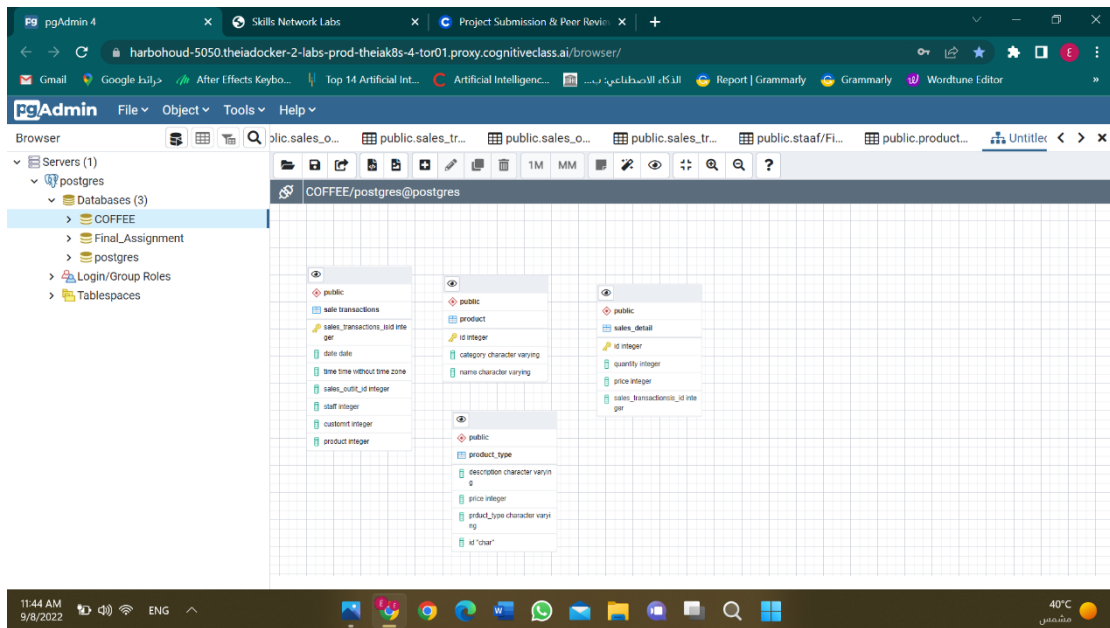
The screenshot shows the pgAdmin 4 interface with the ERD editor open. The 'public' schema is selected, and the 'sale transactions' table is being edited. The table's attributes are listed in a panel on the right:

- id integer (Primary Key)
- date date
- time time without time zone
- sales_outlet_id integer
- staff integer
- customer integer
- product integer
- quantity character varying
- price integer



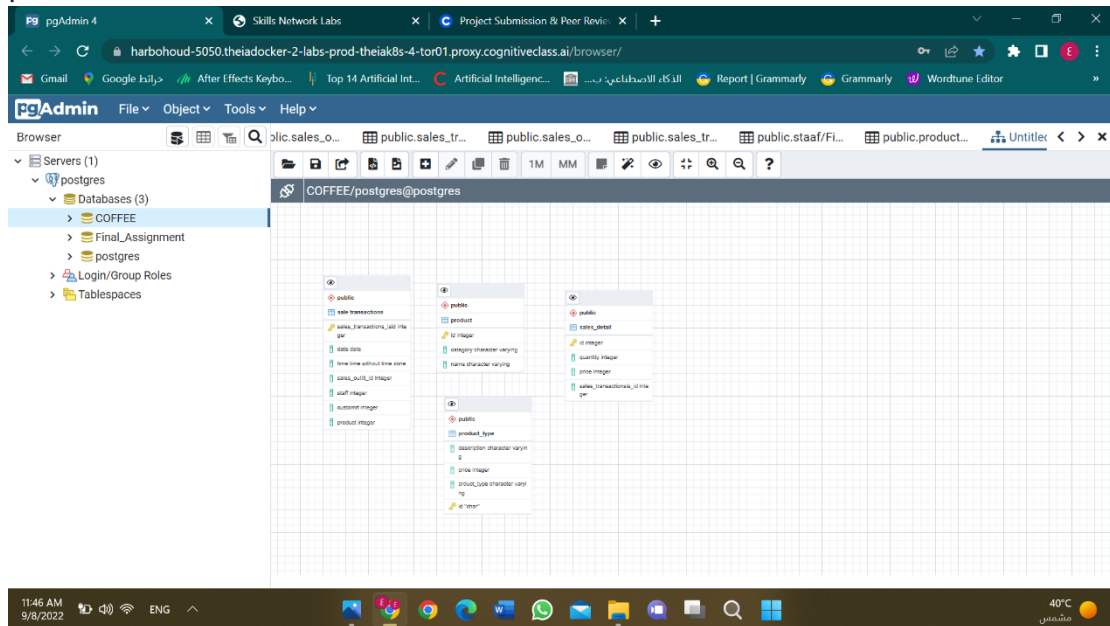
Task 4: Normalize tables



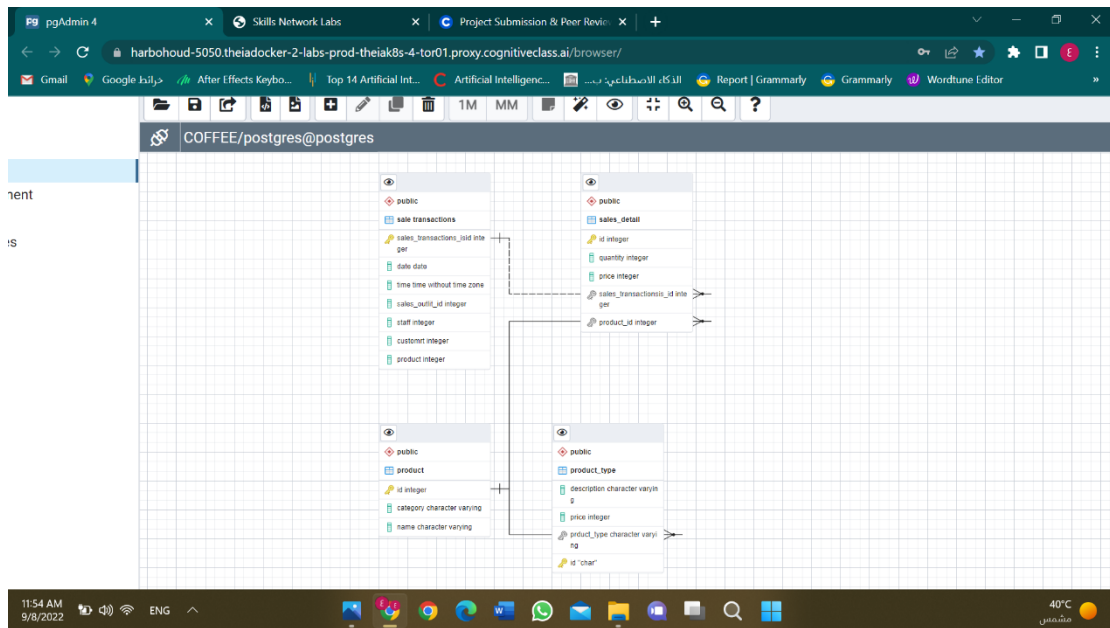


Task 5: Define keys and relationships

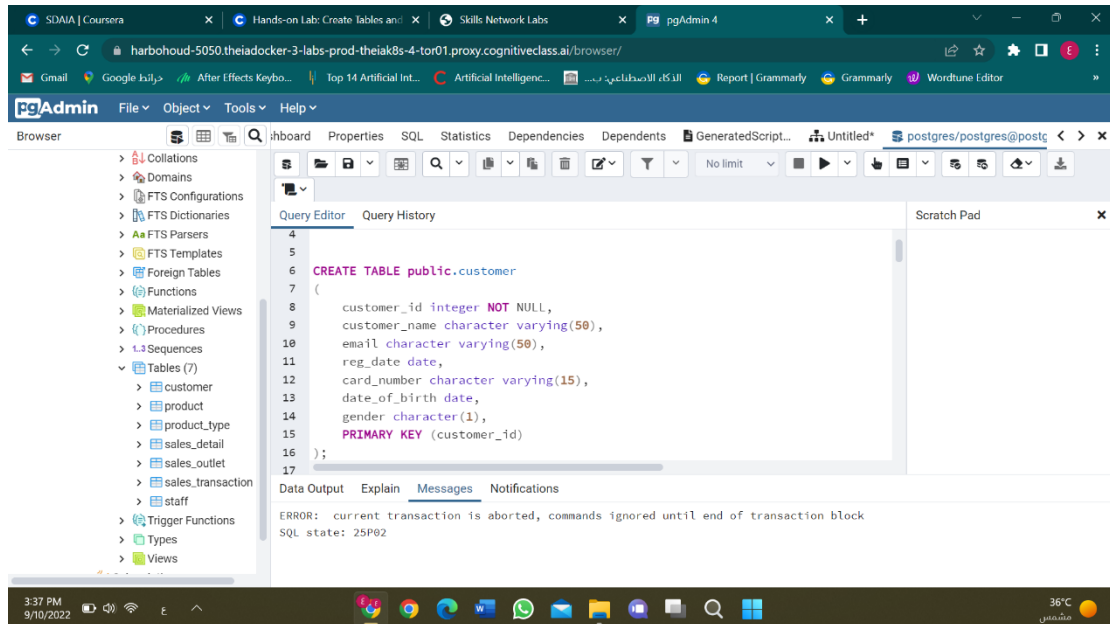
pk

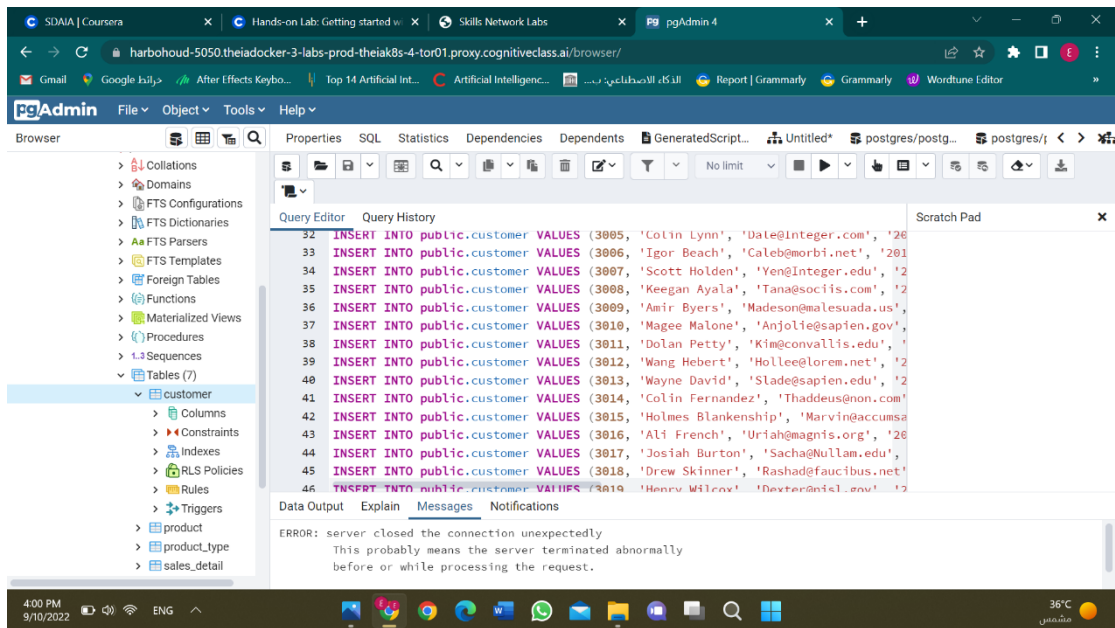


Relationships:

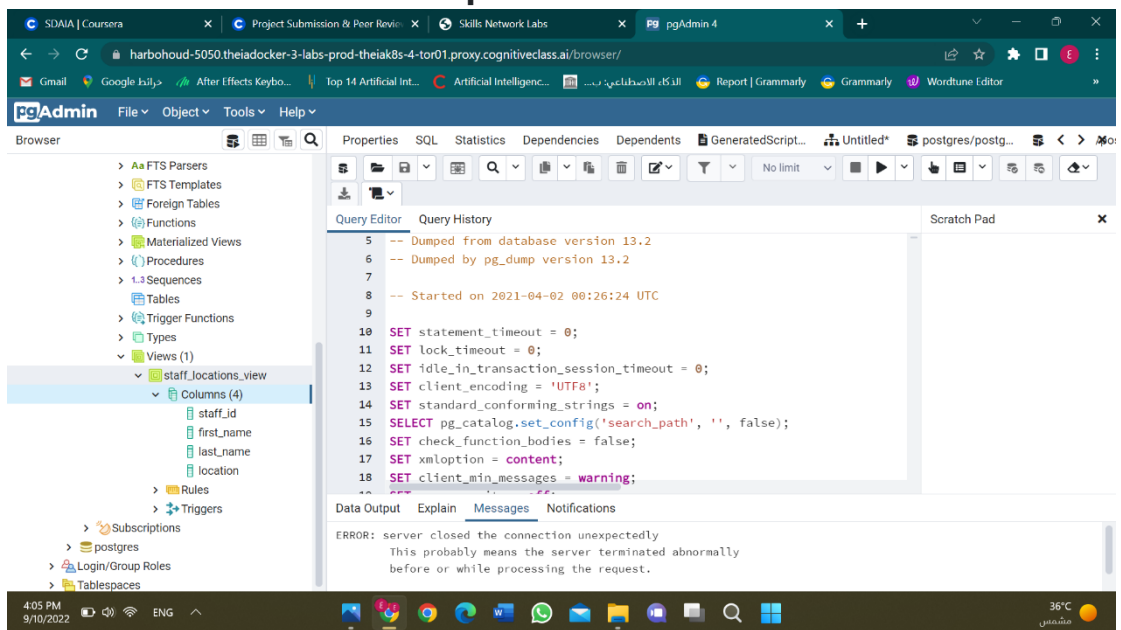


Task 6: Create database objects by generating and running the SQL script from the ERD Tool





Task 7: Create a view and export the data



Task 8: Create a materialized view and export the data

The screenshot displays the pgAdmin 4 web interface in a browser. The left-hand 'Browser' pane shows the database structure, with 'Materialized Views (1)' expanded and 'product_info_m-view' selected. The central 'Query Editor' pane contains the SQL query: `SELECT * FROM public."product_info_m-view"`. Below the editor, the 'Data Output' tab is active, showing a table with three columns: 'product_name' (character varying (100)), 'description' (character varying (250)), and 'product_category' (character varying (50)). A green status bar at the bottom of the interface indicates: 'Successfully run. Total query runtime: 738 msec. 0 rows affected.'

Browser: pgAdmin 4

File Object Tools Help

Browser

- FTS Configurations
- FTS Dictionaries
- FTS Parsers
- FTS Templates
- Foreign Tables
- Functions
- Materialized Views (1)
 - product_info_m-view
 - Columns
 - Indexes
- Procedures
- Sequences
- Tables (7)
 - customer
 - product
 - product_type
 - sales_detail
 - sales_outlet
 - sales_transaction
 - staff
- Trigger Functions
- Types
- Views

Query Editor

```
1 SELECT * FROM public."product_info_m-view"
```

Query History

Scratch Pad

Data Output Explain Messages Notifications

product_name	description	product_category
character varying (100)	character varying (250)	character varying (50)

Successfully run. Total query runtime: 738 msec. 0 rows affected.

4:11 PM 9/10/2022 ENG 35°C