

Выполнил: Ковешников Д.А.

Весь код указан в конце.

Создание таблицы.

```
create table CUSTOMERS (  
C_ID number(4) NOT NULL,  
C_NAME varchar2(30) NOT NULL)  
;  
  
create table EMPLOYEES (  
E_ID number(4) NOT NULL,  
E_NAME varchar2(30) NOT NULL,  
E_CATEGORY varchar2(30) NOT NULL  
)  
;  
  
create table CHECKS (  
CH_ID number(4) NOT NULL,  
CH_ID_EMPLOYEE number(4) NOT NULL,  
CH_ID_CUSTOMER number(4) NOT NULL,  
CH_DATE date NOT NULL,  
AMOUNT number(10) NOT NULL  
)  
;  
  
create table PRODUCTS (  
P_ID number(4) NOT NULL,  
P_NAME varchar2(11) NOT NULL,  
P_PRICE number(10) NOT NULL  
)  
;  
  
create table PRODUCT_CHECK (  
ID_CHECK number(4) NOT NULL,  
ID_PRODUCT number(4) NOT NULL,  
NUMBER_CHECK number(10) NOT NULL  
)  
;  
  
INSERT ALL  
INTO CUSTOMERS (C_ID, C_NAME) VALUES (1, 'Sidorov')  
INTO CUSTOMERS (C_ID, C_NAME) VALUES (2, 'Goncharov')  
INTO CUSTOMERS (C_ID, C_NAME) VALUES (3, 'Ivanov')  
INTO CUSTOMERS (C_ID, C_NAME) VALUES (4, 'Popov')  
SELECT * FROM dual  
;  
  
INSERT ALL  
INTO EMPLOYEES (E_ID, E_NAME, E_CATEGORY) VALUES (101, 'Kononov', 'Junior')  
INTO EMPLOYEES (E_ID, E_NAME, E_CATEGORY) VALUES (102, 'Petrov', 'Middle')  
INTO EMPLOYEES (E_ID, E_NAME, E_CATEGORY) VALUES (103, 'Shipulin', 'Junior')  
INTO EMPLOYEES (E_ID, E_NAME, E_CATEGORY) VALUES (104, 'Golovin', 'Junior')  
INTO EMPLOYEES (E_ID, E_NAME, E_CATEGORY) VALUES (105, 'Titov', 'Senior')  
INTO EMPLOYEES (E_ID, E_NAME, E_CATEGORY) VALUES (106, 'Golikova', 'Team lead')  
SELECT * FROM DUAL  
;  
  
INSERT ALL  
INTO PRODUCTS (P_ID, P_NAME, P_PRICE) VALUES (1001, 'White bread', 50)  
INTO PRODUCTS (P_ID, P_NAME, P_PRICE) VALUES (1002, 'Black bread', 44)  
INTO PRODUCTS (P_ID, P_NAME, P_PRICE) VALUES (1003, 'Tea', 100)  
INTO PRODUCTS (P_ID, P_NAME, P_PRICE) VALUES (1004, 'Sugar', 70)  
INTO PRODUCTS (P_ID, P_NAME, P_PRICE) VALUES (1005, 'Salt', 10)  
SELECT * FROM DUAL  
;  
  
INSERT ALL  
INTO PRODUCT_CHECK (ID_CHECK, ID_PRODUCT, NUMBER_CHECK) VALUES (1, 1001, 2)  
INTO PRODUCT_CHECK (ID_CHECK, ID_PRODUCT, NUMBER_CHECK) VALUES (1, 1005, 1)
```

```

INTO PRODUCT_CHECK (ID_CHECK, ID_PRODUCT, NUMBER_CHECK) VALUES (1, 1004, 5)
INTO PRODUCT_CHECK (ID_CHECK, ID_PRODUCT, NUMBER_CHECK) VALUES (2, 1002, 1)
INTO PRODUCT_CHECK (ID_CHECK, ID_PRODUCT, NUMBER_CHECK) VALUES (3, 1003, 10)
INTO PRODUCT_CHECK (ID_CHECK, ID_PRODUCT, NUMBER_CHECK) VALUES (3, 1004, 4)
INTO PRODUCT_CHECK (ID_CHECK, ID_PRODUCT, NUMBER_CHECK) VALUES (3, 1001, 1)
INTO PRODUCT_CHECK (ID_CHECK, ID_PRODUCT, NUMBER_CHECK) VALUES (4, 1002, 3)
INTO PRODUCT_CHECK (ID_CHECK, ID_PRODUCT, NUMBER_CHECK) VALUES (5, 1004, 2)
INTO PRODUCT_CHECK (ID_CHECK, ID_PRODUCT, NUMBER_CHECK) VALUES (6, 1001, 1)
INTO PRODUCT_CHECK (ID_CHECK, ID_PRODUCT, NUMBER_CHECK) VALUES (6, 1002, 1)
SELECT * FROM DUAL
;

INSERT ALL
INTO CHECKS (CH_ID, CH_ID_EMPLOYEE, CH_ID_CUSTOMER, CH_DATE, AMOUNT) VALUES (1, 102, 1, to_date
('01.04.2021', 'dd.mm.yyyy'), 460)
INTO CHECKS (CH_ID, CH_ID_EMPLOYEE, CH_ID_CUSTOMER, CH_DATE, AMOUNT) VALUES (2, 104, 2, to_date
('01.04.2021', 'dd.mm.yyyy'), 44)
INTO CHECKS (CH_ID, CH_ID_EMPLOYEE, CH_ID_CUSTOMER, CH_DATE, AMOUNT) VALUES (3, 105, 3, to_date
('02.04.2021', 'dd.mm.yyyy'), 1330)
INTO CHECKS (CH_ID, CH_ID_EMPLOYEE, CH_ID_CUSTOMER, CH_DATE, AMOUNT) VALUES (4, 106, 2, to_date
('03.04.2021', 'dd.mm.yyyy'), 132)
INTO CHECKS (CH_ID, CH_ID_EMPLOYEE, CH_ID_CUSTOMER, CH_DATE, AMOUNT) VALUES (5, 101, 4, to_date
('03.04.2021', 'dd.mm.yyyy'), 140)
INTO CHECKS (CH_ID, CH_ID_EMPLOYEE, CH_ID_CUSTOMER, CH_DATE, AMOUNT) VALUES (6, 104, 1, to_date
('04.04.2021', 'dd.mm.yyyy'), 94)
SELECT * FROM dual
```

Селекты

```

1. SELECT e_name FROM employees
WHERE e_name LIKE '%o_'
```

SELECT e_name FROM employees
WHERE e_name LIKE '%o_'

E_NAME
Kononov
Petrov
Titov

[Download CSV](#)
3 rows selected.

```

2. SELECT P_NAME FROM PRODUCTS
WHERE P_NAME NOT LIKE '_' AND P_NAME NOT LIKE '__' AND P_NAME LIKE '%e%'
```

SELECT P_NAME FROM PRODUCTS
WHERE P_NAME NOT LIKE '_' AND P_NAME NOT LIKE '__' AND P_NAME LIKE '%e%'

P_NAME
White bread
Black bread
Tea

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```

3. SELECT employees.e_name, products.p_name, product_check.id_check, product_check.id_product,
employees.e_id, product_check.number_check
FROM checks, employees, products, product_check
WHERE employees.e_id = checks.ch_id_employee and employees.e_name like 'Titov' and products.p_id =
product_check.id_product and employees.e_id = checks.ch_id_employee and product_check.id_check = checks.ch_id
```

SELECT employees.e_name, products.p_name, product_check.id_check, product_check.id_pro
FROM checks, employees, products, product_check
WHERE employees.e_id = checks.ch_id_employee and employees.e_name like 'Titov' and pro

E_NAME	P_NAME	ID_CHECK	ID_PRODUCT	E_ID	NUMBER_CHECK
Titov	Tea	3	1003	105	10
Titov	Sugar	3	1004	105	4
Titov	White bread	3	1001	105	1

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```

4. SELECT customers.c_name, MIN(checks.amount)
```

```
FROM customers, checks
WHERE customers.c_id = checks.ch_id_customer
GROUP BY checks.amount, customers.c_name
HAVING MIN (amount) = (SELECT min (amount)
                        FROM checks)
```

```
SELECT customers.c_name, MIN(checks.amount)
FROM customers, checks
WHERE customers.c_id = checks.ch_id_customer
GROUP BY checks.amount, customers.c_name
HAVING MIN (amount) = (SELECT min (amount)
                        FROM checks)
```

C_NAME	MIN(CHECKS.AMOUNT)
Goncharov	44

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5. `SELECT product_check.id_check`
`FROM checks, products, product_check`
`WHERE products.p_id = product_check.id_product and products.p_name like '%Sugar%'`
`GROUP BY product_check.id_check`

```
SELECT product_check.id_check
FROM checks, products, product_check
WHERE products.p_id = product_check.id_product and products.p_name like '%Sugar%'
GROUP BY product_check.id_check
```

ID_CHECK
1
5
3

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3 rows selected.

6. `SELECT products.p_name, MAX(product_check.number_check)`
`FROM products, product_check`
`WHERE products.p_id = product_check.id_product`
`GROUP BY products.p_name, product_check.number_check`
`HAVING MAX (number_check) = (SELECT max (number_check)`
`FROM product_check)`

```
SELECT products.p_name, MAX(product_check.number_check)
FROM products, product_check
WHERE products.p_id = product_check.id_product
GROUP BY products.p_name, product_check.number_check
HAVING MAX (number_check) = (SELECT max (number_check)
                              FROM product_check)
```

P_NAME	MAX(PRODUCT_CHECK.NUMBER_CHECK)
Tea	10

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7. `SELECT MIN(product_check.id_check) AS ID_CHECK, products.p_name`
`FROM products, product_check`
`WHERE products.p_id = product_check.id_product and products.p_name like '%Sugar%'`
`GROUP BY products.p_name, product_check.id_check`
`HAVING MAX (id_check) = (SELECT min (id_check)`
`FROM product_check)`

```
SELECT MIN(product_check.id_check) AS ID_CHECK, products.p_name
FROM products, product_check
WHERE products.p_id = product_check.id_product and products.p_name like '%Sugar%'
GROUP BY products.p_name, product_check.id_check
HAVING MAX (id_check) = (SELECT min (id_check)
                          FROM product_check)
```

ID_CHECK	P_NAME
1	Sugar

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8. `SELECT employees.e_name, products.p_name`

```

FROM employees, checks, products, product_check
WHERE employees.e_id = checks.ch_id_employee and products.p_id = product_check.id_product and product_check.id_check =
checks.ch_id and products.p_name LIKE '%bread%' and product_check.number_check <> (SELECT min(product_check.number_check)
FROM product_check, products WHERE products.p_id = product_check.id_product and products.p_name LIKE '%bread%')

```

Statement

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```

SELECT employees.e_name, products.p_name
FROM employees, checks, products, product_check
WHERE employees.e_id = checks.ch_id_employee and products.p_id = product_check.id_pi

```

E_NAME	P_NAME
Petrov	White bread
Golikova	Black bread

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2 rows selected.

9. SELECT employees.e_name, MAX(checks.amount)
FROM employees, products, product_check, checks

```

WHERE employees.e_id = checks.ch_id_employee
GROUP BY employees.e_name, checks.amount
HAVING MAX (checks.amount) = (SELECT max (checks.amount)
FROM checks)

```

```

SELECT employees.e_name, MAX(checks.amount)
FROM employees, products, product_check, checks
WHERE employees.e_id = checks.ch_id_employee
GROUP BY employees.e_name, checks.amount
HAVING MAX (checks.amount) = (SELECT max (checks.amount)
FROM checks)

```

E_NAME	MAX(CHECKS.AMOUNT)
Titov	1330

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10. SELECT SUM(product_check.number_check*products.p_price), product_check.id_check
FROM product_check, products
WHERE products.p_id = product_check.id_product and product_check.id_check like '%1%'
GROUP BY product_check.id_check

Statement

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```

SELECT SUM(product_check.number_check*products.p_price), product_check.id_check
FROM product_check, products
WHERE products.p_id = product_check.id_product and product_check.id_check like '%1%'
GROUP BY product_check.id_check

```

SUM(PRODUCT_CHECK.NUMBER_CHECK*PRODUCTS.P_PRICE)	ID_CHECK
460	1

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11. SELECT employees.e_name
FROM employees, checks
WHERE employees.e_id = checks.ch_id_employee and employees.e_category like '%Junior%' and checks.amount >
(SELECT max (checks.amount)
FROM checks, employees WHERE employees.e_id = checks.ch_id_employee and
employees.e_category like '%lead%')

Statement 20	<pre>SELECT employees.e_name FROM employees, checks WHERE employees.e_id = checks.ch_id_employee and employees.e_category like '%Junior%' FROM checks, employees WHERE employees.e_id = checks.ch_id_emp</pre> <table><tr><th>E_NAME</th></tr><tr><td>Kononov</td></tr></table> Download CSV	E_NAME	Kononov
E_NAME			
Kononov			
Statement			

12. SELECT customers.c_name, products.p_name, product_check.id_check, product_check.id_product,
product_check.number_check
FROM checks, customers, products, product_check
WHERE customers.c_id = checks.ch_id_customer and customers.c_name like 'Sidorov' and products.p_id =
product_check.id_product and customers.c_id = checks.ch_id_customer and product_check.id_check = checks.ch_id

SELECT customers.c_name, products.p_name, product_check.id_check, product_check.id_pro
FROM checks, customers, products, product_check
WHERE customers.c_id = checks.ch_id_customer and customers.c_name like 'Sidorov' and p

C_NAME	P_NAME	ID_CHECK	ID_PRODUCT	NUMBER_CHECK
Sidorov	White bread	1	1001	2
Sidorov	White bread	6	1001	1
Sidorov	Black bread	6	1002	1
Sidorov	Sugar	1	1004	5
Sidorov	Salt	1	1005	1

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5 rows selected.