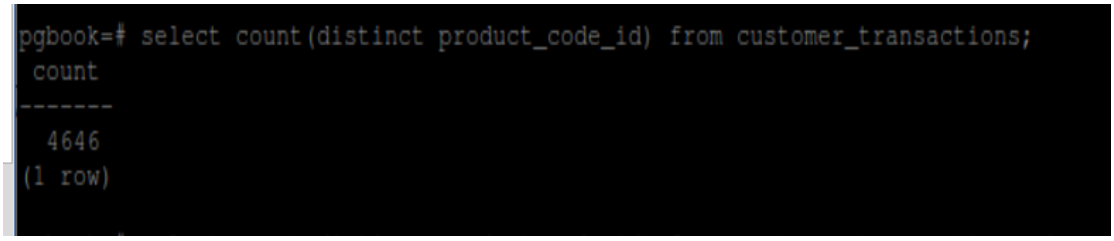
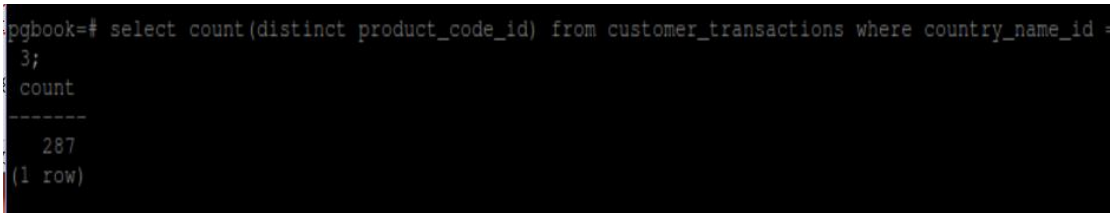
```
/* Question 1 */
/* peek into main transactions table */
SELECT *
FROM customer_transactions
;

/* 1.1 how many different products were sold in total */
SELECT
	COUNT(DISTINCT product_code_id)
FROM customer_transactions
;
/* Output: 4646 */
```




```
/* 1.2 how many were sold in the United States?
Assume asking for different product in US
After group by country names we know that US
Country id is 3. I only put the query for output of
this question here */
SELECT
	COUNT(DISTINCT product_code_id)
FROM customer_transactions
WHERE country_name_id = 3
;
/* Output: 287 */
```




```
/* 1.3 how many during the month of January 2010?
Assume ask for the total product in January 2010
Generate the table sorted by year_month */
SELECT
	DATE_TRUNC('month', invoice_date) AS year_month
	, SUM(quantity) AS units
FROM customer_transactions
```

```
GROUP BY
    DATE_TRUNC('month', invoice_date)
ORDER BY year_month ASC
;
/* Output 367141 */
```

```
pgbook=# select Date_trunc('month', invoice_date) as year_month, sum(quantity) as units fro
mer_transactions group by Date_trunc('month', invoice_date) Order by year_month asc;
     year_month      | units
---------------------+--------
 2009-12-01 00:00:00 | 390286
 2010-01-01 00:00:00 | 367141
 2010-02-01 00:00:00 | 366317
 2010-03-01 00:00:00 | 499030
 2010-04-01 00:00:00 | 345590
```

```
/* Question 2
what is the best-selling product in the UK?
How many units of it were sold?
We want to know the name as well as units
Generate a table */
SELECT
    pro.product_description
    , product_code_id
    , SUM(quantity) AS total
FROM customer_transactions AS trans
INNER JOIN dim_product_descriptions AS pro
    ON trans.product_description_id = pro.product_description_id
GROUP BY
    product_code_id
    , pro.product_description
    , trans.country_name_id
ORDER BY total DESC
LIMIT 5
;
/* Output best selling product: World War 2 Gliders Asstd Designs
Output units: 99040 */
```

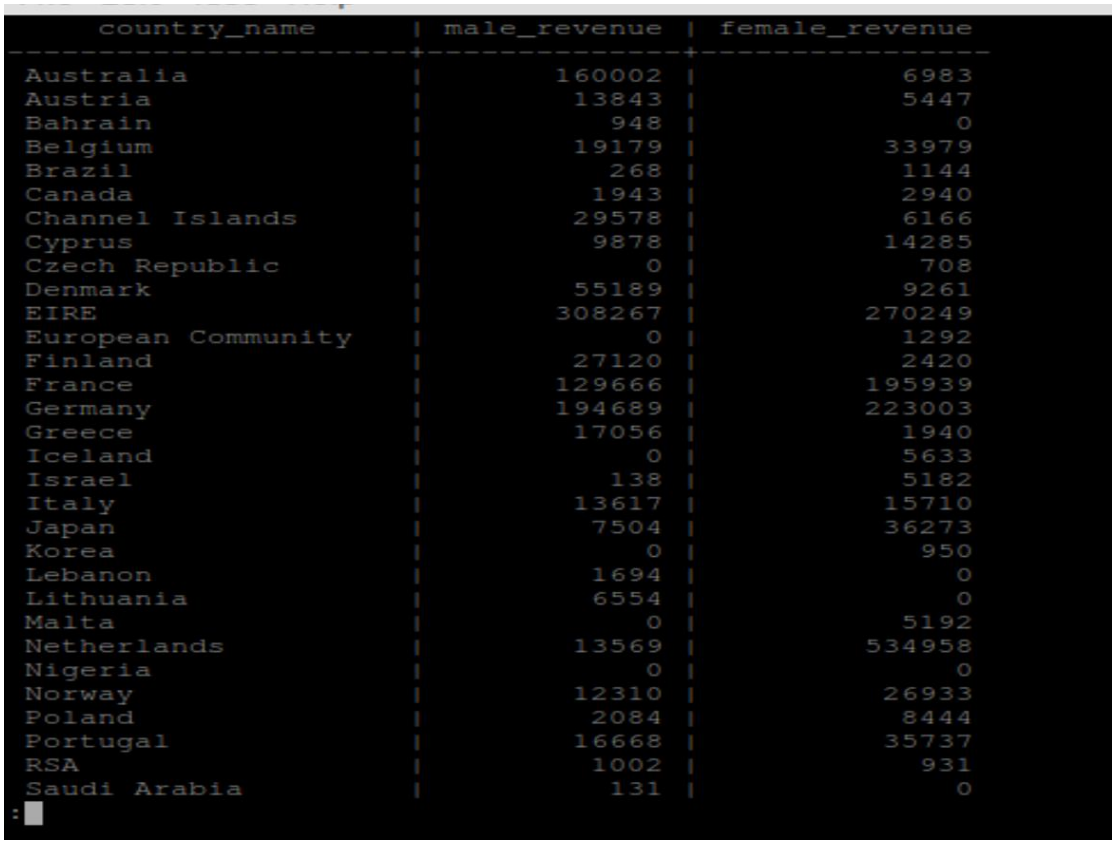
```
pgbook=# select pro.product_description, product_code_id, sum(quantity) as total from customer_tra
nsactions as trans inner join dim_product_descriptions as pro on trans.product_description_id = pr
o.product_description_id group by product_code_id, pro.product_description, trans.country_name_id
order by total desc limit 5;
       product_description        | product_code_id | total
----------------------------------+-----------------+-------
 WORLD WAR 2 GLIDERS ASSTD DESIGNS |             707 | 99040
 WHITE HANGING HEART T-LIGHT HOLDER |             107 | 82760
 ASSORTED COLOUR BIRD ORNAMENT     |              31 | 73777
 BROCADE RING PURSE                |             973 | 70022
 JUMBO BAG RED RETROSPOT           |             150 | 67830
(5 rows)
```

```
/* Question 3
What country has the third largest sales revenue in February 2010
Generate a table to show all the month with sales corresponding
In descending order, and find the third in Feb 2010 */
SELECT
    DATE_TRUNC('month', invoice_date) AS year_month
    , cntr.country_name
    , ROUND(SUM(quantity * unit_price)) AS revenue
FROM customer_transactions AS trans
INNER JOIN dim_countries AS cntr
  ON trans.country_name_id = cntr.country_name_id

GROUP BY
    DATE_TRUNC('month', invoice_date)
    , cntr.country_name
ORDER BY year_month, revenue DESC
;
/* Output from the table: Denmark */
```

```
2010-01-01 00:00:00 | Japan          |      3
2010-02-01 00:00:00 | United Kingdom | 402818
2010-02-01 00:00:00 | EIRE           |  19187
2010-02-01 00:00:00 | Denmark        |  16179
2010-02-01 00:00:00 | Netherlands    |  15947
2010-02-01 00:00:00 | France         |   8981
2010-02-01 00:00:00 | Germany        |   8871
2010-02-01 00:00:00 | Sweden         |   8203
```

```
/* Question 4
Write a query that returns total revenue by male
and female customers for each country */
SELECT
    cntr.country_name
    , ROUND(SUM(CASE WHEN LOWER(detail.customer_gender) = 'male' THEN
    trans.quantity * trans.unit_price ELSE 0 END)) AS male_revenue
    , ROUND(SUM(CASE WHEN LOWER(detail.customer_gender) = 'female' THEN
    trans.quantity * trans.unit_price ELSE 0 END)) AS female_revenue
FROM customer_transactions AS trans
INNER JOIN dim_customer_details AS detail
  ON trans.customer_id = detail.customer_id
INNER JOIN dim_countries AS cntr
  ON trans.country_name_id = cntr.country_name_id

GROUP BY cntr.country_name
;
```

/* Output as a table */



country_name	male_revenue	female_revenue
Australia	160002	6983
Austria	13843	5447
Bahrain	948	0
Belgium	19179	33979
Brazil	268	1144
Canada	1943	2940
Channel Islands	29578	6166
Cyprus	9878	14285
Czech Republic	0	708
Denmark	55189	9261
EIRE	308267	270249
European Community	0	1292
Finland	27120	2420
France	129666	195939
Germany	194689	223003
Greece	17056	1940
Iceland	0	5633
Israel	138	5182
Italy	13617	15710
Japan	7504	36273
Korea	0	950
Lebanon	1694	0
Lithuania	6554	0
Malta	0	5192
Netherlands	13569	534958
Nigeria	0	0
Norway	12310	26933
Poland	2084	8444
Portugal	16668	35737
RSA	1002	931
Saudi Arabia	131	0

:

/* extra credit */
/* which country has the closest parity in revenue
Between male and female. I reuse the table from
Last question to compute the result. */

```
WITH revenue AS
(
    SELECT
        cntr.country_name
        , ROUND(SUM(CASE WHEN LOWER(detail.customer_gender) = 'male' THEN
        trans.quantity * trans.unit_price ELSE 0 END)) AS male_revenue
        , ROUND(SUM(CASE WHEN LOWER(detail.customer_gender) = 'female' THEN
        trans.quantity * trans.unit_price ELSE 0 END)) AS female_revenue
    FROM customer_transactions AS trans
    INNER JOIN dim_customer_details AS detail
      ON trans.customer_id = detail.customer_id
    INNER JOIN dim_countries AS cntr
      ON trans.country_name_id = cntr.country_name_id

    GROUP BY cntr.country_name
)
```

```
SELECT
	rev.country_name
	, ABS(1 – rev.male_revenue/NULLIF(rev.female_revenue, 0)) AS ratio
FROM revenue AS rev

GROUP BY
	rev.country_name
	, ratio
ORDER BY ratio ASC
LIMIT 1
;
/* Output: RSA */
```