

Курсова работа №1

по Проектиране и администриране на бази данни

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Класно отделение: 12282

Факултетен номер: 111-7419

Задание:

Да се проектира и реализира БД за склад за ел. уреди, която да поддържа данни за:

- ✓ Категории стоки – код на категория, описание.
- ✓ Уреди – код на уред от категория, описание, ед. цена.
- ✓ Клиенти – номер, име, фамилия на клиент, ЕГН.
- ✓ Поръчки – номер на поръчка за клиент, дата.
- ✓ Детайли на поръчката – включва няколко уреда за поръчка, брой.

Да се изведе справка за номер на клиент, име, фамилия на клиент, ЕГН, номер на поръчка за клиента, дата на поръчката, код на уред, описание, ед. цена; брой, сумата за уредите, код на категория, описание. Подредба по номер на клиент.

1. Конекция като sysdba и създаване на нов потребител - petar

New / Select Database Connection

Connection Name	Connection Details
hr	hr@//localhost:1...
sysdba	sys@//localhost:...

Name: sysdba

Database Type: Oracle

User Info: Proxy User

Authentication Type: Default

Username: sys

Password: ...

Role: SYSDBA

Save Password: ☐

Connection Type: Basic

Details: Advanced

Hostname: localhost

Port: 1521

☒ SID: xe

☐ Service name:

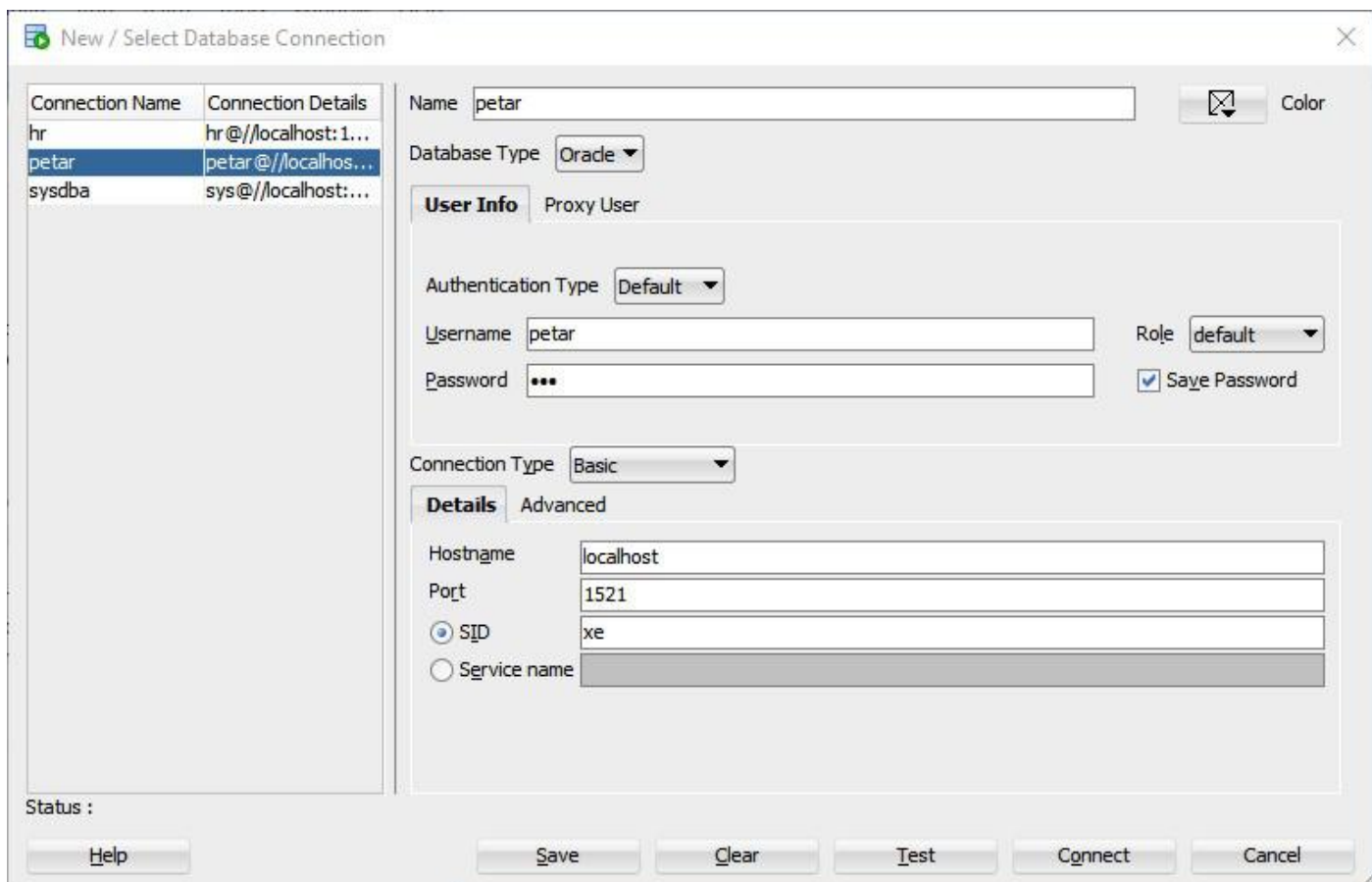
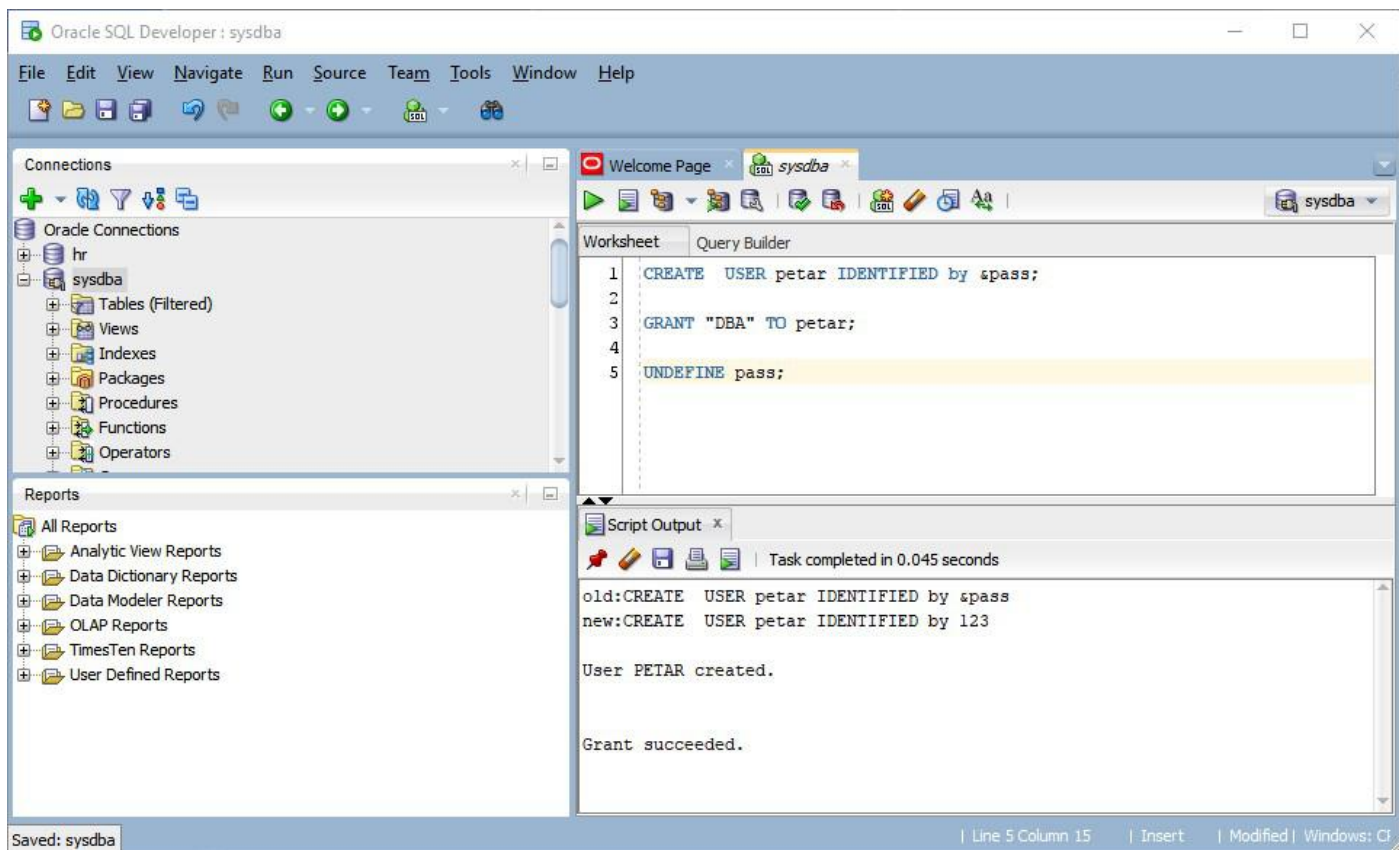
Status : Success

Buttons: Help, Save, Clear, Test, Connect, Cancel

```
CREATE USER petar IDENTIFIED by &pass;
```

```
GRANT "DBA" TO petar;
```

```
UNDEFINE pass;
```



2. Създаване на таблиците

```
CREATE TABLE PROD_CATEGORIES
(
  CAT_ID NUMBER,
  CAT_DESCR VARCHAR2(30) NOT NULL,

  CONSTRAINT PK_PRODCAT_CID PRIMARY KEY (CAT_ID)
);
```

```
CREATE TABLE PRODUCTS
(
  PROD_ID NUMBER,
  CAT_ID NUMBER NOT NULL,
  PROD_DESCR VARCHAR(30) NOT NULL,
  PROD_PRICE NUMBER(8,2) NOT NULL,

  CONSTRAINT PK_PRODS_PID
    PRIMARY KEY (PROD_ID),
  CONSTRAINT FK_PRODS_CID_PRODCAT_CID
    FOREIGN KEY (CAT_ID)
      REFERENCES PROD_CATEGORIES(CAT_ID)
);
```

```
CREATE TABLE CLIENTS
(
  CLIENT_ID NUMBER,
  CLIENT_FIRST_NAME VARCHAR2(20) NOT NULL,
  CLIENT_LAST_NAME VARCHAR2(20) NOT NULL,
  CLIENT_UCN CHAR(10),

  CONSTRAINT PK_CLNTS_CLID
    PRIMARY KEY (CLIENT_ID)
);
```

```
CREATE TABLE ORDERS
(
  ORDER_ID NUMBER,
  CLIENT_ID NUMBER NOT NULL,
  ORDER_DATE DATE NOT NULL,

  CONSTRAINT PK_ORDRS_OID
    PRIMARY KEY (ORDER_ID),
  CONSTRAINT FK_ORDRS_OID_CLNTS_CLID
    FOREIGN KEY (CLIENT_ID)
      REFERENCES CLIENTS(CLIENT_ID)
);
```

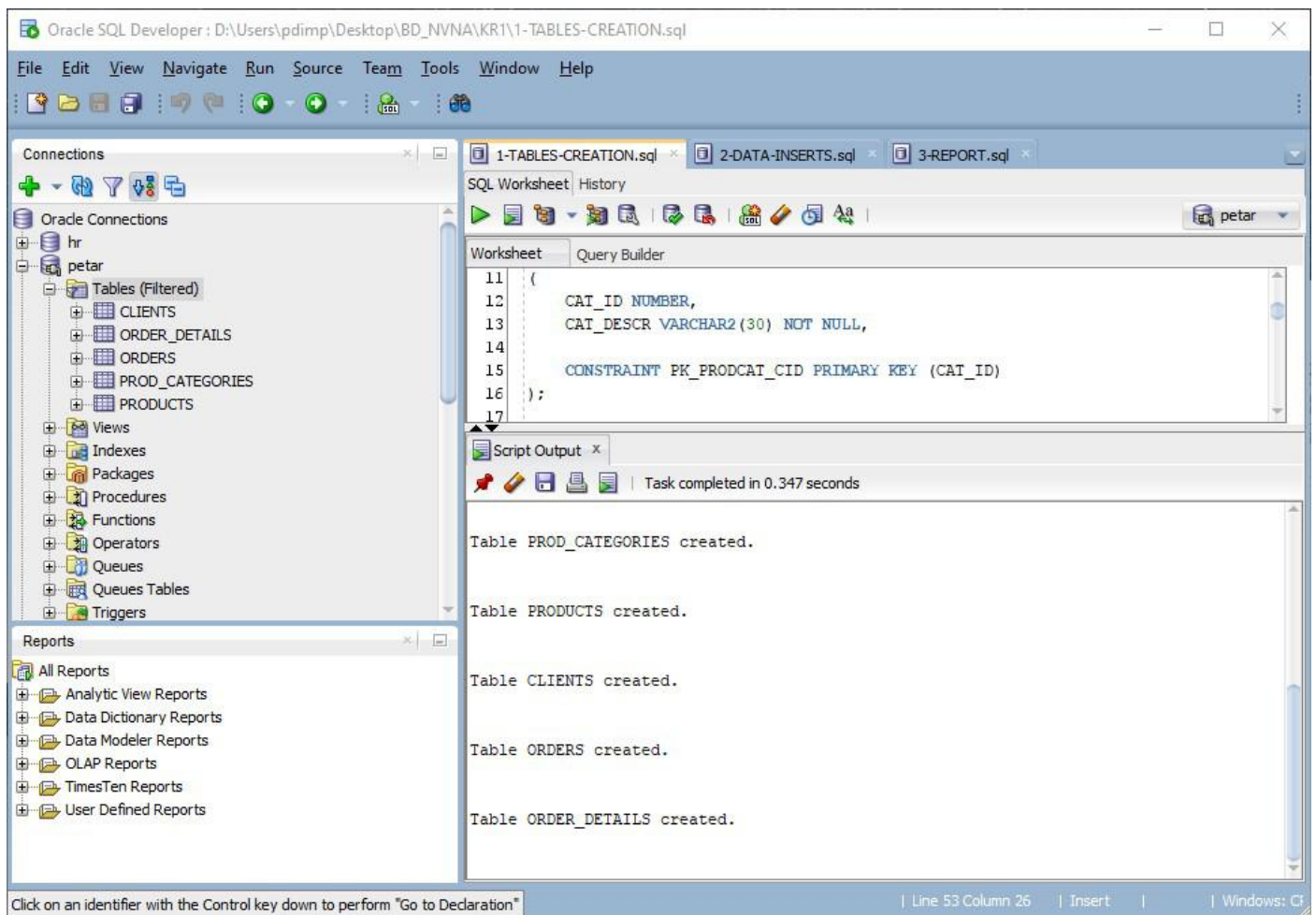
```
CREATE TABLE ORDER_DETAILS
(
  ORDER_ID NUMBER NOT NULL,
  PROD_ID NUMBER NOT NULL,
  PROD_COUNT NUMBER NOT NULL,

  CONSTRAINT FK_ORDRDET_OID_ORDRS_OID
    FOREIGN KEY (ORDER_ID)
      REFERENCES ORDERS(ORDER_ID),
```

```

CONSTRAINT FK_ORDRDET_PID_PRODS_PID
FOREIGN KEY (PROD_ID)
REFERENCES PRODUCTS(PROD_ID)
);

```



3. Вмъкване на данни в таблиците

INSERT ALL

```

INTO PROD_CATEGORIES (cat_id, cat_descr) VALUES (100, 'Phones')
INTO PROD_CATEGORIES (cat_id, cat_descr) VALUES (200, 'Notebooks')
INTO PROD_CATEGORIES (cat_id, cat_descr) VALUES (300, 'Tablets')
INTO PROD_CATEGORIES (cat_id, cat_descr) VALUES (400, 'Drones')
INTO PROD_CATEGORIES (cat_id, cat_descr) VALUES (500, 'Kitchen supplies')
INTO PROD_CATEGORIES (cat_id, cat_descr) VALUES (600, 'Garden supplies')

```

SELECT * FROM dual;

INSERT ALL

```

INTO PRODUCTS (PROD_ID, CAT_ID, PROD_DESCR, PROD_PRICE) VALUES (106, 100, 'Kids phone 4S', 19.99)
INTO PRODUCTS (PROD_ID, CAT_ID, PROD_DESCR, PROD_PRICE) VALUES (107, 100, 'Gaming phone 12XS+', 2499.99)
INTO PRODUCTS (PROD_ID, CAT_ID, PROD_DESCR, PROD_PRICE) VALUES (108, 100, 'Work phone 10', 149.99)
INTO PRODUCTS (PROD_ID, CAT_ID, PROD_DESCR, PROD_PRICE) VALUES (109, 100, 'Home phone 3G', 9.99)
INTO PRODUCTS (PROD_ID, CAT_ID, PROD_DESCR, PROD_PRICE) VALUES (110, 100, 'Brick 1', 9.99)

INTO PRODUCTS (PROD_ID, CAT_ID, PROD_DESCR, PROD_PRICE) VALUES (211, 200, 'Mega Note', 1499.99)
INTO PRODUCTS (PROD_ID, CAT_ID, PROD_DESCR, PROD_PRICE) VALUES (212, 200, 'Noted One', 1999.99)
INTO PRODUCTS (PROD_ID, CAT_ID, PROD_DESCR, PROD_PRICE) VALUES (213, 200, 'Brick Mega Gaming 3', 9999.99)

```

```

    INTO PRODUCTS (PROD_ID, CAT_ID, PROD_DESCR, PROD_PRICE) VALUES (214, 200, 'Gaming Pro 10',
4999.99)
    INTO PRODUCTS (PROD_ID, CAT_ID, PROD_DESCR, PROD_PRICE) VALUES (215, 200, 'WorkBook 12',
1479.99)

    INTO PRODUCTS (PROD_ID, CAT_ID, PROD_DESCR, PROD_PRICE) VALUES (301, 300, 'Kiddy Tab 2', 49.99)
    INTO PRODUCTS (PROD_ID, CAT_ID, PROD_DESCR, PROD_PRICE) VALUES (302, 300, 'Worker Pro', 149.99)
    INTO PRODUCTS (PROD_ID, CAT_ID, PROD_DESCR, PROD_PRICE) VALUES (303, 300, 'Gamers Wish', 349.99)
    INTO PRODUCTS (PROD_ID, CAT_ID, PROD_DESCR, PROD_PRICE) VALUES (304, 300, 'WorkingTab 3',
299.99)
    INTO PRODUCTS (PROD_ID, CAT_ID, PROD_DESCR, PROD_PRICE) VALUES (305, 300, 'HomeTabby', 199.99)

    INTO PRODUCTS (PROD_ID, CAT_ID, PROD_DESCR, PROD_PRICE) VALUES (436, 400, 'Military Drone 10',
1999.99)
    INTO PRODUCTS (PROD_ID, CAT_ID, PROD_DESCR, PROD_PRICE) VALUES (437, 400, 'Medical Drone Pro
Health', 2999.99)
    INTO PRODUCTS (PROD_ID, CAT_ID, PROD_DESCR, PROD_PRICE) VALUES (438, 400, 'Spying Drone 2',
199.99)

    INTO PRODUCTS (PROD_ID, CAT_ID, PROD_DESCR, PROD_PRICE) VALUES (501, 500, 'Blender', 49.99)
    INTO PRODUCTS (PROD_ID, CAT_ID, PROD_DESCR, PROD_PRICE) VALUES (502, 500, 'Toaster', 21.99)
    INTO PRODUCTS (PROD_ID, CAT_ID, PROD_DESCR, PROD_PRICE) VALUES (503, 500, 'Microwave', 149.99)
    INTO PRODUCTS (PROD_ID, CAT_ID, PROD_DESCR, PROD_PRICE) VALUES (504, 500, 'Juicer', 69.99)
    INTO PRODUCTS (PROD_ID, CAT_ID, PROD_DESCR, PROD_PRICE) VALUES (505, 500, 'Coffe grinder', 36.99)
SELECT * FROM dual;

INSERT ALL
    INTO CLIENTS (CLIENT_ID, CLIENT_FIRST_NAME, CLIENT_LAST_NAME, CLIENT_UCN) VALUES (1001,
'Ivan', 'Ivanov', '1524023512')
    INTO CLIENTS (CLIENT_ID, CLIENT_FIRST_NAME, CLIENT_LAST_NAME, CLIENT_UCN) VALUES (1002,
'Ivanka', 'Ivanova', '1525623512')
    INTO CLIENTS (CLIENT_ID, CLIENT_FIRST_NAME, CLIENT_LAST_NAME, CLIENT_UCN) VALUES (1003,
'Vanio', 'Ivanovich', '1524468512')
    INTO CLIENTS (CLIENT_ID, CLIENT_FIRST_NAME, CLIENT_LAST_NAME, CLIENT_UCN) VALUES (1004,
'Venci', 'Venciev', '7584652310')
    INTO CLIENTS (CLIENT_ID, CLIENT_FIRST_NAME, CLIENT_LAST_NAME, CLIENT_UCN) VALUES (1005,
'Pesho', 'Peshov', '7526213252')
    INTO CLIENTS (CLIENT_ID, CLIENT_FIRST_NAME, CLIENT_LAST_NAME, CLIENT_UCN) VALUES (1006,
'Gosho', 'Goshev', '7563125262')
SELECT * FROM dual;

INSERT ALL
    INTO ORDERS (ORDER_ID, CLIENT_ID, ORDER_DATE) VALUES (5168, 1001, '31-may-98')
    INTO ORDERS (ORDER_ID, CLIENT_ID, ORDER_DATE) VALUES (5615, 1001, '2-may-98')
    INTO ORDERS (ORDER_ID, CLIENT_ID, ORDER_DATE) VALUES (8456, 1003, '1-may-99')
    INTO ORDERS (ORDER_ID, CLIENT_ID, ORDER_DATE) VALUES (8452, 1005, '4-may-00')
    INTO ORDERS (ORDER_ID, CLIENT_ID, ORDER_DATE) VALUES (7897, 1003, '21-may-11')
    INTO ORDERS (ORDER_ID, CLIENT_ID, ORDER_DATE) VALUES (1567, 1004, '11-may-20')
    INTO ORDERS (ORDER_ID, CLIENT_ID, ORDER_DATE) VALUES (1256, 1002, '23-may-85')
    INTO ORDERS (ORDER_ID, CLIENT_ID, ORDER_DATE) VALUES (5631, 1002, '16-may-98')
    INTO ORDERS (ORDER_ID, CLIENT_ID, ORDER_DATE) VALUES (9542, 1006, '17-may-98')
SELECT * FROM dual;

INSERT ALL
    INTO ORDER_DETAILS (ORDER_ID, PROD_ID, PROD_COUNT) VALUES (5168, 437, 10)
    INTO ORDER_DETAILS (ORDER_ID, PROD_ID, PROD_COUNT) VALUES (5615, 215, 14)
    INTO ORDER_DETAILS (ORDER_ID, PROD_ID, PROD_COUNT) VALUES (8456, 501, 1)
    INTO ORDER_DETAILS (ORDER_ID, PROD_ID, PROD_COUNT) VALUES (8452, 107, 3)
    INTO ORDER_DETAILS (ORDER_ID, PROD_ID, PROD_COUNT) VALUES (7897, 436, 110)
    INTO ORDER_DETAILS (ORDER_ID, PROD_ID, PROD_COUNT) VALUES (1567, 502, 2)
    INTO ORDER_DETAILS (ORDER_ID, PROD_ID, PROD_COUNT) VALUES (1256, 305, 2)

```

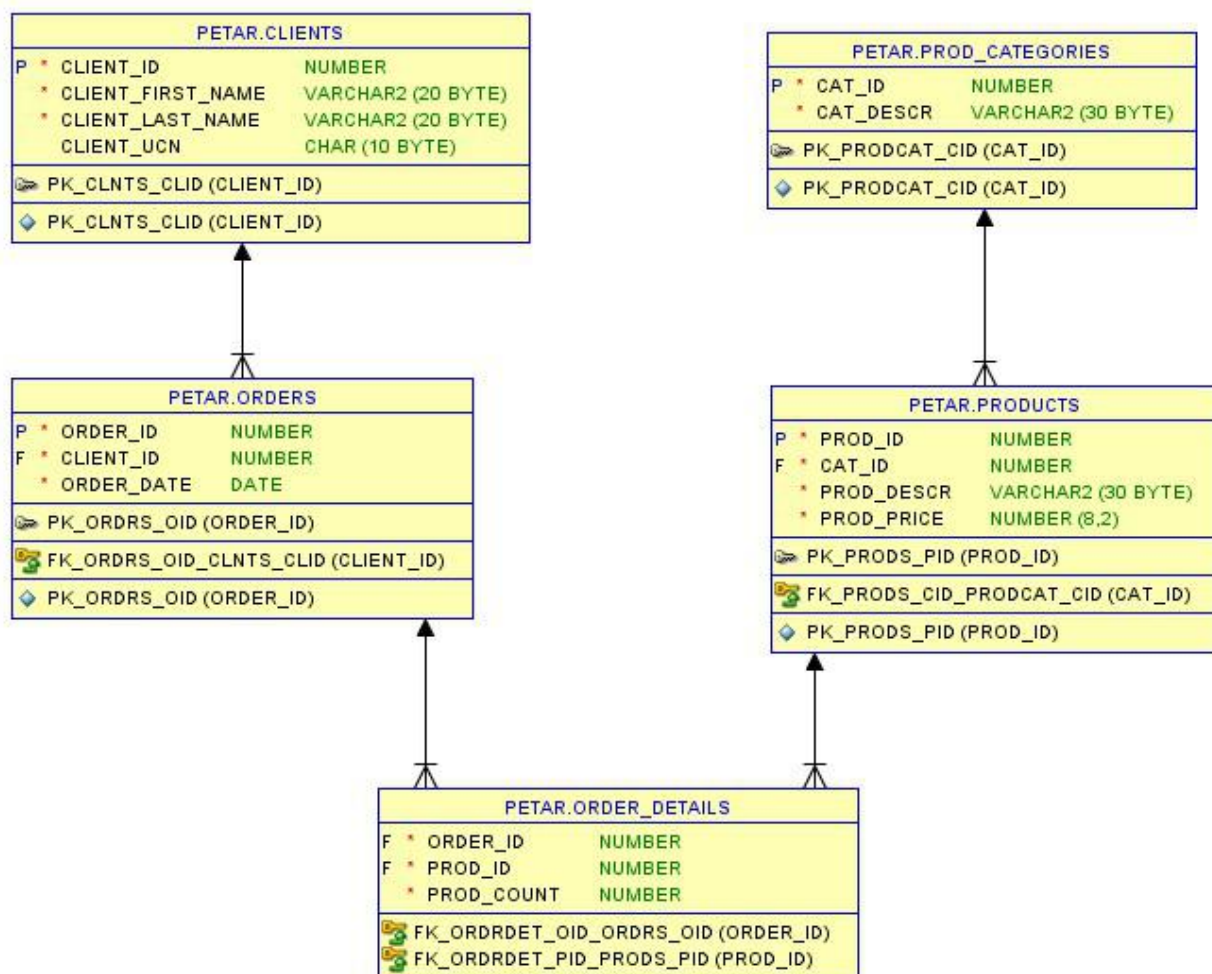
```

    INTO ORDER_DETAILS (ORDER_ID, PROD_ID, PROD_COUNT) VALUES (5631, 213, 8)
    INTO ORDER_DETAILS (ORDER_ID, PROD_ID, PROD_COUNT) VALUES (9542, 503, 9)
SELECT * FROM dual;

COMMIT;

```

4. Графично представяне на таблиците и техните връзки



5. Извеждане на справка от всички таблици

```

SELECT
    CLIENTS.CLIENT_ID,
    CLIENTS.CLIENT_FIRST_NAME,
    CLIENTS.CLIENT_LAST_NAME,
    CLIENTS.CLIENT_UCN,
    ORDERS.ORDER_ID,
    ORDERS.ORDER_DATE,
    PRODUCTS.PROD_ID,

```



```

PRODUCTS.PROD_DESCR,
PRODUCTS.PROD_PRICE,
ORDER_DETAILS.PROD_COUNT,
ORDER_DETAILS.PROD_COUNT * PRODUCTS.PROD_PRICE AS FINAL_PRICE,
PROD_CATEGORIES.CAT_ID,
PROD_CATEGORIES.CAT_DESCR
FROM ORDERS
JOIN CLIENTS
  ON ORDERS.CLIENT_ID = CLIENTS.CLIENT_ID
LEFT JOIN ORDER_DETAILS
  ON ORDERS.ORDER_ID = ORDER_DETAILS.ORDER_ID
LEFT JOIN PRODUCTS
  ON ORDER_DETAILS.PROD_ID = PRODUCTS.PROD_ID
LEFT JOIN PROD_CATEGORIES
  ON PRODUCTS.CAT_ID = PROD_CATEGORIES.CAT_ID
ORDER BY
  CLIENTS.CLIENT_ID,
  ORDERS.ORDER_DATE

```

CLIENT_ID	CLIENT_FIRST_NAME	CLIENT_LAST_NAME	CLIENT_UCN	ORDER_ID	ORDER_DATE	PROD_ID	PROD_DESCR	PROD_PRICE	PROD_COUNT	FINAL_PRICE	CAT_ID	CAT_DESCR
1	1001 Ivan	Ivanov	1524023512	5615 02-MAY-98		215	WorkBook 12	1479.99	14	20719.86	200	Notebooks
2	1001 Ivan	Ivanov	1524023512	5168 31-MAY-98		437	Medical Drone Pro Health	2999.99	10	29999.9	400	Drones
3	1002 Ivanka	Ivanova	1525623512	1256 23-MAY-85		305	HomeTabby	199.99	2	399.98	300	Tablets
4	1002 Ivanka	Ivanova	1525623512	5631 16-MAY-98		213	Brick Mega Gaming 3	9999.99	8	79999.92	200	Notebooks
5	1003 Vanio	Ivanovich	1524468512	8456 01-MAY-99		501	Blender	49.99	1	49.99	500	Kitchen supplies
6	1003 Vanio	Ivanovich	1524468512	7897 21-MAY-11		436	Military Drone 10	1999.99	110	219998.9	400	Drones
7	1004 Venci	Venciev	7584652310	1567 11-MAY-20		502	Toaster	21.99	2	43.98	500	Kitchen supplies
8	1005 Pesho	Peshov	7526213252	8452 04-MAY-00		107	Gaming phone 12XS+	2499.99	3	7499.97	100	Phones
9	1006 Goshu	Goshev	7563125262	9542 17-MAY-98		503	Microwave	149.99	9	1349.91	500	Kitchen supplies