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Національний технічний університет України
«Київський політехнічний інститут»
Кафедра АСОІУ

ЗВІТ

Про виконання лабораторної роботи №2

З дисципліни

«OLAP та сховища даних»

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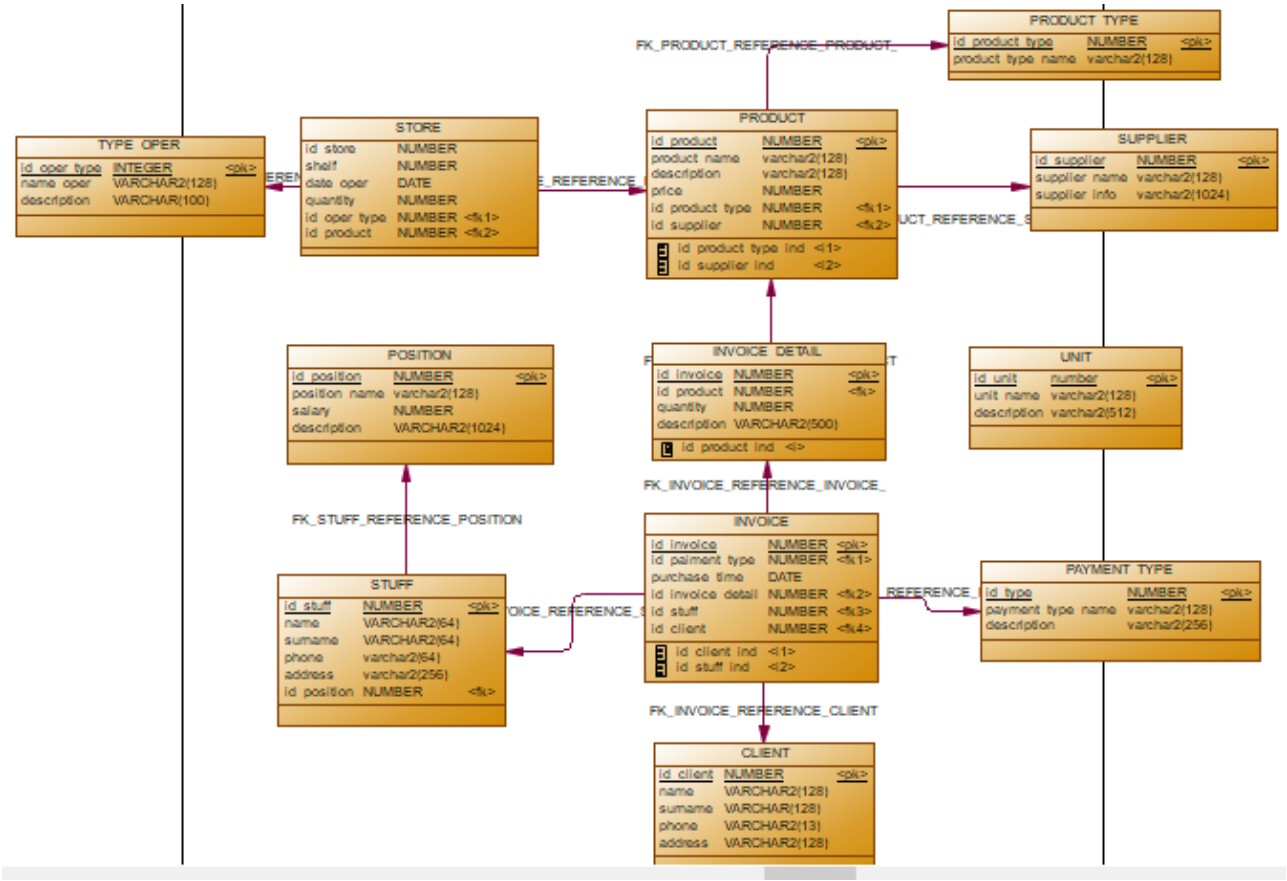
Київ 2018

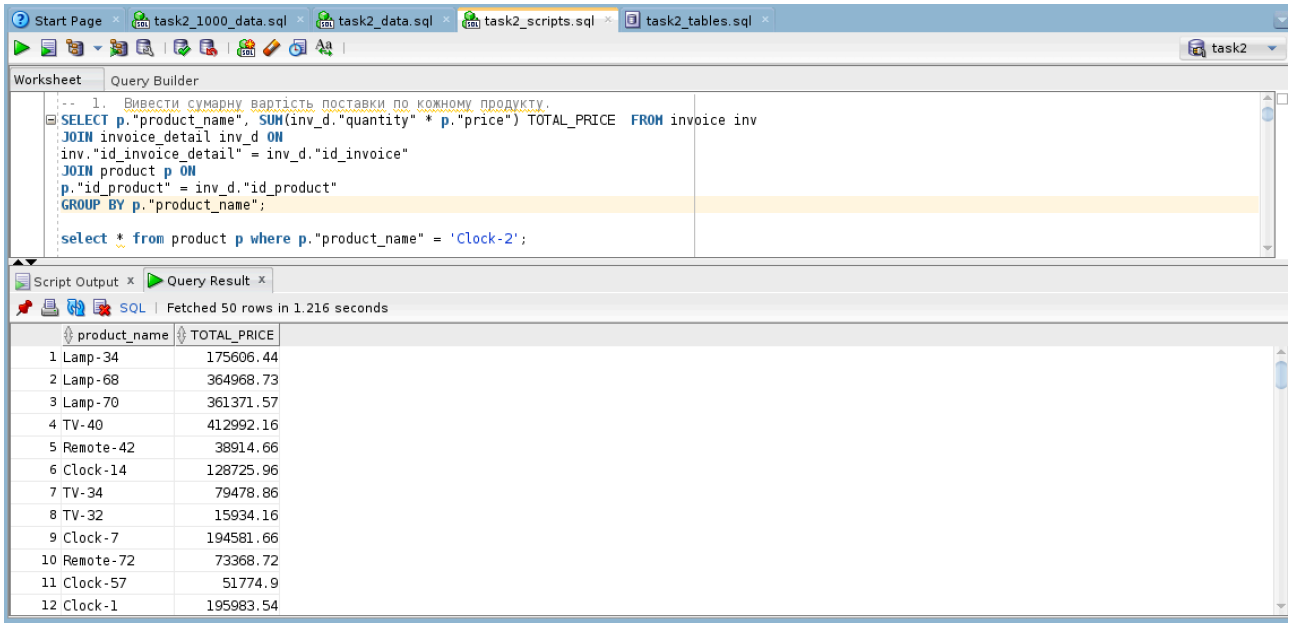
Модель бази даних:



Запити:

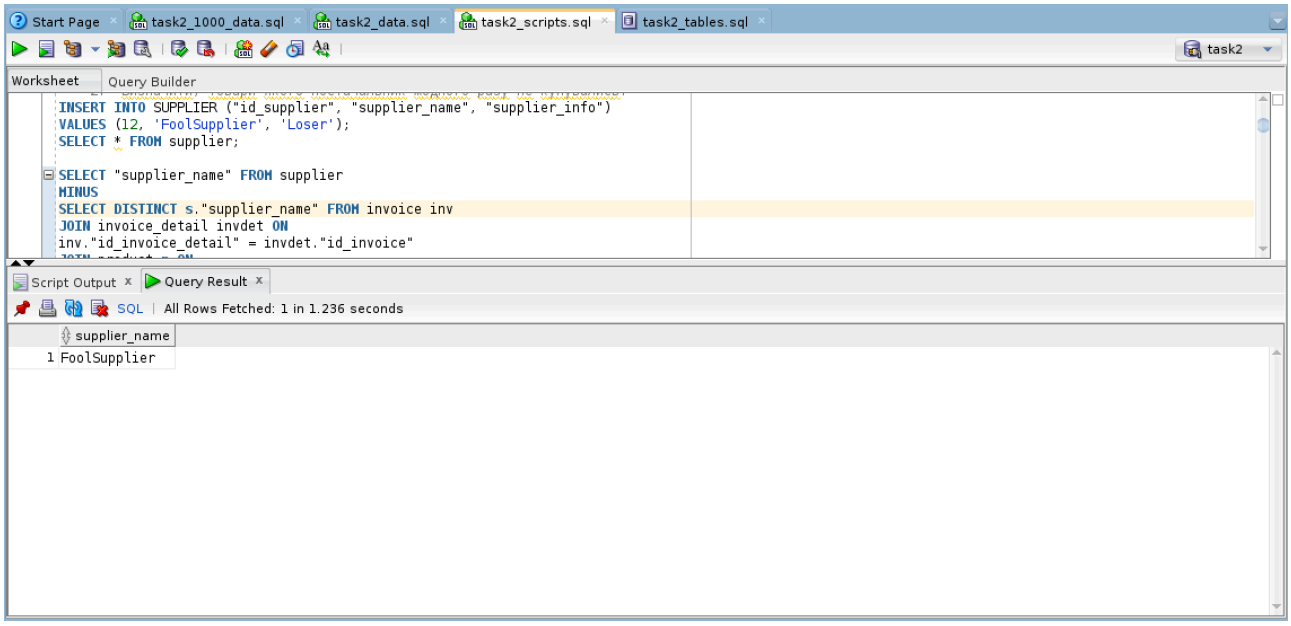
1. Вивести сумарну вартість поставки по кожному продукту.

```
SELECT p."product_name", SUM(inv_d."quantity" * p."price") TOTAL_PRICE  FROM
invoice inv
JOIN invoice_detail inv_d ON
inv."id_invoice_detail" = inv_d."id_invoice"
JOIN product p ON
p."id_product" = inv_d."id_product"
GROUP BY p."product_name";
```



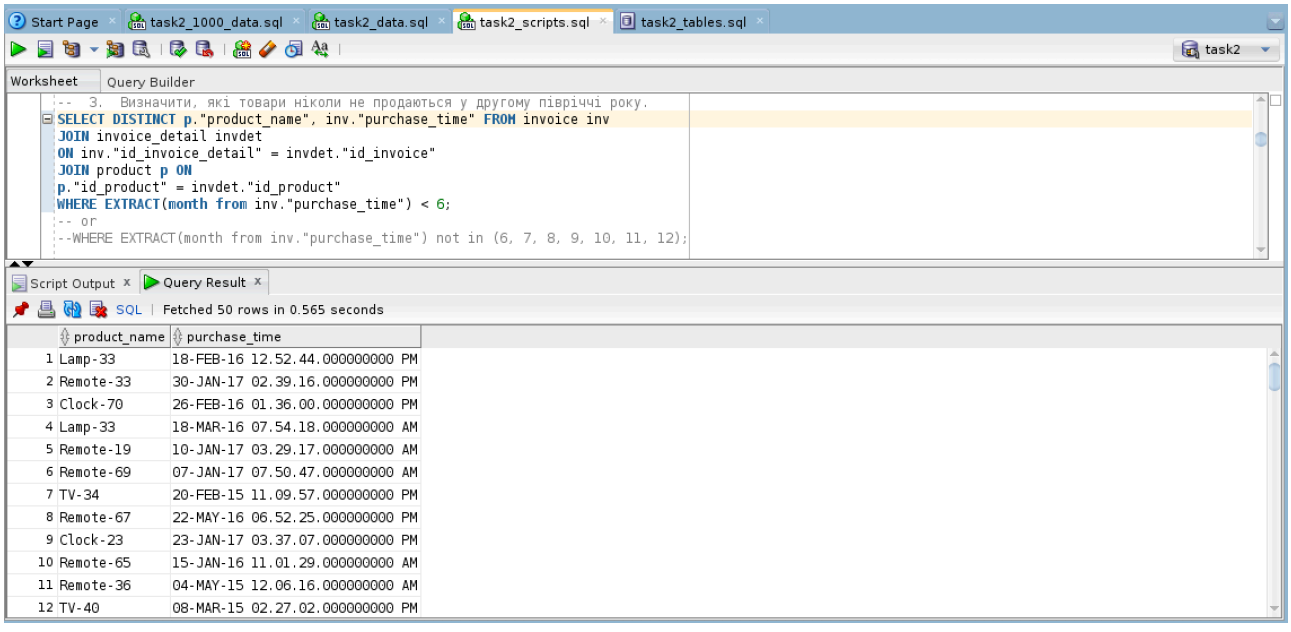
2. Визначити, товари якого постачальник жодного разу не купувались.

```
SELECT "supplier_name" FROM supplier
MINUS
SELECT DISTINCT s."supplier_name" FROM invoice inv
JOIN invoice_detail invdet ON
inv."id_invoice_detail" = invdet."id_invoice"
JOIN product p ON
p."id_product" = invdet."id_product"
JOIN supplier s ON
s."id_supplier" = p."id_supplier";
```



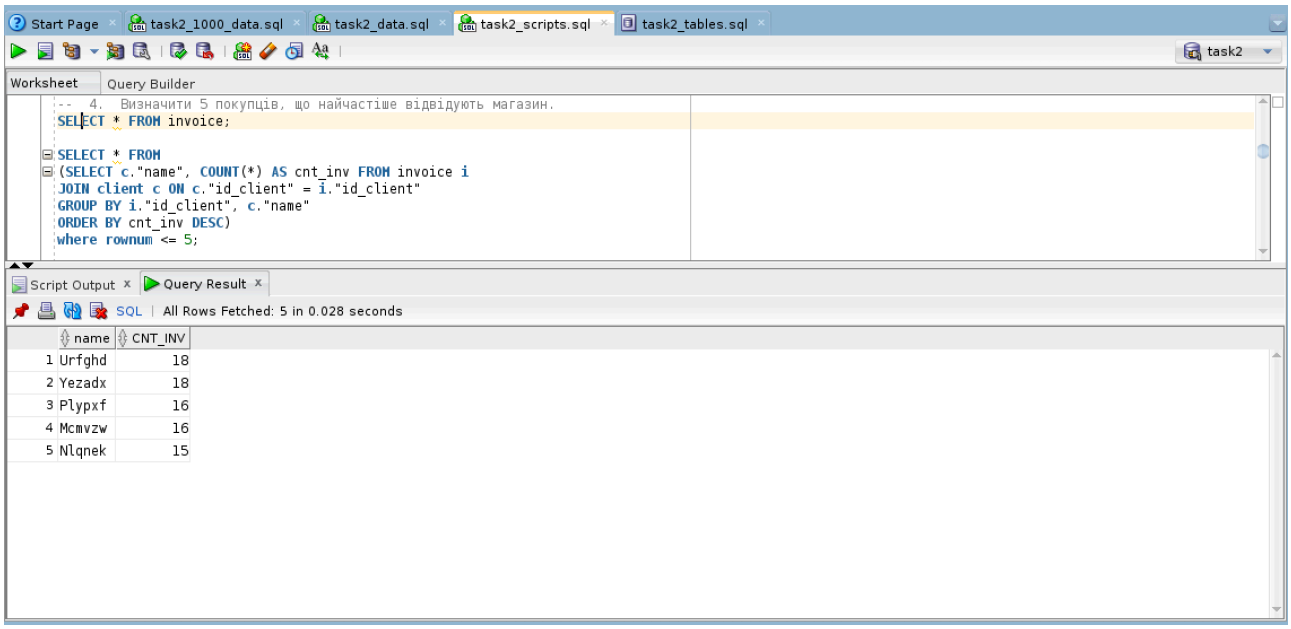
3. Визначити, які товари ніколи не продаються у другому півріччі року.

```
SELECT DISTINCT p."product_name", inv."purchase_time" FROM invoice inv
JOIN invoice_detail invdet
ON inv."id_invoice_detail" = invdet."id_invoice"
JOIN product p ON
p."id_product" = invdet."id_product"
WHERE EXTRACT(month from inv."purchase_time") < 6;
-- or
--WHERE EXTRACT(month from inv."purchase_time") not in (6, 7, 8, 9, 10, 11,
12);
```



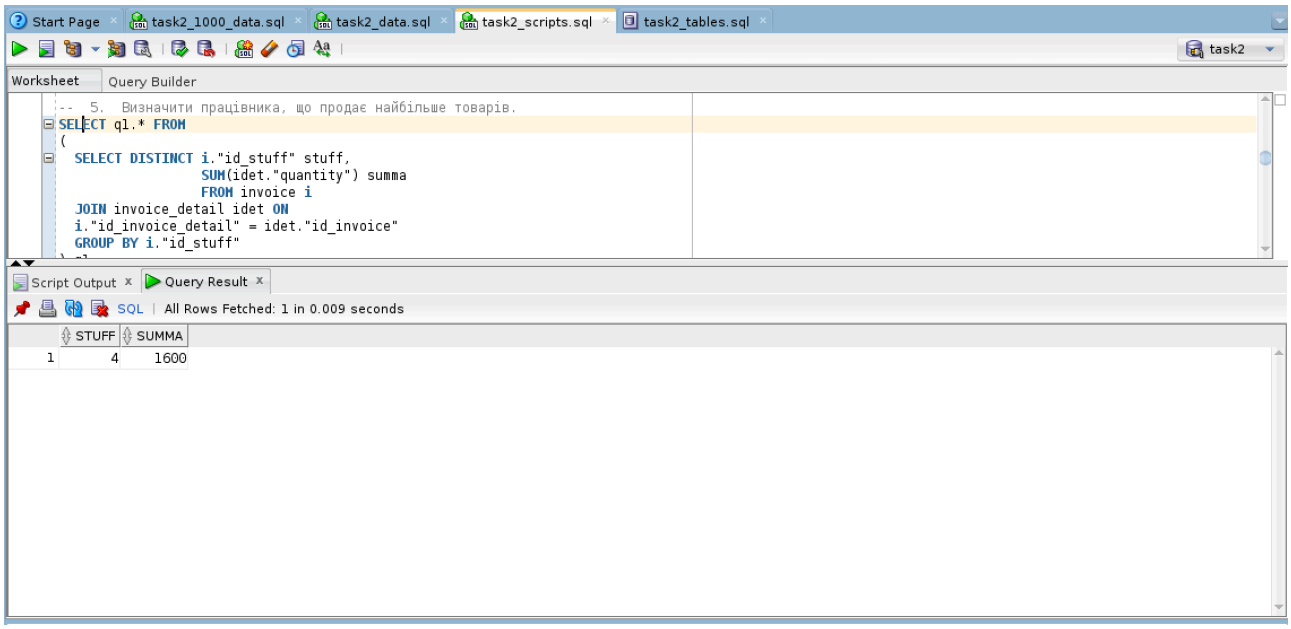
4. Визначити 5 покупців, що найчастіше відвідують магазин.

```
SELECT * FROM
(SELECT c."name", COUNT(*) AS cnt_inv FROM invoice i
JOIN client c ON c."id_client" = i."id_client"
GROUP BY i."id_client", c."name"
ORDER BY cnt_inv DESC)
where rownum <= 5;
```



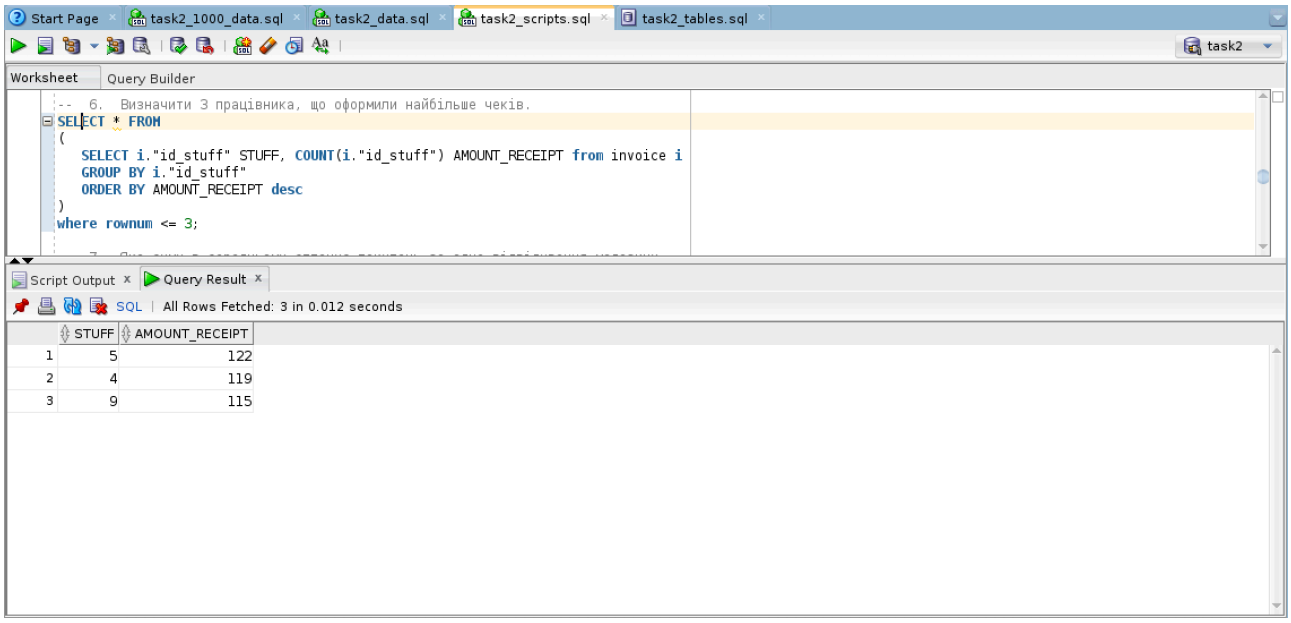
5. Визначити працівника, що продає найбільше товарів.

```
SELECT q1.* FROM
(
  SELECT DISTINCT i."id_stuff" stuff,
                  SUM(idet."quantity") summa
                  FROM invoice i
  JOIN invoice_detail idet ON
  i."id_invoice_detail" = idet."id_invoice"
  GROUP BY i."id_stuff"
) q1,
(
  SELECT MAX(q2.summa) max_quant FROM
  (
    SELECT DISTINCT i."id_stuff" stuff,
                    SUM(idet."quantity") summa
                    FROM invoice i
    JOIN invoice_detail idet ON
    i."id_invoice_detail" = idet."id_invoice"
    GROUP BY i."id_stuff"
  ) q2
) q3
WHERE q1.summa = q3.max_quant;
```



6. Визначити 3 працівника, що оформили найбільше чеків.

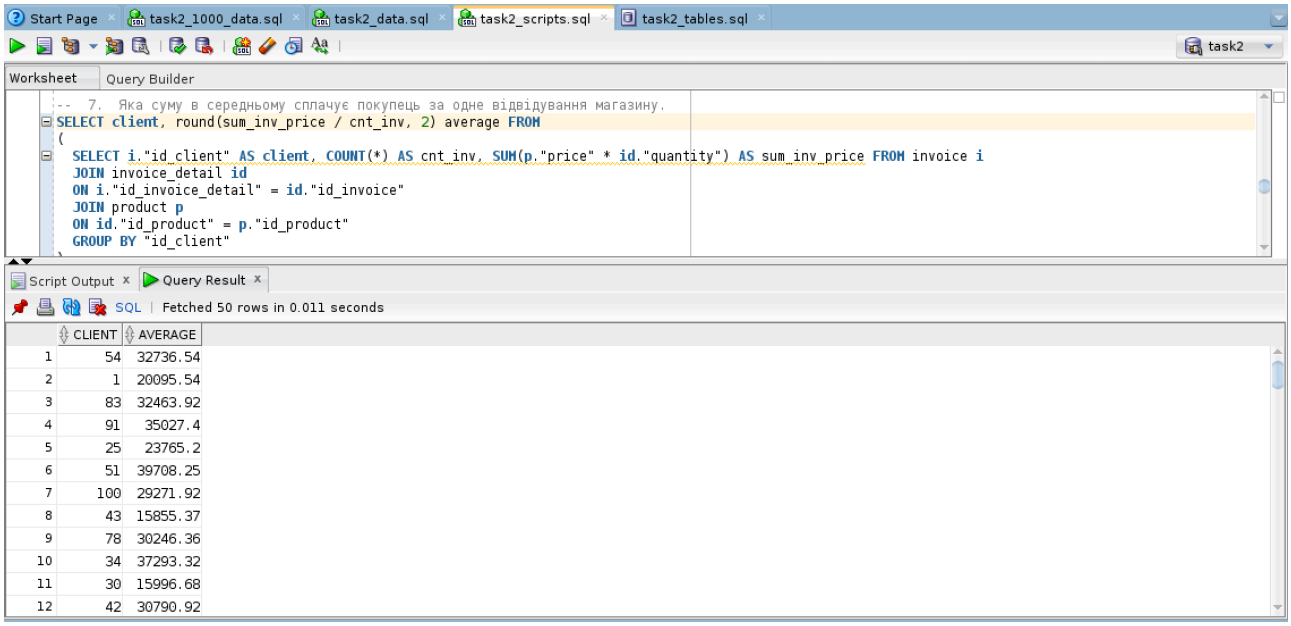
```
SELECT * FROM
(
    SELECT i."id_stuff" STUFF, COUNT(i."id_stuff") AMOUNT_RECEIPT from invoice
i
    GROUP BY i."id_stuff"
    ORDER BY AMOUNT_RECEIPT desc
)
WHERE rownum <= 3;
```



7. Яка суму в середньому сплачує покупець за одне відвідування магазину.

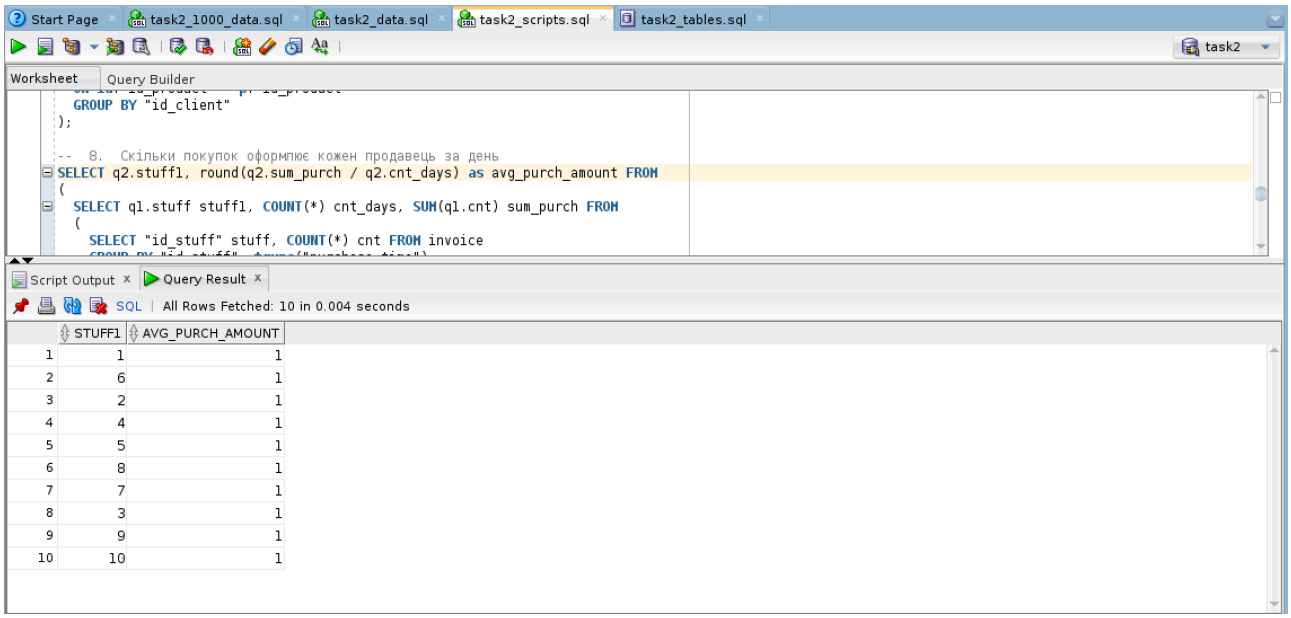
```
SELECT client, round(sum_inv_price / cnt_inv, 2) average FROM
(
  SELECT i."id_client" AS client, COUNT(*) AS cnt_inv, SUM(p."price" *
id."quantity") AS sum_inv_price FROM invoice i
  JOIN invoice_detail id
  ON i."id_invoice_detail" = id."id_invoice"
  JOIN product p
```

```
  ON id."id_product" = p."id_product"
  GROUP BY "id_client"
);
```



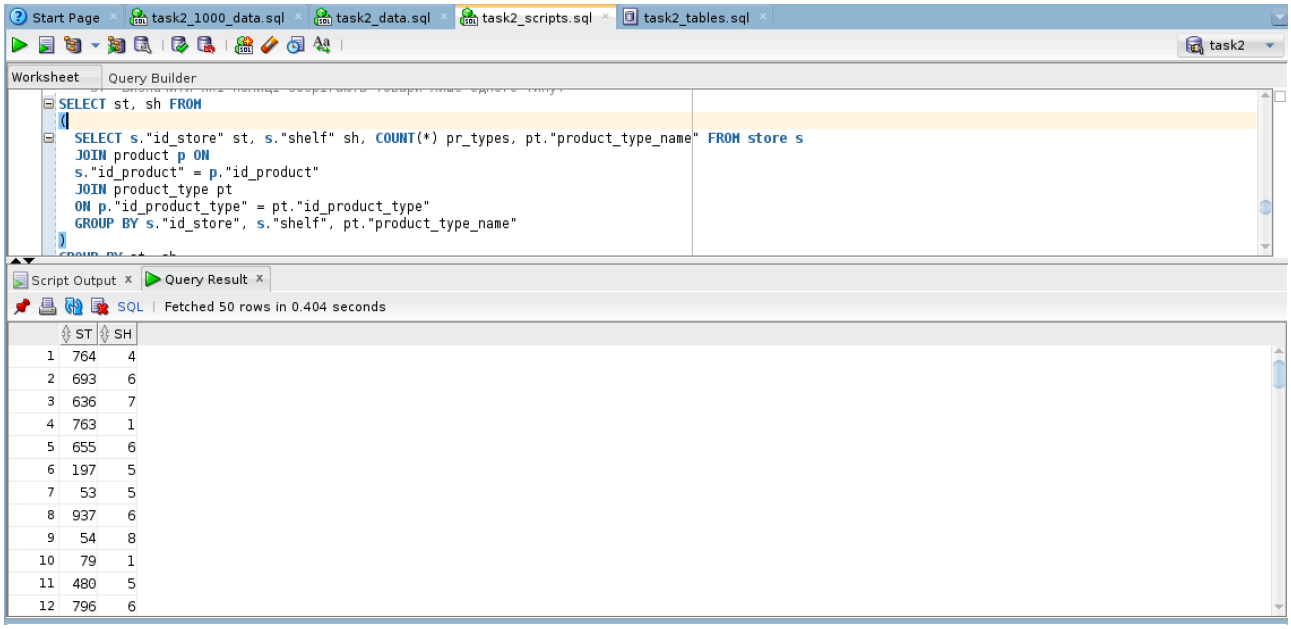
8. Скільки покупок оформлює кожен продавець за день.

```
SELECT q2.stuff1, round(q2.sum_purch / q2.cnt_days) as avg_purch_amount FROM
(
  SELECT q1.stuff stuff1, COUNT(*) cnt_days, SUM(q1.cnt) sum_purch FROM
  (
    SELECT "id_stuff" stuff, COUNT(*) cnt FROM invoice
    GROUP BY "id_stuff", trunc("purchase_time")
  ) q1
  GROUP BY q1.stuff
) q2;
```



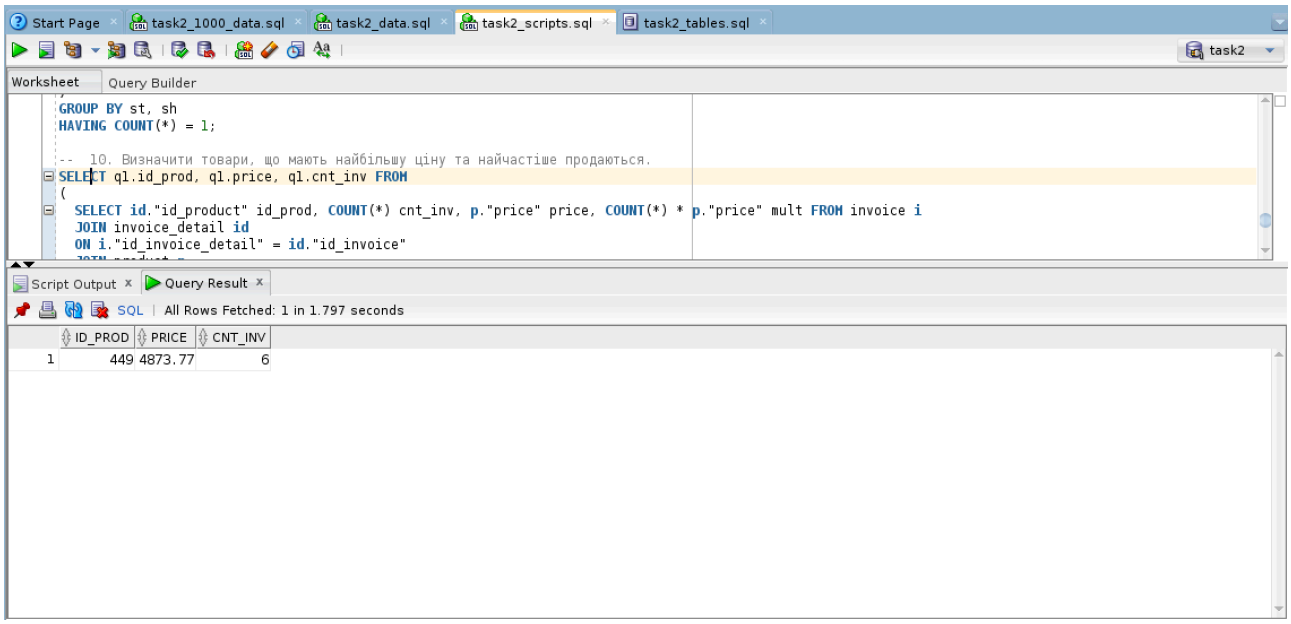
9. Визначити які полиці зберігають товари лише одного типу.

```
SELECT st, sh FROM
(
  SELECT s."id_store" st, s."shelf" sh, COUNT(*) pr_types,
pt."product_type_name" FROM store s
  JOIN product p ON
  s."id_product" = p."id_product"
  JOIN product_type pt
  ON p."id_product_type" = pt."id_product_type"
  GROUP BY s."id_store", s."shelf", pt."product_type_name"
)
GROUP BY st, sh
HAVING COUNT(*) = 1;
```



10. Визначити товари, що мають найбільшу ціну та найчастіше продаються.

```
SELECT q1.id_prod, q1.price, q1.cnt_inv FROM
(
  SELECT id."id_product" id_prod, COUNT(*) cnt_inv, p."price" price, COUNT(*)
* p."price" mult FROM invoice i
  JOIN invoice_detail id
  ON i."id_invoice_detail" = id."id_invoice"
  JOIN product p
  ON id."id_product" = p."id_product"
  GROUP by id."id_product", p."price"
  ORDER by price DESC, cnt_inv
) q1,
(
  SELECT MAX(q2.mult) max_mult FROM
  (
    SELECT id."id_product" id_prod, COUNT(*) cnt_inv, p."price" price,
COUNT(*) * p."price" mult FROM invoice i
    JOIN invoice_detail id
    ON i."id_invoice_detail" = id."id_invoice"
    JOIN product p
    ON id."id_product" = p."id_product"
    GROUP BY id."id_product", p."price"
  ) q2
) q3
WHERE q1.mult = q3.max_mult;
```



Додаткове завдання

```
SELECT * FROM (
    SELECT "id_client", purchases FROM (
        SELECT c."id_client", COUNT(*) as purchases FROM invoice i
        JOIN client c ON c."id_client" = i."id_client"
        GROUP BY i."id_client"
    )
    GROUP BY purchases, "id_client"
    HAVING purchases in (
        SELECT * FROM (
            SELECT purchases FROM (
                SELECT c."id_client", COUNT(*) as purchases FROM invoice i
                JOIN client c ON c."id_client" = i."id_client"
                GROUP BY i."id_client"
            )
            GROUP BY purchases
            ORDER BY purchases desc
        )
        WHERE rownum <= 5
    )
    ORDER BY purchases desc
```

```
) t2
JOIN client c2 ON c2."id_client" = t2.”id_client";
```