PROIECT BD

INSTRUMENTE FINANCIARE

STOICA IOAN

GRUPA 151

1. DESCRIEREA MODELULUI REAL, A UTILITĂȚII ACESTUIA ȘI A REGULILOR DE FUNCȚIONARE.

- FIECARE PERSOANA ARE NEVOIE SA ISI CONTABILIZEZE INVESTITIILE PERSONALE IN DIFERITE ACTIVE. PENTRU ACEST LUCRU SE POATE FOLOSII DE O BAZA DE DATE. ESTE NECESARA IN PRIMUL RAND EVIDENTA FIECAREI TRANZACTII. O TRANZACTIE ARE O DATA DE EXECUTIE, UN ACTIV VANDUT, UN ACTIVE CUMPARAT, O RATA DE SCHIMB, O CANTITATE SI SE FACE PRINTR-UN BROKER / EXCHANGE.
- IN URMA ACESTOR TRANZACTII SE AJUNGE LA UN PORTOFOLIU PERSONAL CARE CONTINE LISTA DE ACTIVE DETINUTE, TIPUL LOR, CANTITATEA, ULTIMA ACTUALIZARE SI ULTIMA VALOARE DE PIATA A ACTIVULUI.
- ACTIVELE SUNT DE MAI MULTE FELURI: ACTIUNI, OBLIGATIUNI, ETF-URI, CRYPOTMONEDE.

- ACTIUNILE SUNT EMISE DE O COMPANIE, LA O ANUMITA DATA, INTR-UN ANUMIT NUMAR, CU O ANUMITA VALOARE CURENTA PE PIATA, INTR-UN ANUMIT STAT, PE O ANUMITA BURSA.
- OBLIGATIUNILE SUNT EMISE DE UN EMITENT, LA O ANUMITA DATA, CU O DATA SCADENTA, CU UN ANUMIT RANDAMENT / CUPON, INTR-O ANUMITA TARA, PE O ANUMITA BURSA, CU UN GARANT, CU POSIBLITATEA DE RASCUPARARE SAU NU SI CU POSIBLITATEA DE VANZARE PE PIATA SECUNDARA LA UN ANUMIT PRET, SAU NU.
- ETF-URILE SUNT COSURI DE ACTIVE, PROPUSE DE UN PROPUNATOR, LA O ANUMITA DATA, INTR-O ANUMITA TARA, EMISE PE O ANUMITA BURSA, CU UN NUMAR DE ACTIVE IN COMPONENTA LOR.
- CRIPTOMONEDELE SUNT MONEDE VIRTUALE, CREATE LA O ANUMITA DATA DE UN CREATOR CUNOSCUT SAU ANONIM, PE UN ANUMIT BLOCKCHAIN, FOLOSIND UN ANUMIT TIP DE CONTRACT, CU UN NUMAR UNIC LA NIVEL DE BLOCKCHAIN (CHEIA PUBLICA) DAR NU LA NIVEL DE BAZA DE DATE, INTR-O ANUMITA CANTITATE TOTALA.

- UN BLOCKCHAIN ESTE UN REGISTRU PUBLIC, CREAT DE O ANUMITA PERSOANA, CUNOASCUTA SAU NU, CARE FUNCTIONEAZA DE LA O ANUMITA DATA CU O ANUMITA TEHNOLOGIE DE MINARE.
- ACESTE ACTIVE SE TRANZACTIONEAZA PRIN INTERMEDIUL UNUI EXCHANGE/ BROKER CARE ESTE INFINTAT DE UN ANUMIT FONDATOR, LA O ANUMITA DATA, INTR-O ANUMITA TARA, ACUM ARE SEDIUL INTR-UN ANUMIT ORAS, LA O ANUMITA ADRESA SI ARE UN ANUMIT NUMAR DE ACTIVE PE CARE LE VINDE, CU UN ANUMIT COMISION DE DEPUNERE, SI UNUL DE TRANZACTIONARE. UN ACTIV POATE FI TRANZACTIONAT DE MAI MULTI BROKERI.

2. PREZENTAREA CONSTRÂNGERILOR (RESTRICȚII, REGULI) IMPUSE ASUPRA MODELULUI.

- UN BROKER DETINE MINIM 100 DE ACTIVE PENTRU A FI RELEVANT.
- TAXA DE TRANZACTIONARE ESTE SUB 2% SI CEA DE DEPUNERE SUB 5%, PENTRU A FI SUFICENT DE COMPETITIV CA PRET.
- FIECARE ACTIVE TREBUIE SA APARTINA EXACT UNEI CATEGORI.
- ETF-URILE AU CEL PUTIN 10 COMPONENTE.
- CRIPTOMONEDELE AU UN ANUMIT NUMAR DE CONTRACT UNIC.

3. DESCRIEREA ENTITĂȚILOR, INCLUZÂND PRECIZAREA CHEII PRIMARE.

Entitate	**Cheie primara**	**Observatii**
Tranzactie	Id_tranzactie	Informatii despre tranzactia respective
Actiune	Id_actiune	Stock, parte dintr-o companie
Obligatiune	Id-obligatiune	Imprumut asigurat
Criptomoneda	Id_token	Moneda virtuala cu un anumit rol
ETF	Id_ETF	Cos de actiuni
Activ	Id_active	Active detinute
Broker	Id_broker	Platforma de schimb, exchange

4. DESCRIEREA RELAȚIILOR, INCLUZÂND PRECIZAREA CARDINALITĂȚII ACESTORA.

Relatie	**Cardinalitate**	**Observatii**
Contine	Broker many-to-many active	Un broker detine mai multe active de tranzactionare. Un active este detinut de mai multi brokeri.
Apartine	Blockchain one-to-many criptomonede	Un blockchain poate sustine mai multe criptomende, iar o criptomoneda exista doar pe un blockchain.

5. DESCRIEREA ATRIBUTELOR, INCLUZÂND TIPUL DE DATE ȘI EVENTUALELE CONSTRÂNGERI, VALORI IMPLICITE, VALORI POSIBILE ALE ATRIBUTELOR.

- ENTITATE: TRANZACTIE

Atribut	**Tip**	**Dimensiune/ precizie**	**Valori posibile si valori default**	**Observatii, obligatoriu/ optional**
Data	Data calendaristica	An-luna-zi	Orice data valida	Optional
Sell	Int		Id valid	Id_activ
Buy	Int		Id valid	Id_activ
Pret	Float	4 zecimale		
Volum	Float	4 zecimale		

- ENTITATE: ACTIV

Atribut	Tip	Dimensiune/ precizie	Valori posibile si valori default	Observatii, obligatoriu/ optional
Nume	String	20		Obligatoriu
Tip	String	20		Obligatoriu
Pret USD	Float	4 zecimale		Obligatoriu

- ENTITATE: ACTIUNE

Atribut	Tip	Dimensiune/ precizie	Valori posibile si valori default	Observatii, obligatoriu/ optional
Companie	String	20		Optional
Piata	String	20		Optional
Numar	Int			Optional

- ENTITATE: OBLIGATIUNE

Atribut	Tip	Dimensiune/ precizie	Valori posibile si valori default	Observatii, obligatoriu/ optional
Emitent	String	20		Obligatoriu
Data scadenta	Data calendaristica			Obligatoriu
Cupon	Float			Obligatoriu

- ENTITATE: CRIPTOMONEDA

Atribut	Tip	Dimensiune/ precizie	Valori posibile si valori default	Observatii, obligatoriu/ optional
Key	Int			Obligatoriu
Max supply	Int			Optional
Blockchain	int		Id blockchain	Optional

- ENTITATE: ETF

Atribut	Tip	Dimensiune/ precizie	Valori posibile si valori default	Observatii, obligatoriu/ optional
Emitent	String	20		Obligatoriu
Numar active	Int			Optional
Piata acoperita	String	20		Optional

- ENTITATE: ACTIV PROPRIU

Atribut	Tip	Dimensiune/ precizie	Valori posibile si valori default	Observatii, obligatoriu/ optional
Cantitate	Int			Obligatoriu
Ultima actualizare	Data calendaristica			Optional

- ENTITATE: BROKER

Atribut	Tip	Dimensiune/ precizie	Valori posibile si valori default	Observatii, obligatoriu/ optional
Nume	String	20		Obligatoriu
Sediu	String	20		Optional
Autorizat	Bool			Optional
Nr. active	Int		>=100	Optional
Taxa retragere	Float	2 zecimale	<=0.02	Optional
Taxa tranzactie	Float	2 zecimale	<=0.05	Optional

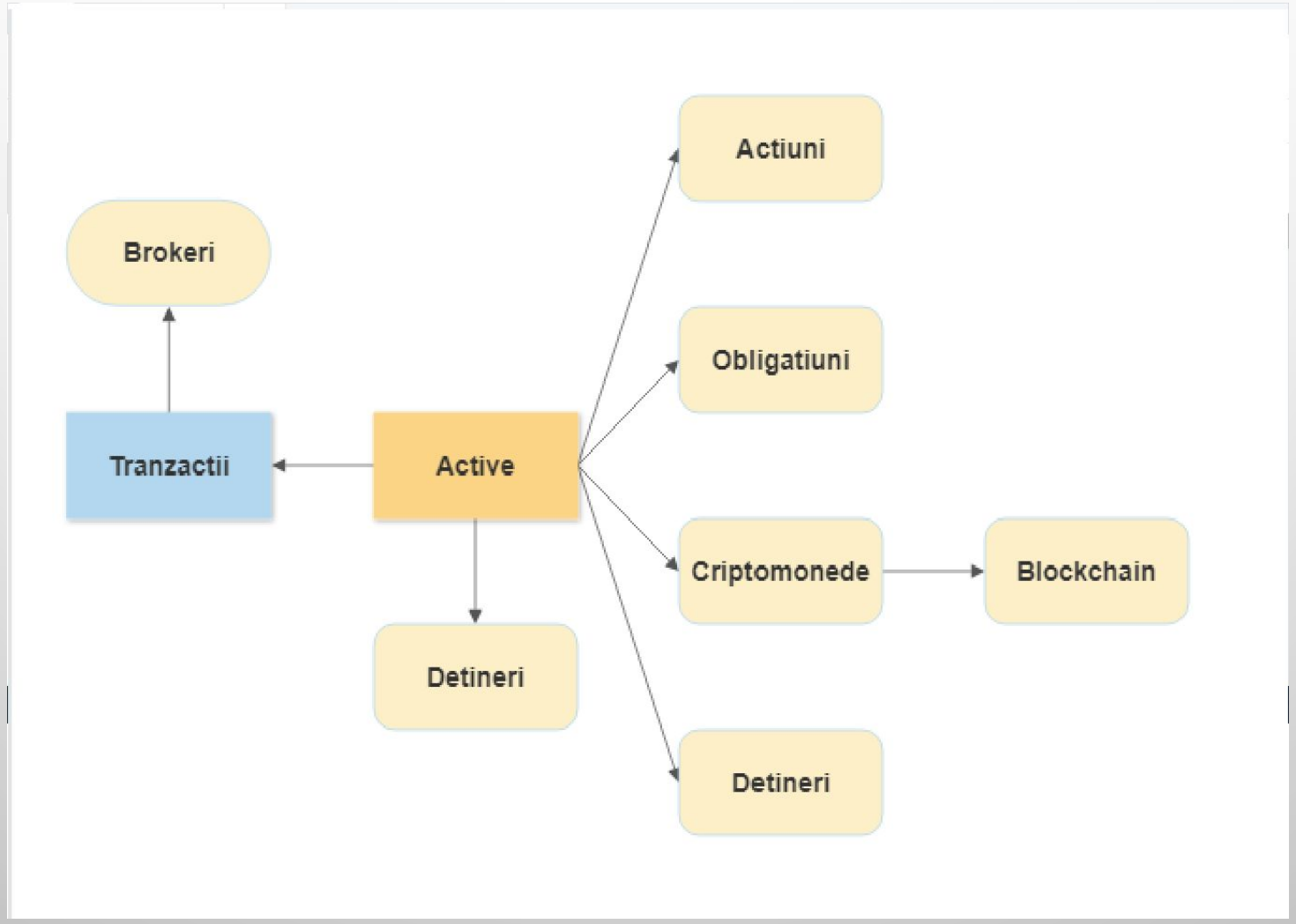
- ENTITATE: BLOCKCHAIN

Atribut	Tip	Dimensiune/ precizie	Valori posibile si valori default	Observatii, obligatoriu/ optional
Nume	String	20		Obligatoriu
Tip de verificare	String	20		Optional
Moneda	String	20		Optional

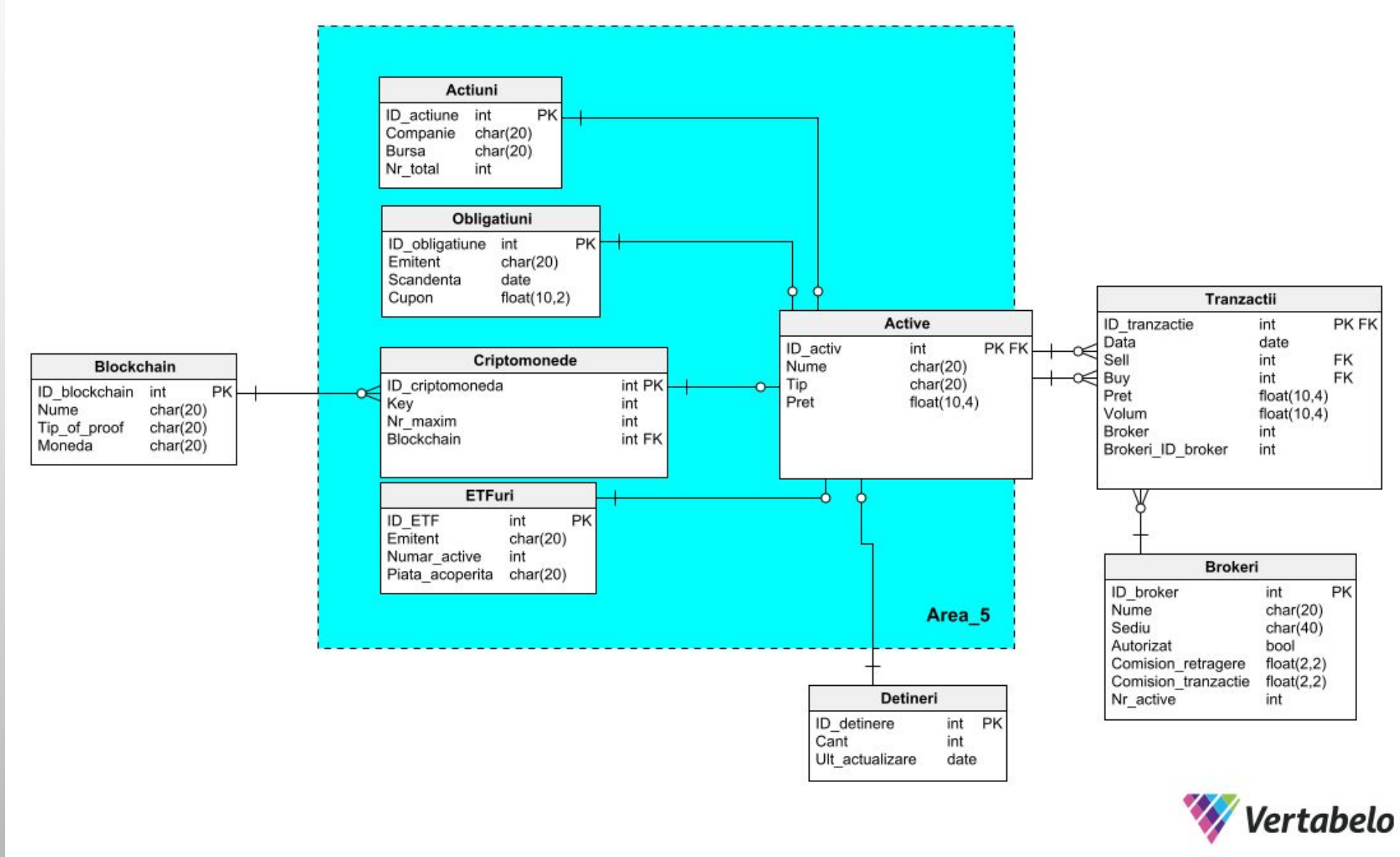
OBS. FIECARE ENTITATE ARE UN ID CARE RESPECTA URMATORUL TIPAR

Atribut	**Tip**	**Dimensiune/ precizie**	**Valori posibile si valori default**	**Observatii, obligatoriu/ optional**
ID	int		Valori diferite, autonumber	Obligatoriu

6. REALIZAREA DIAGRAMEI ENTITATE-RELAȚIE CORESPUNZĂTOARE DESCRIERII DE LA PUNCTELE 3-5.



7 .REALIZAREA DIAGRAMEI CONCEPTUALE CORESPUNZĂTOARE DIAGRAMEI ENTITATE-RELAȚIE PROIECTATE LA PUNCTUL 6.



8. ENUMERAREA SCHEMELOR RELAȚIONALE CORESPUNZĂTOARE DIAGRAMEI CONCEPTUALE PROIECTATE LA PUNCTUL 7.

- TRANZACTIE(#ID_TRANZACTIE, #BUY, #SELL, PRET)
- DETINERE(#ID_DETINERE, #ACTIV, CANTITATE)
- ACTIV(#ID_ACTIVE, TIP)
- TIP_ACTIV(#ID_ACTIUNE, #ID_OBLIGATIUNE, #ID_CRIPTOMONEDA, #ID_ETF)
- CRIPTOMONEDA(#ID_CRIPTOMONEDA, #ID_BLOCKCHAIN)

9. REALIZAREA NORMALIZĂRII PÂNĂ LA FORMA NORMALĂ 3 (FN1-FN3).

- FN1 – ATRIBUTELE MARI TREBUIESC SPARTE IN ATRIBUTE MAI MICI. CODUL UNIC AL UNUI TOKEN ESTE IMPARTIT IN KEIA PROPRIE SI ID-UL BLOCKCHAIN-ULUI.
- FN2 - SE SPARG TABELELE IN CARE ANUMITE COLOANE TIN DOAR DE O PARTE DIN CHEIA PRIMARA.
- FN3 - SE SPARG TABELELE IN CARE ANUMITE ATRIBUTE TIN DE UN ALT ATRIBUT:
- SE IMPART ACTIVELE IN 4 TIPURI SEPARATE. FIECARUI TIP II CORERESPUNDE O TABELA DEOARECE ARE PROPRIETATI DIFERITE. PROPRIETATIILE COMMUNE RAMAN IN TABELA DE ACTIVE.

10. CREAREA TABELELOR ÎN SQL ȘI INSERAREA DE DATE COERENTE ÎN FIECARE DINTRE ACESTEA (MINIMUM 5 ÎNREGISTRĂRI ÎN FIECARE TABEL NEASOCIATIV; MINIMUM 10 ÎNREGISTRĂRI ÎN TABELELE ASOCIATIVE).

```
-- Insert into Actiuni
INSERT INTO Actiuni VALUES (1, 'Apple', 'NASDAQ', 100000);
INSERT INTO Actiuni VALUES (2, 'Microsoft', 'NASDAQ', 50000);
INSERT INTO Actiuni VALUES (3, 'Google', 'NASDAQ', 75000);
INSERT INTO Actiuni VALUES (4, 'Amazon', 'NASDAQ', 50000);
INSERT INTO Actiuni VALUES (5, 'Tesla', 'NASDAQ', 60000);
INSERT INTO Actiuni VALUES (6, 'Netflix', 'NASDAQ', 30000);
INSERT INTO Actiuni VALUES (7, 'Facebook', 'NASDAQ', 40000);
INSERT INTO Actiuni VALUES (8, 'Oracle', 'NASDAQ', 35000);
INSERT INTO Actiuni VALUES (9, 'IBM', 'NASDAQ', 50000);
INSERT INTO Actiuni VALUES (10, 'Intel', 'NASDAQ', 45000);
```

```
-- Insert into Obligatiuni
-- Datele de "Scadenta" sunt folosite ca exemplu
INSERT INTO Obligatiuni VALUES (1, 'Romania', TO_DATE('2028-01-01','YYYY-MM-DD'), 3.5);
INSERT INTO Obligatiuni VALUES (2, 'SUA', TO_DATE('2030-01-01','YYYY-MM-DD'), 2.1);
INSERT INTO Obligatiuni VALUES (3, 'Germania', TO_DATE('2027-01-01','YYYY-MM-DD'), 0.5);
INSERT INTO Obligatiuni VALUES (4, 'Franta', TO_DATE('2032-01-01','YYYY-MM-DD'), 1.0);
INSERT INTO Obligatiuni VALUES (5, 'Marea Britanie', TO_DATE('2029-01-01','YYYY-MM-DD'), 1.5);
INSERT INTO Obligatiuni VALUES (6, 'Japonia', TO_DATE('2031-01-01','YYYY-MM-DD'), 0.1);
INSERT INTO Obligatiuni VALUES (7, 'Australia', TO_DATE('2033-01-01','YYYY-MM-DD'), 2.0);
INSERT INTO Obligatiuni VALUES (8, 'Canada', TO_DATE('2026-01-01','YYYY-MM-DD'), 2.2);
INSERT INTO Obligatiuni VALUES (9, 'China', TO_DATE('2034-01-01','YYYY-MM-DD'), 3.0);
INSERT INTO Obligatiuni VALUES (10, 'Brazilia', TO_DATE('2027-01-01','YYYY-MM-DD'), 4.5);
```

```
-- Insert into ETFuri

INSERT INTO ETFuri VALUES (1, 'Vanguard', 500, 'Global');

INSERT INTO ETFuri VALUES (2, 'BlackRock', 350, 'SUA');

INSERT INTO ETFuri VALUES (3, 'State Street', 300, 'Europe');

INSERT INTO ETFuri VALUES (4, 'Fidelity', 400, 'Asia');

INSERT INTO ETFuri VALUES (5, 'Invesco', 450, 'SUA');

INSERT INTO ETFuri VALUES (6, 'Charles Schwab', 400, 'Global');

INSERT INTO ETFuri VALUES (7, 'Northern Trust', 350, 'Europe');

INSERT INTO ETFuri VALUES (8, 'Goldman Sachs', 300, 'Asia');

INSERT INTO ETFuri VALUES (9, 'UBS Group', 500, 'SUA');

INSERT INTO ETFuri VALUES (10, 'BNP Paribas', 450, 'Global');
```

```
-- Insert into Blockchain

INSERT INTO Blockchain VALUES (1, 'Bitcoin', 'Proof-of-Work', 'BTC');

INSERT INTO Blockchain VALUES (2, 'Ethereum', 'Proof-of-Stake', 'ETH');

INSERT INTO Blockchain VALUES (3, 'Cardano', 'Proof-of-Stake', 'ADA');

INSERT INTO Blockchain VALUES (4, 'Polkadot', 'Proof-of-Stake', 'DOT');

INSERT INTO Blockchain VALUES (5, 'Litecoin', 'Proof-of-Work', 'LTC');

INSERT INTO Blockchain VALUES (6, 'Chainlink', 'Proof-of-Stake', 'LINK');

INSERT INTO Blockchain VALUES (7, 'Ripple', 'Consensus', 'XRP');

INSERT INTO Blockchain VALUES (8, 'Stellar', 'Consensus', 'XLM');

INSERT INTO Blockchain VALUES (9, 'Dogecoin', 'Proof-of-Work', 'DOGE');

INSERT INTO Blockchain VALUES (10, 'Tron', 'Proof-of-Stake', 'TRX');
```

```
-- Insert into Criptomonede

INSERT INTO Criptomonede VALUES (1, 123456, 21000000, 1);

INSERT INTO Criptomonede VALUES (2, 234567, 105000000, 2);

INSERT INTO Criptomonede VALUES (3, 345678, 45000000000, 3);

INSERT INTO Criptomonede VALUES (4, 456789, 1050000000, 4);

INSERT INTO Criptomonede VALUES (5, 567890, 84000000, 5);

INSERT INTO Criptomonede VALUES (6, 678901, 1000000000, 6);

INSERT INTO Criptomonede VALUES (7, 789012, 100000000000, 7);

INSERT INTO Criptomonede VALUES (8, 890123, 50000000000, 8);

INSERT INTO Criptomonede VALUES (9, 901234, 130000000000, 9);

INSERT INTO Criptomonede VALUES (10, 123450, 99000000000, 10);
```

```
-- Insert into Brokeri

INSERT INTO Brokeri VALUES (1, 'eToro', 'New York', 1, 0.02, 0.01, 200);

INSERT INTO Brokeri VALUES (2, 'Interactive Brokers', 'Connecticut', 1, 0.02, 0.01, 250);

INSERT INTO Brokeri VALUES (3, 'Robinhood', 'California', 1, 0.01, 0.005, 300);

INSERT INTO Brokeri VALUES (4, 'Coinbase', 'California', 1, 0.03, 0.02, 150);

INSERT INTO Brokeri VALUES (5, 'Binance', 'Malta', 1, 0.01, 0.005, 500);

INSERT INTO Brokeri VALUES (6, 'Kraken', 'California', 1, 0.02, 0.01, 350);

INSERT INTO Brokeri VALUES (7, 'Bitstamp', 'Luxembourg', 1, 0.03, 0.02, 200);

INSERT INTO Brokeri VALUES (8, 'Gemini', 'New York', 1, 0.02, 0.01, 300);

INSERT INTO Brokeri VALUES (9, 'Revolut', 'London', 1, 0.01, 0.005, 250);

INSERT INTO Brokeri VALUES (10, 'TradeStation', 'Florida', 1, 0.03, 0.02, 200);
```

```
-- Insert into Detineri

-- Datele de "Ult_actualizare" sunt folosite ca exemplu

INSERT INTO Detineri VALUES (1, 50, TO_DATE('2023-01-01','YYYY-MM-DD'));

INSERT INTO Detineri VALUES (2, 100, TO_DATE('2023-02-01','YYYY-MM-DD'));

INSERT INTO Detineri VALUES (3, 200, TO_DATE('2023-03-01','YYYY-MM-DD'));

INSERT INTO Detineri VALUES (4, 150, TO_DATE('2023-04-01','YYYY-MM-DD'));

INSERT INTO Detineri VALUES (5, 250, TO_DATE('2023-05-01','YYYY-MM-DD'));

INSERT INTO Detineri VALUES (6, 300, TO_DATE('2023-06-01','YYYY-MM-DD'));

INSERT INTO Detineri VALUES (7, 350, TO_DATE('2023-07-01','YYYY-MM-DD'));

INSERT INTO Detineri VALUES (8, 400, TO_DATE('2023-08-01','YYYY-MM-DD'));

INSERT INTO Detineri VALUES (9, 450, TO_DATE('2023-09-01','YYYY-MM-DD'));

INSERT INTO Detineri VALUES (10, 500, TO_DATE('2023-10-01','YYYY-MM-DD'));
```

```
-- Insert into Active
INSERT INTO Active VALUES (1, 'Apple Actiuni', 'Actiuni', 150.25);
INSERT INTO Active VALUES (2, 'Microsoft Actiuni', 'Actiuni', 210.35);
INSERT INTO Active VALUES (3, 'Google Actiuni', 'Actiuni', 1520.20);
INSERT INTO Active VALUES (4, 'Amazon Actiuni', 'Actiuni', 2000.10);
INSERT INTO Active VALUES (5, 'Tesla Actiuni', 'Actiuni', 180.50);
INSERT INTO Active VALUES (6, 'Netflix Actiuni', 'Actiuni', 550.00);
INSERT INTO Active VALUES (7, 'Facebook Actiuni', 'Actiuni', 300.00);
INSERT INTO Active VALUES (8, 'Oracle Actiuni', 'Actiuni', 70.00);
INSERT INTO Active VALUES (9, 'IBM Actiuni', 'Actiuni', 140.00);
INSERT INTO Active VALUES (10, 'Intel Actiuni', 'Actiuni', 60.00);
```

```
INSERT INTO Tranzactii (ID_tranzactie, Data, Sell, Buy, Pret, Volum, Broker, Brokeri_ID_broker)
VALUES (1, TO_DATE('2023-06-01', 'YYYY-MM-DD'), 5, 10, 100.50, 10.25, 1, 1);
INSERT INTO Tranzactii (ID_tranzactie, Data, Sell, Buy, Pret, Volum, Broker, Brokeri_ID_broker)
VALUES (2, TO_DATE('2023-06-01', 'YYYY-MM-DD'), 8, 6, 95.25, 8.75, 2, 1);
INSERT INTO Tranzactii (ID_tranzactie, Data, Sell, Buy, Pret, Volum, Broker, Brokeri_ID_broker)
VALUES (3, TO_DATE('2023-06-01', 'YYYY-MM-DD'), 4, 9, 110.75, 12.50, 1, 2);
INSERT INTO Tranzactii (ID_tranzactie, Data, Sell, Buy, Pret, Volum, Broker, Brokeri_ID_broker)
VALUES (4, TO_DATE('2023-06-01', 'YYYY-MM-DD'), 7, 2, 80.60, 6.20, 3, 2);
INSERT INTO Tranzactii (ID_tranzactie, Data, Sell, Buy, Pret, Volum, Broker, Brokeri_ID_broker)
VALUES (5, TO_DATE('2023-06-01', 'YYYY-MM-DD'), 3, 1, 95.80, 9.80, 2, 3);
```

```
INSERT INTO Tranzactii (ID_tranzactie, Data, Sell, Buy, Pret, Volum, Broker, Brokeri_ID_broker)
VALUES (6, TO_DATE('2023-06-01', 'YYYY-MM-DD'), 10, 8, 120.40, 15.00, 3, 4);
INSERT INTO Tranzactii (ID_tranzactie, Data, Sell, Buy, Pret, Volum, Broker, Brokeri_ID_broker)
VALUES (7,TO_DATE('2023-06-01', 'YYYY-MM-DD'), 6, 3, 85.90, 7.50, 1, 4);
INSERT INTO Tranzactii (ID_tranzactie, Data, Sell, Buy, Pret, Volum, Broker, Brokeri_ID_broker)
VALUES (8, TO_DATE('2023-06-01', 'YYYY-MM-DD'), 2, 5, 100.00, 11.80, 2, 5);
INSERT INTO Tranzactii (ID_tranzactie, Data, Sell, Buy, Pret, Volum, Broker, Brokeri_ID_broker)
VALUES (9, TO_DATE('2023-06-01', 'YYYY-MM-DD'), 9, 4, 115.25, 13.75, 3, 5);
INSERT INTO Tranzactii (ID_tranzactie, Data, Sell, Buy, Pret, Volum, Broker, Brokeri_ID_broker)
VALUES (10, TO_DATE('2023-06-01', 'YYYY-MM-DD'), 1, 7, 90.75, 8.90, 1, 6);
```

11. Crearea tabelelor in SQL si inserarea de date coerente in fiecare dintre acestea (minimum 5 inregistrari in fiecare tabel neasociativ; minimum 10 inregistrari in tabelele asociative) .

Am editat codul de SQL, si l-am rulat in cea mai mare parte din VS Code

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```
1   -- Drops tables
2   DROP TABLE Actiuni;
3
4   DROP TABLE Active;
5
6   DROP TABLE Blockchain;
7
8   DROP TABLE Brokeri;
9
10  DROP TABLE Criptomonede;
11
12  DROP TABLE Detineri;
13
14  DROP TABLE ETFuri;
15
16  DROP TABLE Obligatiuni;
17
18  DROP TABLE Tranzactii;
19
20  -- Create tables
21  -- Table: Actiuni
22  CREATE TABLE Actiuni (
23      ID_actiune int NOT NULL,
24      Companie char(20) NOT NULL,
25      Bursa char(20) NOT NULL,
26      Nr_total int NOT NULL,
27      CONSTRAINT Actiuni_pk PRIMARY KEY (ID_acti
28  );
29
30  -- Table: Active
31  CREATE TABLE Active (
32      ID_activ int NOT NULL,
33      Nume char(20) NOT NULL,
34      Tip char(20) NOT NULL,
```

Results: proiect.sql

```
SQL> CREATE TABLE Actiuni (
  2    ID_actiune int NOT NULL,
  3    Companie char(20) NOT NULL,
  4    Bursa char(20) NOT NULL,
  5    Nr_total int NOT NULL,
  6    CONSTRAINT Actiuni_pk PRIMARY KEY (ID_actiune)
  7  );

TABLE created.

SQL> CREATE TABLE Active (
  2    ID_activ int NOT NULL,
  3    Nume char(20) NOT NULL,
  4    Tip char(20) NOT NULL,
  5    Pret float(10,4) NOT NULL,
  6    CONSTRAINT Active_pk PRIMARY KEY (ID_activ)
  7  );

    Pret float(10,4) NOT NULL,
                     *
ERROR at line 35:
ORA-00907: missing right parenthesis
SQL> CREATE TABLE Active (
  2    ID_activ int NOT NULL,
  3    Nume char(20) NOT NULL,
  4    Tip char(20) NOT NULL,
  5    Pret number(10,4) NOT NULL,
  6    CONSTRAINT Active_pk PRIMARY KEY (ID_activ)
  7  );

TABLE created.

SQL> CREATE TABLE Blockchain (
  2    ID_blockchain int NOT NULL,
  3    Nume char(20) NOT NULL,
  4    Tip_of_proof char(20) NOT NULL,
  5    Moneda char(20) NOT NULL,
  6    CONSTRAINT Blockchain_pk PRIMARY KEY (ID_blockchain)
  7  );

TABLE created.
```

EXPLORER

- BD
  - Proiect_nou
    - Cerinte_Proiect.pdf
    - Curs_Introductiv_Sistem_de_Notare.pdf
    - proiect.sql 1, M
    - prompt.sql U
    - status.txt
    - Stoica_Ioan-creare_inserare.txt
  - Proiect_vechi \ Proiect BD
    - Cerinte_proiect.pdf
    - MySQL_demo_physical_data_model_creat...
    - MySQL_demo_physical_data_model_drop....
    - MySQL_demo_physical_data_model-2022...
    - pct6.png
    - PROIECT_ EXEMPLU.pdf
    - PROIECT_ EXEMPLU2.docx
    - Status and details.docx
    - Stoica_Ioan-exemple.txt
    - Stoica_Ioan-proiect.pptx
  - Stoica_Ioan_251_1.sql

OUTLINE

TIMELINE

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```
1   -- Drops tables
2   DROP TABLE Actiuni;
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4   DROP TABLE Active;
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10  DROP TABLE Criptomonede;
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12  DROP TABLE Detineri;
13
14  DROP TABLE ETFuri;
15
16  DROP TABLE Obligatiuni;
17
18  DROP TABLE Tranzactii;
19
20  -- Create tables
21  -- Table: Actiuni
22  CREATE TABLE Actiuni (
23      ID_actiune int NOT NULL,
24      Companie char(20) NOT NULL,
25      Bursa char(20) NOT NULL,
26      Nr_total int NOT NULL,
27      CONSTRAINT Actiuni_pk PRIMARY KEY (ID_acti
28  );
29
30  -- Table: Active
31  CREATE TABLE Active (
32      ID_activ int NOT NULL,
33      Nume char(20) NOT NULL,
34      Tip char(20) NOT NULL,
```

Results: proiect.sql

```
TABLE created.

SQL> CREATE TABLE Blockchain (
  2     ID_blockchain int NOT NULL,
  3     Nume char(20) NOT NULL,
  4     Tip_of_proof char(20) NOT NULL,
  5     Moneda char(20) NOT NULL,
  6     CONSTRAINT Blockchain_pk PRIMARY KEY (ID_blockchain)
  7  );

TABLE created.

SQL> CREATE TABLE Brokeri (
  2     ID_broker int NOT NULL,
  3     Nume char(20) NOT NULL,
  4     Sediu char(40) NOT NULL,
  5     Autorizat bool NOT NULL,
  6     Comision_retragere float(2,2) NOT NULL CHECK (<=0.05),
  7     Comision_tranzactie float(2,2) NOT NULL CHECK (<=0.02),
  8     Nr_active int NOT NULL CHECK (>=100),
  9     CONSTRAINT Brokeri_pk PRIMARY KEY (ID_broker)
 10  );

    Comision_retragere float(2,2) NOT NULL CHECK (<=0.05),
                                             *
ERROR at line 54:
ORA-00907: missing right parenthesis
SQL> CREATE TABLE Brokeri (
  2     ID_broker int NOT NULL,
  3     Nume char(20) NOT NULL,
  4     Sediu char(40) NOT NULL,
  5     Autorizat bool NOT NULL,
  6     Comision_retragere number(2,2) NOT NULL CHECK (<=0.05),
  7     Comision_tranzactie number(2,2) NOT NULL CHECK (<=0.02),
  8     Nr_active int NOT NULL CHECK (>=100),
  9     CONSTRAINT Brokeri_pk PRIMARY KEY (ID_broker)
 10  );

    Comision_retragere number(2,2) NOT NULL CHECK
(<=0.05),
                                                 *
```

EXPLORER

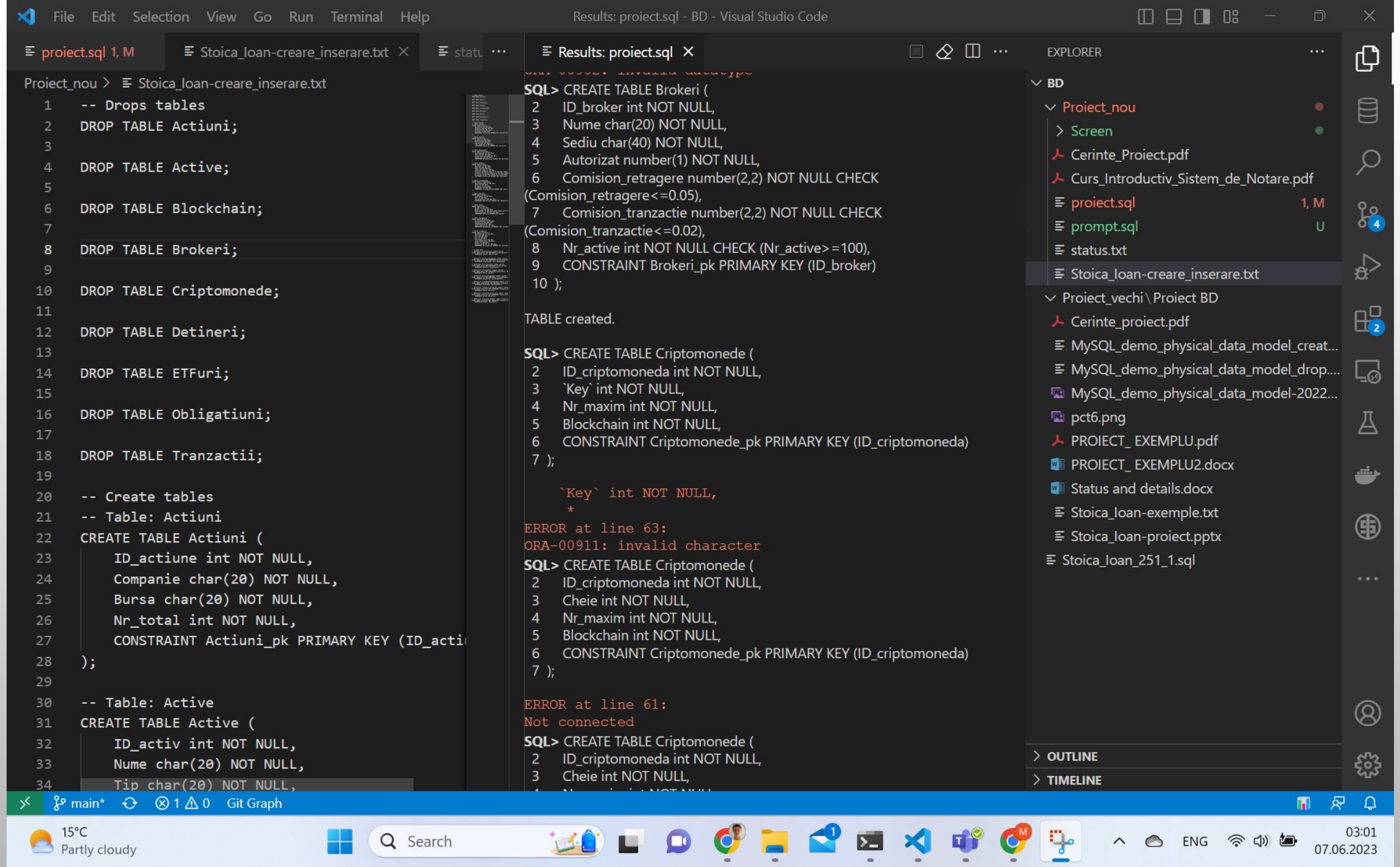
- BD
  - Proiect_nou
    - Screen
    - Cerinte_Proiect.pdf
    - Curs_Introductiv_Sistem_de_Notare.pdf
    - proiect.sql 1, M
    - prompt.sql U
    - status.txt
    - Stoica_Ioan-creare_inserare.txt
  - Proiect_vechi \ Proiect BD
    - Cerinte_proiect.pdf
    - MySQL_demo_physical_data_model_creat...
    - MySQL_demo_physical_data_model_drop....
    - MySQL_demo_physical_data_model-2022...
    - pct6.png
    - PROIECT_ EXEMPLU.pdf
    - PROIECT_ EXEMPLU2.docx
    - Status and details.docx
    - Stoica_Ioan-exemple.txt
    - Stoica_Ioan-proiect.pptx
  - Stoica_Ioan_251_1.sql

OUTLINE

TIMELINE

main* 1 0 Git Graph — Ln 8, Col 20 Spaces: 4 UTF-8 CRLF Plain Text

15°C Partly cloudy — Search — ENG — 03:00 07.06.2023


File Edit Selection View Go Run Terminal Help
Results: proiect.sql - BD - Visual Studio Code
proiect.sql 1, M
Stoica_Ioan-creare_inserare.txt
Results: proiect.sql
Proiect_nou > Stoica_Ioan-creare_inserare.txt
-- Drops tables
DROP TABLE Actiuni;
DROP TABLE Active;
DROP TABLE Blockchain;
DROP TABLE Brokeri;
DROP TABLE Criptomonede;
DROP TABLE Detineri;
DROP TABLE ETFuri;
DROP TABLE Obligatiuni;
DROP TABLE Tranzactii;
-- Create tables
-- Table: Actiuni
CREATE TABLE Actiuni (
ID_actiune int NOT NULL,
Companie char(20) NOT NULL,
Bursa char(20) NOT NULL,
Nr_total int NOT NULL,
CONSTRAINT Actiuni_pk PRIMARY KEY (ID_acti
);
-- Table: Active
CREATE TABLE Active (
ID_activ int NOT NULL,
Nume char(20) NOT NULL,
Tip char(20) NOT NULL,
SQL> CREATE TABLE Brokeri (
ID_broker int NOT NULL,
Nume char(20) NOT NULL,
Sediu char(40) NOT NULL,
Autorizat number(1) NOT NULL,
Comision_retragere number(2,2) NOT NULL CHECK (Comision_retragere<=0.05),
Comision_tranzactie number(2,2) NOT NULL CHECK (Comision_tranzactie<=0.02),
Nr_active int NOT NULL CHECK (Nr_active>=100),
CONSTRAINT Brokeri_pk PRIMARY KEY (ID_broker)
);
TABLE created.
SQL> CREATE TABLE Criptomonede (
ID_criptomoneda int NOT NULL,
`Key` int NOT NULL,
Nr_maxim int NOT NULL,
Blockchain int NOT NULL,
CONSTRAINT Criptomonede_pk PRIMARY KEY (ID_criptomoneda)
);
`Key` int NOT NULL,
*
ERROR at line 63:
ORA-00911: invalid character
SQL> CREATE TABLE Criptomonede (
ID_criptomoneda int NOT NULL,
Cheie int NOT NULL,
Nr_maxim int NOT NULL,
Blockchain int NOT NULL,
CONSTRAINT Criptomonede_pk PRIMARY KEY (ID_criptomoneda)
);
ERROR at line 61:
Not connected
SQL> CREATE TABLE Criptomonede (
ID_criptomoneda int NOT NULL,
Cheie int NOT NULL,
EXPLORER
BD
Proiect_nou
Screen
Cerinte_Proiect.pdf
Curs_Introductiv_Sistem_de_Notare.pdf
proiect.sql 1, M
prompt.sql U
status.txt
Stoica_Ioan-creare_inserare.txt
Proiect_vechi \ Proiect BD
Cerinte_proiect.pdf
MySQL_demo_physical_data_model_creat...
MySQL_demo_physical_data_model_drop....
MySQL_demo_physical_data_model-2022...
pct6.png
PROIECT_ EXEMPLU.pdf
PROIECT_ EXEMPLU2.docx
Status and details.docx
Stoica_Ioan-exemple.txt
Stoica_Ioan-proiect.pptx
Stoica_Ioan_251_1.sql
OUTLINE
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File Edit Selection View Go Run Terminal Help — Results: proiect.sql - BD - Visual Studio Code

proiect.sql 1, M | Stoica_Ioan-creare_inserare.txt | Results: proiect.sql

Proiect_nou > Stoica_Ioan-creare_inserare.txt

```
1   -- Drops tables
2   DROP TABLE Actiuni;
3
4   DROP TABLE Active;
5
6   DROP TABLE Blockchain;
7
8   DROP TABLE Brokeri;
9
10  DROP TABLE Criptomonede;
11
12  DROP TABLE Detineri;
13
14  DROP TABLE ETFuri;
15
16  DROP TABLE Obligatiuni;
17
18  DROP TABLE Tranzactii;
19
20  -- Create tables
21  -- Table: Actiuni
22  CREATE TABLE Actiuni (
23      ID_actiune int NOT NULL,
24      Companie char(20) NOT NULL,
25      Bursa char(20) NOT NULL,
26      Nr_total int NOT NULL,
27      CONSTRAINT Actiuni_pk PRIMARY KEY (ID_acti
28  );
29
30  -- Table: Active
31  CREATE TABLE Active (
32      ID_activ int NOT NULL,
33      Nume char(20) NOT NULL,
34      Tip char(20) NOT NULL,
```

```
SQL> CREATE TABLE Criptomonede (
  2    ID_criptomoneda int NOT NULL,
  3    Cheie int NOT NULL,
  4    Nr_maxim int NOT NULL,
  5    Blockchain int NOT NULL,
  6    CONSTRAINT Criptomonede_pk PRIMARY KEY (ID_criptomoneda)
  7  );

TABLE created.

SQL> CREATE TABLE Detineri (
  2    ID_detinere int NOT NULL,
  3    Cant int NOT NULL,
  4    Ult_actualizare date NOT NULL,
  5    CONSTRAINT Detineri_pk PRIMARY KEY (ID_detinere)
  6  );

TABLE created.

SQL> CREATE TABLE ETFuri (
  2    ID_ETF int NOT NULL,
  3    Emitent char(20) NOT NULL,
  4    Numar_active int NOT NULL CHECK (>=10),
  5    Piata_acoperita char(20) NOT NULL,
  6    CONSTRAINT ETFuri_pk PRIMARY KEY (ID_ETF)
  7  );

    Numar_active int NOT NULL CHECK (>=10),
                                     *
ERROR at line 81:
ORA-00936: missing expression
SQL> CREATE TABLE ETFuri (
  2    ID_ETF int NOT NULL,
  3    Emitent char(20) NOT NULL,
  4    Numar_active int NOT NULL CHECK (Numar_active>=10),
  5    Piata_acoperita char(20) NOT NULL,
  6    CONSTRAINT ETFuri_pk PRIMARY KEY (ID_ETF)
  7  );

TABLE created.
```

EXPLORER

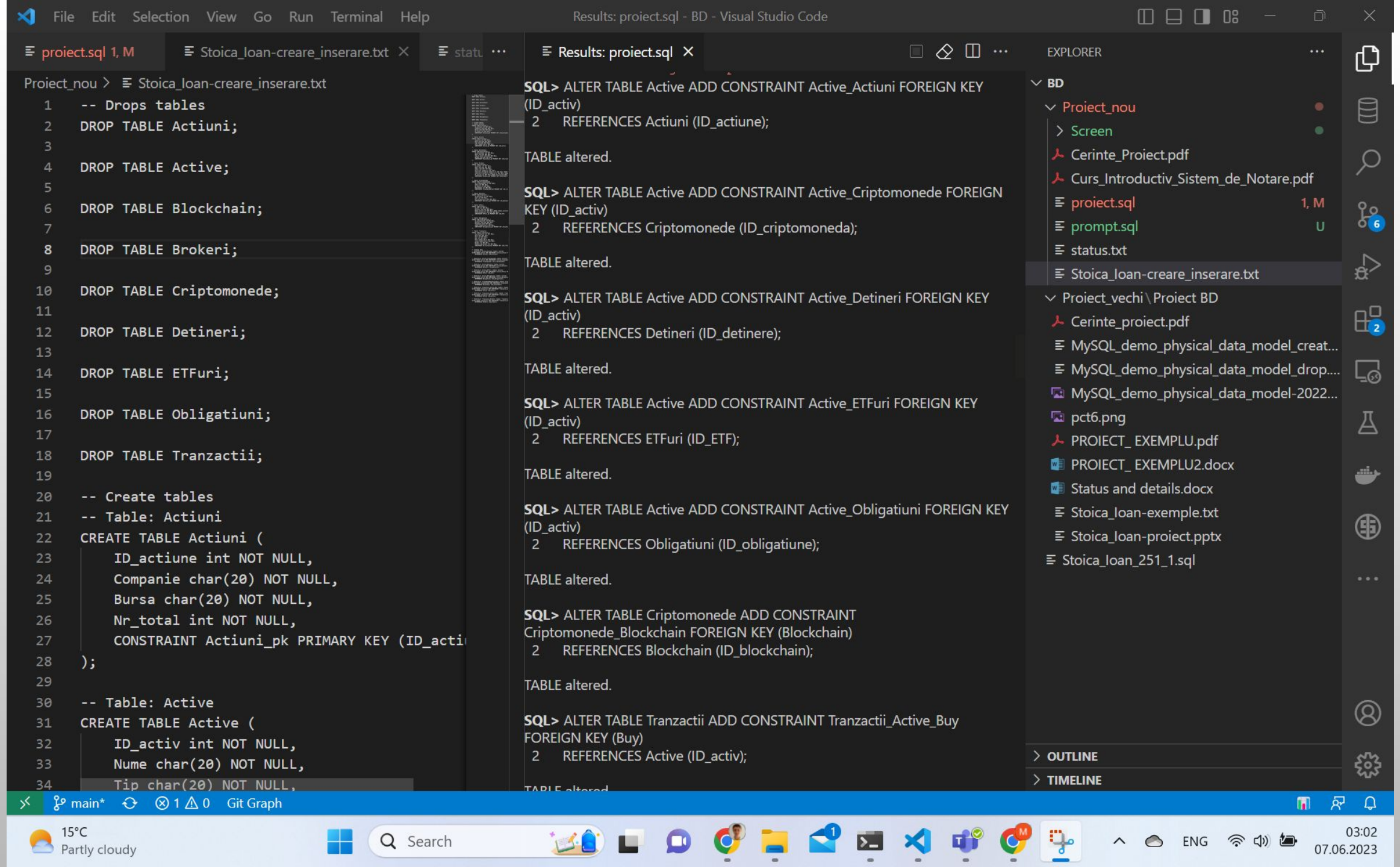
- BD
  - Proiect_nou
    - Screen
    - Cerinte_Proiect.pdf
    - Curs_Introductiv_Sistem_de_Notare.pdf
    - proiect.sql 1, M
    - prompt.sql U
    - status.txt
    - Stoica_Ioan-creare_inserare.txt
  - Proiect_vechi \ Proiect BD
    - Cerinte_proiect.pdf
    - MySQL_demo_physical_data_model_creat...
    - MySQL_demo_physical_data_model_drop....
    - MySQL_demo_physical_data_model-2022...
    - pct6.png
    - PROIECT_ EXEMPLU.pdf
    - PROIECT_ EXEMPLU2.docx
    - Status and details.docx
    - Stoica_Ioan-exemple.txt
    - Stoica_Ioan-proiect.pptx
  - Stoica_Ioan_251_1.sql

OUTLINE

TIMELINE

main* 1 0 Git Graph

15°C Partly cloudy — Search — ENG — 03:02 07.06.2023


File Edit Selection View Go Run Terminal Help
Results: proiect.sql - BD - Visual Studio Code
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Stoica_Ioan-creare_inserare.txt
Results: proiect.sql
Proiect_nou > Stoica_Ioan-creare_inserare.txt
-- Drops tables
DROP TABLE Actiuni;
DROP TABLE Active;
DROP TABLE Blockchain;
DROP TABLE Brokeri;
DROP TABLE Criptomonede;
DROP TABLE Detineri;
DROP TABLE ETFuri;
DROP TABLE Obligatiuni;
DROP TABLE Tranzactii;
-- Create tables
-- Table: Actiuni
CREATE TABLE Actiuni (
ID_actiune int NOT NULL,
Companie char(20) NOT NULL,
Bursa char(20) NOT NULL,
Nr_total int NOT NULL,
CONSTRAINT Actiuni_pk PRIMARY KEY (ID_acti
);
-- Table: Active
CREATE TABLE Active (
ID_activ int NOT NULL,
Nume char(20) NOT NULL,
Tip char(20) NOT NULL,
SQL> ALTER TABLE Active ADD CONSTRAINT Active_Actiuni FOREIGN KEY (ID_activ)
2 REFERENCES Actiuni (ID_actiune);
TABLE altered.
SQL> ALTER TABLE Active ADD CONSTRAINT Active_Criptomonede FOREIGN KEY (ID_activ)
2 REFERENCES Criptomonede (ID_criptomoneda);
TABLE altered.
SQL> ALTER TABLE Active ADD CONSTRAINT Active_Detineri FOREIGN KEY (ID_activ)
2 REFERENCES Detineri (ID_detinere);
TABLE altered.
SQL> ALTER TABLE Active ADD CONSTRAINT Active_ETFuri FOREIGN KEY (ID_activ)
2 REFERENCES ETFuri (ID_ETF);
TABLE altered.
SQL> ALTER TABLE Active ADD CONSTRAINT Active_Obligatiuni FOREIGN KEY (ID_activ)
2 REFERENCES Obligatiuni (ID_obligatiune);
TABLE altered.
SQL> ALTER TABLE Criptomonede ADD CONSTRAINT Criptomonede_Blockchain FOREIGN KEY (Blockchain)
2 REFERENCES Blockchain (ID_blockchain);
TABLE altered.
SQL> ALTER TABLE Tranzactii ADD CONSTRAINT Tranzactii_Active_Buy FOREIGN KEY (Buy)
2 REFERENCES Active (ID_activ);
EXPLORER
BD
Proiect_nou
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proiect.sql 1, M
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MySQL_demo_physical_data_model_creat...
MySQL_demo_physical_data_model_drop....
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PROIECT_ EXEMPLU.pdf
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Stoica_Ioan-proiect.pptx
Stoica_Ioan_251_1.sql
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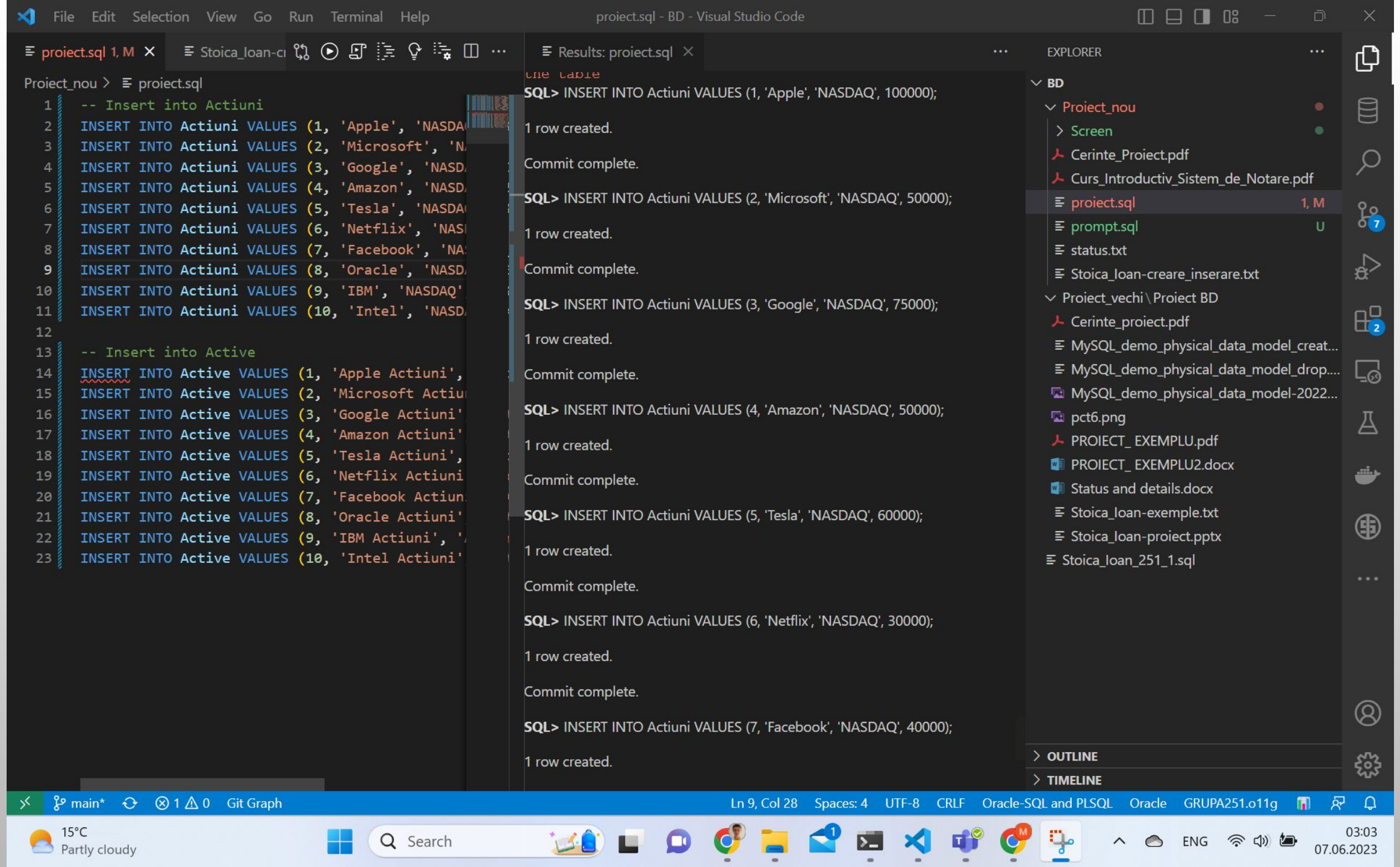
File Edit Selection View Go Run Terminal Help
proiect.sql - BD - Visual Studio Code
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Proiect_nou > proiect.sql
-- Insert into Actiuni
INSERT INTO Actiuni VALUES (1, 'Apple', 'NASDA
INSERT INTO Actiuni VALUES (2, 'Microsoft', 'N
INSERT INTO Actiuni VALUES (3, 'Google', 'NASD
INSERT INTO Actiuni VALUES (4, 'Amazon', 'NASD
INSERT INTO Actiuni VALUES (5, 'Tesla', 'NASDA
INSERT INTO Actiuni VALUES (6, 'Netflix', 'NAS
INSERT INTO Actiuni VALUES (7, 'Facebook', 'NA
INSERT INTO Actiuni VALUES (8, 'Oracle', 'NASD
INSERT INTO Actiuni VALUES (9, 'IBM', 'NASDAQ'
INSERT INTO Actiuni VALUES (10, 'Intel', 'NASD
-- Insert into Active
INSERT INTO Active VALUES (1, 'Apple Actiuni',
INSERT INTO Active VALUES (2, 'Microsoft Actiu
INSERT INTO Active VALUES (3, 'Google Actiuni'
INSERT INTO Active VALUES (4, 'Amazon Actiuni'
INSERT INTO Active VALUES (5, 'Tesla Actiuni',
INSERT INTO Active VALUES (6, 'Netflix Actiuni
INSERT INTO Active VALUES (7, 'Facebook Actiun
INSERT INTO Active VALUES (8, 'Oracle Actiuni'
INSERT INTO Active VALUES (9, 'IBM Actiuni', '
INSERT INTO Active VALUES (10, 'Intel Actiuni'
Results: proiect.sql
SQL> INSERT INTO Actiuni VALUES (1, 'Apple', 'NASDAQ', 100000);
1 row created.
Commit complete.
SQL> INSERT INTO Actiuni VALUES (2, 'Microsoft', 'NASDAQ', 50000);
1 row created.
Commit complete.
SQL> INSERT INTO Actiuni VALUES (3, 'Google', 'NASDAQ', 75000);
1 row created.
Commit complete.
SQL> INSERT INTO Actiuni VALUES (4, 'Amazon', 'NASDAQ', 50000);
1 row created.
Commit complete.
SQL> INSERT INTO Actiuni VALUES (5, 'Tesla', 'NASDAQ', 60000);
1 row created.
Commit complete.
SQL> INSERT INTO Actiuni VALUES (6, 'Netflix', 'NASDAQ', 30000);
1 row created.
Commit complete.
SQL> INSERT INTO Actiuni VALUES (7, 'Facebook', 'NASDAQ', 40000);
1 row created.
EXPLORER
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07.06.2023

File Edit Selection View Go Run Terminal Help — Results: proiect.sql - BD - Visual Studio Code

proiect.sql M | Stoica_Ioan-creare_inserare.txt M | stat

Proiect_nou > proiect.sql

```
1
2   -- Insert into Active
3   INSERT INTO Active VALUES (1, 'Apple Actiuni',
4   INSERT INTO Active VALUES (2, 'Microsoft Actiu
5   INSERT INTO Active VALUES (3, 'Google Actiuni'
6   INSERT INTO Active VALUES (4, 'Amazon Actiuni'
7   INSERT INTO Active VALUES (5, 'Tesla Actiuni',
8   INSERT INTO Active VALUES (6, 'Netflix Actiuni
9   INSERT INTO Active VALUES (7, 'Facebook Actiun
10  INSERT INTO Active VALUES (8, 'Oracle Actiuni'
11  INSERT INTO Active VALUES (9, 'IBM Actiuni', '
12  INSERT INTO Active VALUES (10, 'Intel Actiuni'
13
14  -- Insert into Obligatiuni
15  -- Datele de "Scadenta" sunt folosite ca exemp
16  INSERT INTO Obligatiuni VALUES (1, 'Romania',
17  INSERT INTO Obligatiuni VALUES (2, 'SUA', TO_D
18  INSERT INTO Obligatiuni VALUES (3, 'Germania',
19  INSERT INTO Obligatiuni VALUES (4, 'Franta', T
20  INSERT INTO Obligatiuni VALUES (5, 'Marea Brit
21  INSERT INTO Obligatiuni VALUES (6, 'Japonia',
22  INSERT INTO Obligatiuni VALUES (7, 'Australia'
23  INSERT INTO Obligatiuni VALUES (8, 'Canada', T
24  INSERT INTO Obligatiuni VALUES (9, 'China', TO_
25  INSERT INTO Obligatiuni VALUES (10, 'Brazilia'
26
```

Results: proiect.sql

```
01','YYYY-MM-DD'), 1.5);

1 row created.

Commit complete.

SQL> INSERT INTO Obligatiuni VALUES (6, 'Japonia', TO_DATE('2031-01-
01','YYYY-MM-DD'), 0.1);

1 row created.

Commit complete.

SQL> INSERT INTO Obligatiuni VALUES (7, 'Australia', TO_DATE('2033-01-
01','YYYY-MM-DD'), 2.0);

1 row created.

Commit complete.

SQL> INSERT INTO Obligatiuni VALUES (8, 'Canada', TO_DATE('2026-01-
01','YYYY-MM-DD'), 2.2);

1 row created.

Commit complete.

SQL> INSERT INTO Obligatiuni VALUES (9, 'China', TO_DATE('2034-01-
01','YYYY-MM-DD'), 3.0);

1 row created.

Commit complete.

SQL> INSERT INTO Obligatiuni VALUES (10, 'Brazilia', TO_DATE('2027-01-
01','YYYY-MM-DD'), 4.5);

1 row created.

Commit complete.
```

EXPLORER

- BD
  - Proiect_nou
    - Screen
    - Cerinte_Proiect.pdf
    - Curs_Introductiv_Sistem_de_Notare.pdf
    - proiect.sql M
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    - status.txt
    - Stoica_Ioan-creare_inserare.txt M
  - Proiect_vechi \ Proiect BD
    - Cerinte_proiect.pdf
    - MySQL_demo_physical_data_model_creat...
    - MySQL_demo_physical_data_model_drop....
    - MySQL_demo_physical_data_model-2022...
    - pct6.png
    - PROIECT_ EXEMPLU.pdf
    - PROIECT_ EXEMPLU2.docx
    - Status and details.docx
    - Stoica_Ioan-exemple.txt
    - Stoica_Ioan-proiect.pptx
  - Stoica_Ioan_251_1.sql

OUTLINE

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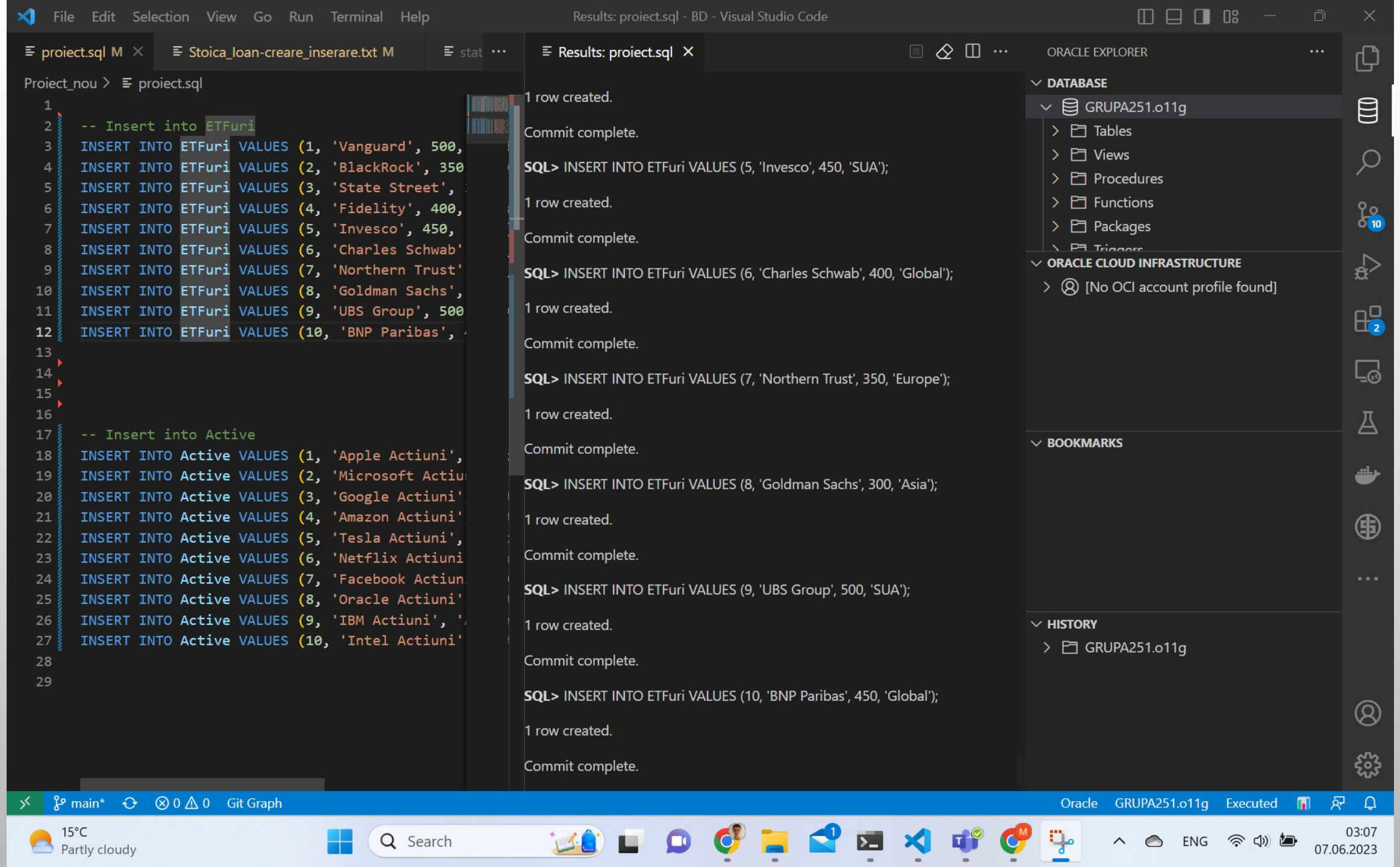
15°C Partly cloudy — Search — ENG — 03:04 07.06.2023


File Edit Selection View Go Run Terminal Help
Results: proiect.sql - BD - Visual Studio Code
proiect.sql M
Stoica_Ioan-creare_inserare.txt M
Proiect_nou > proiect.sql
-- Insert into ETFuri
INSERT INTO ETFuri VALUES (1, 'Vanguard', 500,
INSERT INTO ETFuri VALUES (2, 'BlackRock', 350
INSERT INTO ETFuri VALUES (3, 'State Street',
INSERT INTO ETFuri VALUES (4, 'Fidelity', 400,
INSERT INTO ETFuri VALUES (5, 'Invesco', 450,
INSERT INTO ETFuri VALUES (6, 'Charles Schwab'
INSERT INTO ETFuri VALUES (7, 'Northern Trust'
INSERT INTO ETFuri VALUES (8, 'Goldman Sachs',
INSERT INTO ETFuri VALUES (9, 'UBS Group', 500
INSERT INTO ETFuri VALUES (10, 'BNP Paribas',
-- Insert into Active
INSERT INTO Active VALUES (1, 'Apple Actiuni',
INSERT INTO Active VALUES (2, 'Microsoft Actiu
INSERT INTO Active VALUES (3, 'Google Actiuni'
INSERT INTO Active VALUES (4, 'Amazon Actiuni'
INSERT INTO Active VALUES (5, 'Tesla Actiuni',
INSERT INTO Active VALUES (6, 'Netflix Actiuni
INSERT INTO Active VALUES (7, 'Facebook Actiun
INSERT INTO Active VALUES (8, 'Oracle Actiuni'
INSERT INTO Active VALUES (9, 'IBM Actiuni', '
INSERT INTO Active VALUES (10, 'Intel Actiuni'
Results: proiect.sql
1 row created.
Commit complete.
SQL> INSERT INTO ETFuri VALUES (5, 'Invesco', 450, 'SUA');
1 row created.
Commit complete.
SQL> INSERT INTO ETFuri VALUES (6, 'Charles Schwab', 400, 'Global');
1 row created.
Commit complete.
SQL> INSERT INTO ETFuri VALUES (7, 'Northern Trust', 350, 'Europe');
1 row created.
Commit complete.
SQL> INSERT INTO ETFuri VALUES (8, 'Goldman Sachs', 300, 'Asia');
1 row created.
Commit complete.
SQL> INSERT INTO ETFuri VALUES (9, 'UBS Group', 500, 'SUA');
1 row created.
Commit complete.
SQL> INSERT INTO ETFuri VALUES (10, 'BNP Paribas', 450, 'Global');
1 row created.
Commit complete.
ORACLE EXPLORER
DATABASE
GRUPA251.o11g
Tables
Views
Procedures
Functions
Packages
ORACLE CLOUD INFRASTRUCTURE
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BOOKMARKS
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GRUPA251.o11g
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07.06.2023

Oracle SQL Developer : grupa251

File Edit View Navigate Run Source Team Tools Window Help

Connections

Oracle Connections
- grupa251
  - Tables (Filt
  - Views
  - Indexes
  - Packages
  - Procedures
  - Functions
  - Operators
  - Queues
  - Queues Ta
  - Triggers
  - Types
  - Sequences
  - Materialize

Reports

All Reports
- Analytic View Rep
- Data Dictionary Re
- Data Modeler Rep
- OLAP Reports
- TimesTen Reports
- User Defined Repo

examen.sql | S152023EXAM1.sql | Welcome Page | grupa251

grupa251

Worksheet | Query Builder

```
-- Insert into Blockchain
INSERT INTO Blockchain VALUES (1, 'Bitcoin', 'Proof-of-Work', 'BTC');
INSERT INTO Blockchain VALUES (2, 'Ethereum', 'Proof-of-Stake', 'ETH');
INSERT INTO Blockchain VALUES (3, 'Cardano', 'Proof-of-Stake', 'ADA');
INSERT INTO Blockchain VALUES (4, 'Polkadot', 'Proof-of-Stake', 'DOT');
INSERT INTO Blockchain VALUES (5, 'Litecoin', 'Proof-of-Work', 'LTC');
INSERT INTO Blockchain VALUES (6, 'Chainlink', 'Proof-of-Stake', 'LINK');
INSERT INTO Blockchain VALUES (7, 'Ripple', 'Consensus', 'XRP');
INSERT INTO Blockchain VALUES (8, 'Stellar', 'Consensus', 'XLM');
INSERT INTO Blockchain VALUES (9, 'Dogecoin', 'Proof-of-Work', 'DOGE');
INSERT INTO Blockchain VALUES (10, 'Tron', 'Proof-of-Stake', 'TRX');
```

Script Output

Task completed in 0,044 seconds

```
1 row inserted.

1 row inserted.

1 row inserted.

1 row inserted.

1 row inserted.
```

Click on an identifier with the Control key down to perform "Go to Declaration"

Line 11 Column 19 | Insert | Modified | Windows: Cf

15°C Partly cloudy

Search

ENG

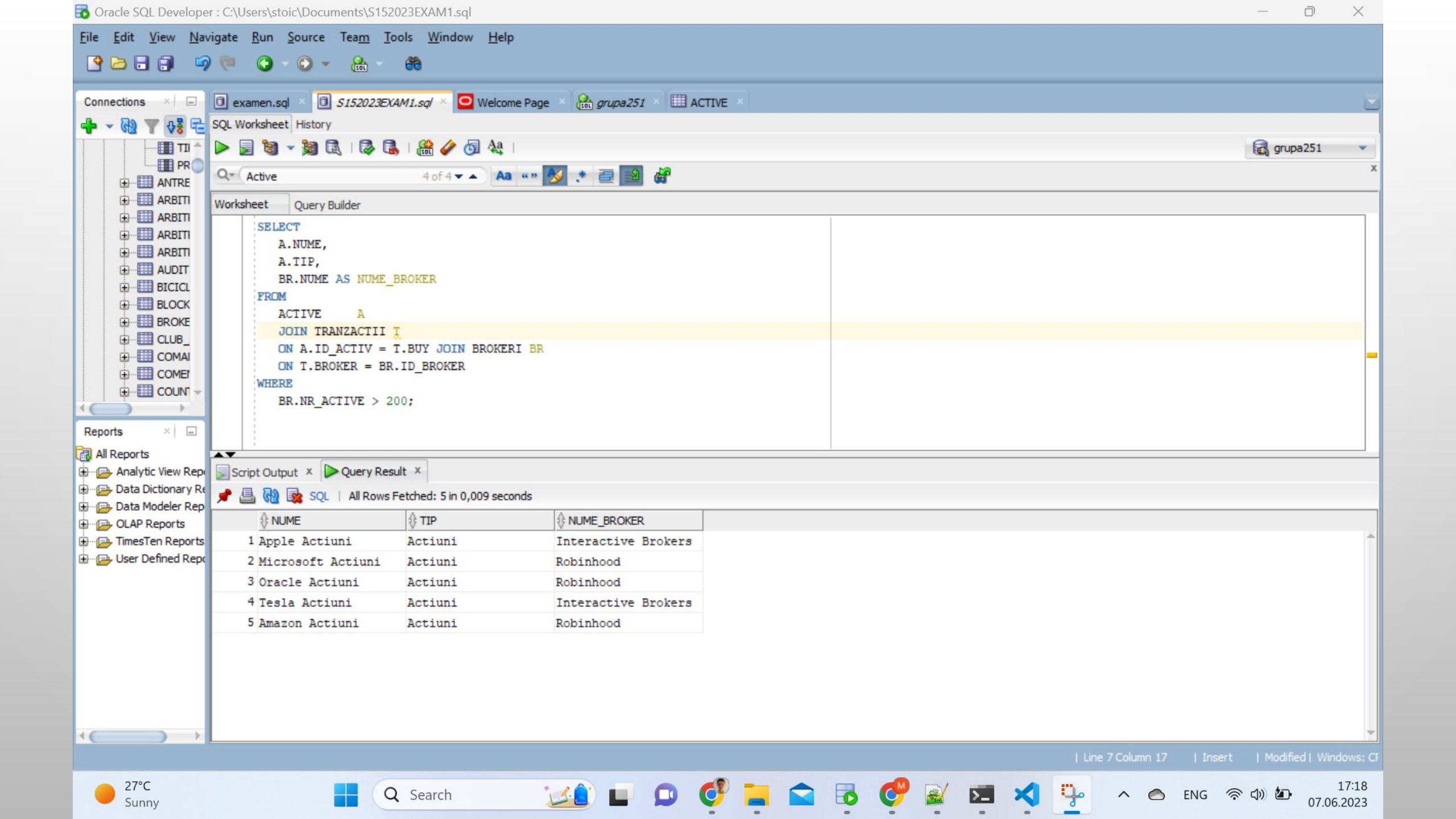
03:10
07.06.2023

12. Formulati in limbaj natural si implementati 5 cereri SQL complexe ce vor utiliza, in ansamblul lor, urmatoarele elemente:

1. subcereri sincronizate in care intervin cel putin 3 tabele

```
-- CERINTA: Am nevoie să ob□in o listă cu numele □i tipul activelor tranzac□ionate prin intermediul brokerilor care de□in mai mult de 200 de active. În această listă, vreau să fie inclus □i numele brokerului prin intermediul căruia s-a realizat fiecare tranzac□ie
```

```
SELECT
    A.NUME,
    A.TIP,
    BR.NUME AS NUME_BROKER
FROM
    ACTIVE      A
    JOIN TRANZACTII T
    ON A.ID_ACTIV = T.BUY JOIN BROKERI BR
    ON T.BROKER = BR.ID_BROKER
WHERE
    BR.NR_ACTIVE > 200;
```


Oracle SQL Developer : C:\Users\stoic\Documents\S152023EXAM1.sql
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Worksheet Query Builder
SELECT
A.NUME,
A.TIP,
BR.NUME AS NUME_BROKER
FROM
ACTIVE A
JOIN TRANZACTII T
ON A.ID_ACTIV = T.BUY JOIN BROKERI BR
ON T.BROKER = BR.ID_BROKER
WHERE
BR.NR_ACTIVE > 200;
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Script Output
Query Result
SQL | All Rows Fetched: 5 in 0,009 seconds
NUME TIP NUME_BROKER
1 Apple Actiuni Actiuni Interactive Brokers
2 Microsoft Actiuni Actiuni Robinhood
3 Oracle Actiuni Actiuni Robinhood
4 Tesla Actiuni Actiuni Interactive Brokers
5 Amazon Actiuni Actiuni Robinhood
Line 7 Column 17 Insert Modified Windows: Cf
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2. subcereri nesincronizate in clauza FROM

```
-- CERINTA: Doresc o listă cu numele □i pre□urile activelor de tip 'Ac□iuni', ordonată
descrescător după pre□.
SELECT
    ACT.NUME,
    ACT.PRET
FROM
    (
        SELECT
            A.NUME,
            A.PRET
        FROM
            ACTIVE A
        WHERE
            A.TIP = 'Actiuni'
    ) ACT
ORDER BY
    ACT.PRET DESC;
```

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Worksheet Query Builder

```
   ACT.PRET
FROM
   (
      SELECT
         A.NUME,
         A.PRET
      FROM
         ACTIVE A
      WHERE
         A.TIP = 'Actiuni'
   ) ACT
ORDER BY
   ACT.PRET DESC;
```

Reports

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Script Output | Query Result

SQL | All Rows Fetched: 10 in 0,007 seconds

	NUME	PRET
1	Amazon Actiuni	2000.1
2	Google Actiuni	1520.2
3	Netflix Actiuni	550
4	Facebook Actiuni	300
5	Microsoft Actiuni	210.35
6	Tesla Actiuni	180.5
7	Apple Actiuni	150.25
8	IBM Actiuni	140
9	Oracle Actiuni	70
10	Intel Actiuni	60

Line 10 Column 11 | Insert | Modified | Windows: Cf

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```sql
-- 3.grupari de date cu subcereri nesincronizate in care intervin cel putin 3
-- tabele, functii grup, filtrare la nivel de grupuri (in cadrul aceleiasi cereri) + clauza Where
-- CERINTA: Am nevoie de o listă cu numele brokerilor care au efectuat mai mult de o tranzac□ie cu
active de tip 'Ac□iuni'. În această listă, vreau să includ numărul total de tranzac□ii realizate
de fiecare broker □i pre□ul mediu al tranzac□iilor.
SELECT
    BR.NUME,
    COUNT(*)     AS NR_TRANZACTII,
    AVG(T.PRET) AS PRET_MEDIU
FROM
    BROKERI BR
    JOIN (
        SELECT T.BROKER, T.PRET
        FROM TRANZACTII T
        WHERE T.SELL IN (
            SELECT A.ID_ACTIV
            FROM ACTIVE     A
            WHERE A.TIP = 'Actiuni' )) T
    ON BR.ID_BROKER = T.BROKER
GROUP BY BR.NUME
HAVING COUNT(*) > 1;
```

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Worksheet Query Builder

```
-- 3. Grouping with non-correlated subqueries with at least three tables involved, group functions, group filtering:
SELECT
   BR.NUME,
   COUNT(*)     AS NR_TRANZACTII,
   AVG(T.PRET) AS PRET_MEDIU
FROM
   BROKERI BR
   JOIN (
      SELECT
         T.BROKER,
         T.PRET
      FROM
         TRANZACTII T
```

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Script Output | Query Result

SQL | All Rows Fetched: 3 in 0 seconds

	NUME	NR_TRANZACTII	PRET_MEDIU
1	Interactive Brokers	2	97.9
2	Robinhood	3	105.41666666666666666666666666666666666667
3	eToro	4	96.975

Line 19 Column 9 | Insert | Modified | Windows: Cf

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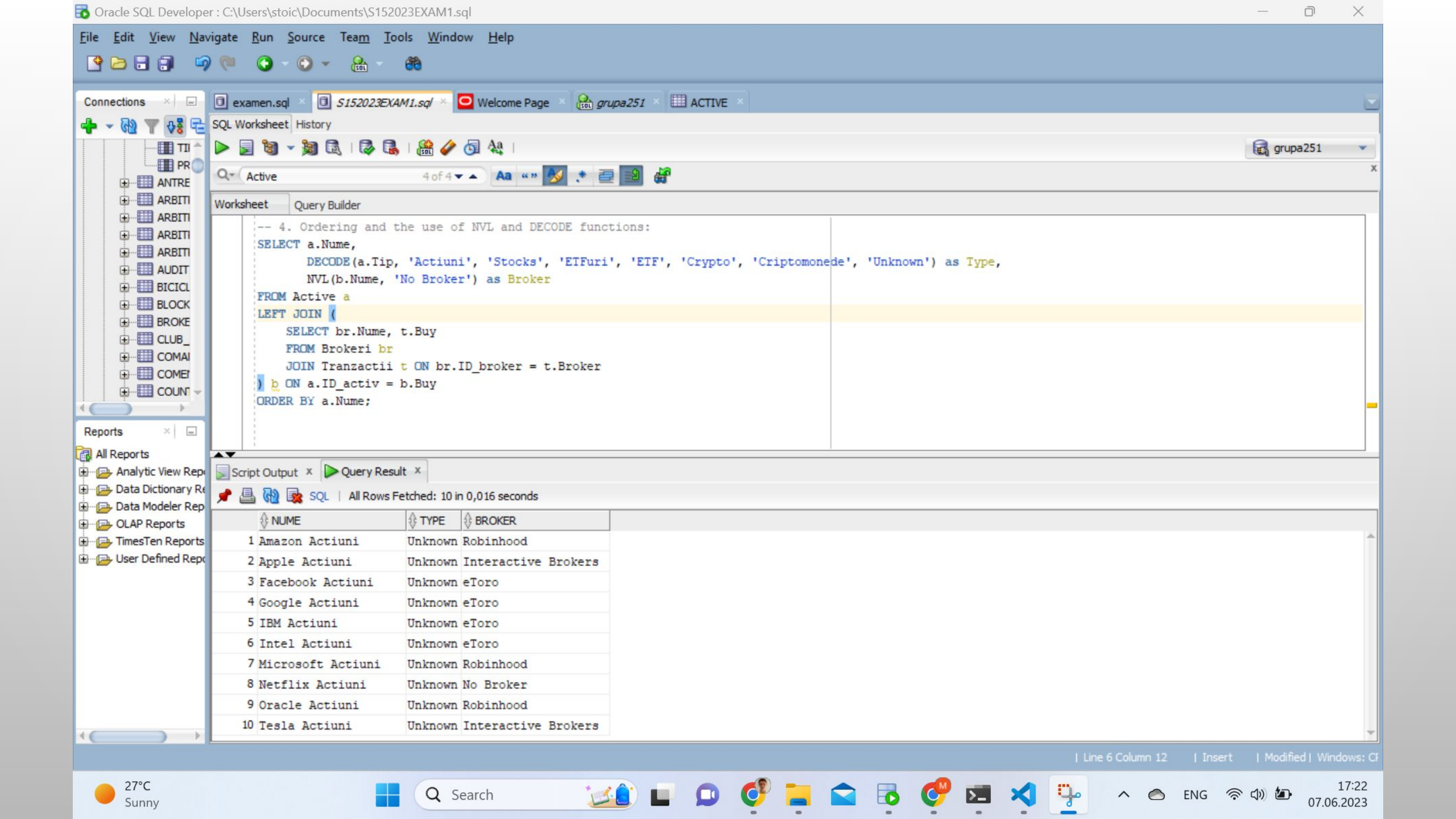
07.06.2023

```sql
-- 4. ordonari si utilizarea functiilor NVL si DECODE (in cadrul aceleiasi cereri)
-- CERINTA: Aș dori o listă cu numele activelor și tipul lor, tradus în engleză. Pentru active de tip 'Actiuni', tipul ar trebui să fie 'Stocks'; pentru 'ETFuri', 'ETF'; iar pentru 'Crypto', 'Criptomonede'. Dacă tipul activului nu se încadrează în aceste categorii, ar trebui să fie clasificat ca 'Unknown'. De asemenea, aș dori să se afișeze numele brokerului care a tranzacționat fiecare activ; în cazul în care brokerul nu este cunoscut, trebuie să fie indicat cu 'No Broker'. Lista ar trebui să fie ordonată după numele activelor.
SELECT
   A.NUME,
   DECODE(A.TIP,
   'Actiuni',
   'Stocks',
   'ETFuri',
   'ETF',
   'Crypto',
   'Criptomonede',
   'Unknown')   AS TYPE,
   NVL(B.NUME,
   'No Broker') AS BROKER
FROM
   ACTIVE A
   LEFT JOIN (
      SELECT
         BR.NUME,
         T.BUY
      FROM
         BROKERI    BR
         JOIN TRANZACTII T
         ON BR.ID_BROKER = T.BROKER
   ) B
   ON A.ID_ACTIV = B.BUY
ORDER BY
   A.NUME;
```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Active 4 of 4
Worksheet Query Builder
-- 4. Ordering and the use of NVL and DECODE functions:
SELECT a.Nume,
DECODE(a.Tip, 'Actiuni', 'Stocks', 'ETFuri', 'ETF', 'Crypto', 'Criptomonede', 'Unknown') as Type,
NVL(b.Nume, 'No Broker') as Broker
FROM Active a
LEFT JOIN (
SELECT br.Nume, t.Buy
FROM Brokeri br
JOIN Tranzactii t ON br.ID_broker = t.Broker
) b ON a.ID_activ = b.Buy
ORDER BY a.Nume;
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OLAP Reports
TimesTen Reports
User Defined Repo
Script Output
Query Result
SQL | All Rows Fetched: 10 in 0,016 seconds
NUME TYPE BROKER
1 Amazon Actiuni Unknown Robinhood
2 Apple Actiuni Unknown Interactive Brokers
3 Facebook Actiuni Unknown eToro
4 Google Actiuni Unknown eToro
5 IBM Actiuni Unknown eToro
6 Intel Actiuni Unknown eToro
7 Microsoft Actiuni Unknown Robinhood
8 Netflix Actiuni Unknown No Broker
9 Oracle Actiuni Unknown Robinhood
10 Tesla Actiuni Unknown Interactive Brokers
Line 6 Column 12 Insert Modified Windows: Cf
27°C Sunny
Search
ENG
17:22
07.06.2023

```sql
-- 5. utilizarea a cel putin 2 functii pe siruri de caractere, 2 functii pe date
-- calendaristice, a cel putin unei expresii CASE
-- CERINTA: A dori s ob in o list cu id-ul tranzac iilor, împreun cu vechimea acestora. Numele brokerilor ar trebui s fie convertite la majuscule i s includ doar primele trei caractere. Vechimea tranzac iilor ar trebui calculat în luni, începând de la data curent . Dac vechimea tranzac iei este mai mic de 6 luni, aceasta ar trebui clasificat ca 'Recent'; în caz contrar, ca 'Old'. Lista ar trebui s includ doar tranzac iile pentru care numele brokerilor au mai mult de un caracter i ar trebui s fie ordonat descresc tor dup data tranzac iei
WITH T_INFO AS (
    SELECT
        T.ID_TRANZACTIE,
        T.DATA,
        UPPER(SUBSTR(BR.NUME,
        1,
        3))      AS BROKER,
        MONTHS_BETWEEN(SYSDATE,
        T.DATA) AS MONTHS_AGO
    FROM
        TRANZACTII T
        JOIN BROKERI BR
        ON T.BROKER = BR.ID_BROKER
)
SELECT
    TI.ID_TRANZACTIE,
    CASE
        WHEN TI.MONTHS_AGO < 6 THEN
            'Recent'
        ELSE
            'Old'
    END     AS TRANSACTION_AGE
FROM
    T_INFO     TI
WHERE
    LENGTH(TI.BROKER) > 1
ORDER BY
    TI.DATA DESC;
```

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Worksheet | Query Builder

```
WITH t_info AS (
    SELECT t.ID_tranzactie, t.Data, UPPER(SUBSTR(br.Nume, 1, 3)) as Broker, MONTHS_BETWEEN(SYSDATE, t.Data) as Months_Ago
    FROM Tranzactii t
    JOIN Brokeri br ON t.Broker = br.ID_broker
)
SELECT ti.ID_tranzactie,
       CASE
           WHEN ti.Months_Ago < 6 THEN 'Recent'
           ELSE 'Old'
       END as Transaction_Age
FROM t_info ti
WHERE LENGTH(ti.Broker) > 1
ORDER BY ti.Data DESC;
```

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Script Output | Query Result

SQL | All Rows Fetched: 9 in 0,015 seconds

	ID_TRANZACTIE	TRANSACTION_AGE
1	10	Recent
2	7	Recent
3	3	Recent
4	1	Recent
5	4	Recent
6	5	Recent
7	9	Recent
8	6	Recent
9	8	Recent

Line 11 Column 18 | Insert | Modified | Windows: CF

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ENG

17:23
07.06.2023

13. Implementarea a 3 operatii de actualizare si 3 operatii de suprimare a datelor utilizand subcereri

```sql
-- Actualizează tipul tuturor activelor a căror preț este mai mare decât prețul mediu al tuturor activelor la 'Premium'
UPDATE Active SET Tip = 'Premium'
WHERE Pret > (SELECT AVG(Pret) FROM Active);

-- Actualizează sediul tuturor brokerilor care au un comision de retragere mai mare decât media comisioanelor de retragere ale tuturor brokerilor la 'Expensive'
UPDATE Brokeri SET Sediu = 'Expensive'
WHERE Comision_retragere > (SELECT AVG(Comision_retragere) FROM Brokeri);

-- Actualizează numărul maxim al criptomonedelor la 10000 dacă blockchain-ul asociat este de tipul 'Proof of Stake'
UPDATE Criptomonede SET Nr_maxim = 10000
WHERE Blockchain IN (SELECT ID_blockchain FROM Blockchain WHERE Tip_of_proof = 'Proof of Stake');
```

```sql
-- terge toate tranzac iile care au un volum mai mic decât volumul mediu al tuturor tranzac iilor
DELETE FROM Tranzactii
WHERE Volum < (SELECT AVG(Volum) FROM Tranzactii);

-- sterge toti brokeri cu comisionul de retragere mai mare cu 10% decat media comisioanelor de retragere
DELETE FROM Brokeri
WHERE Comision_retragere > (SELECT 1.1 * AVG(Comision_retragere) FROM Brokeri);

-- sterge toti brokeri cu Comision_tranzactie mai mare cu 50% decat media Comision_tranzactie
DELETE FROM Brokeri
WHERE Comision_tranzactie > (SELECT 1.5 * AVG(Comision_tranzactie) FROM Brokeri);
```

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Worksheet Query Builder

```
-- Actualizează tipul tuturor activelor a căror preț este mai mare decât prețul mediu al tuturor activelor la 'Premium'
UPDATE Active SET Tip = 'Premium'
WHERE Pret > (SELECT AVG(Pret) FROM Active);

-- Actualizează sediul tuturor brokerilor care au un comision de retragere mai mare decât media comisioanelor de retragere ale tuturor brokerilor la 'Exper
UPDATE Brokeri SET Sediu = 'Expensive'
WHERE Comision_retragere > (SELECT AVG(Comision_retragere) FROM Brokeri);

-- Actualizează numărul maxim al criptomonedelor la 10000 dacă blockchain-ul asociat este de tipul 'Proof of Stake'
UPDATE Criptomonede SET Nr_maxim = 10000
WHERE Blockchain IN (SELECT ID_blockchain FROM Blockchain WHERE Tip_of_proof = 'Proof of Stake');
```

Reports

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Script Output | Query Result

Task completed in 0,025 seconds

```
3 rows updated.

3 rows updated.

3 rows updated.

0 rows updated.
```

Line 4 Column 1 | Insert | Modified | Windows: Cf

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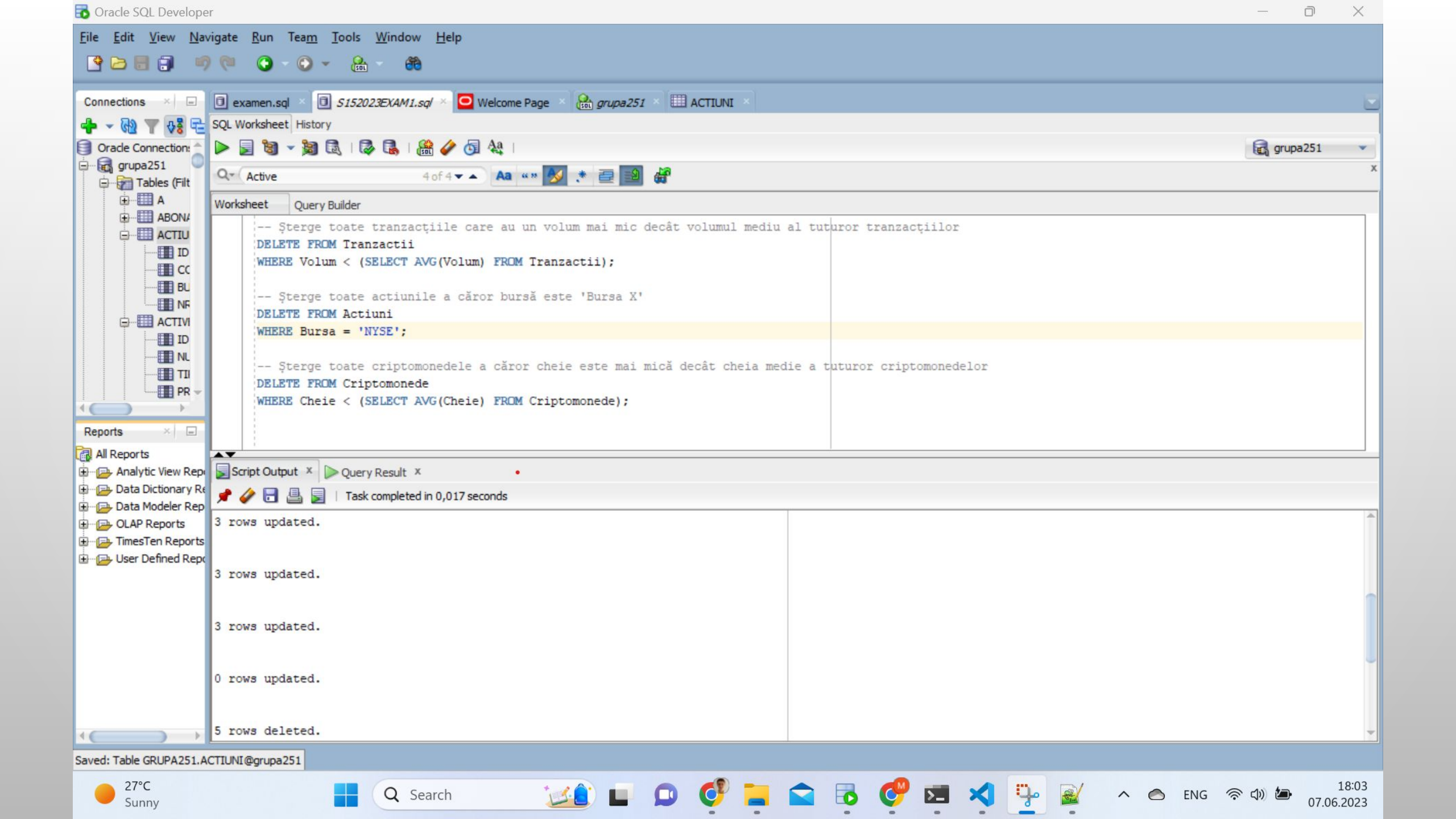
ENG

18:00
07.06.2023


Oracle SQL Developer
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SQL Worksheet History
grupa251
Active 4 of 4
Worksheet Query Builder
-- Șterge toate tranzacțiile care au un volum mai mic decât volumul mediu al tuturor tranzacțiilor
DELETE FROM Tranzactii
WHERE Volum < (SELECT AVG(Volum) FROM Tranzactii);
-- Șterge toate actiunile a căror bursă este 'Bursa X'
DELETE FROM Actiuni
WHERE Bursa = 'NYSE';
-- Șterge toate criptomonedele a căror cheie este mai mică decât cheia medie a tuturor criptomonedelor
DELETE FROM Criptomonede
WHERE Cheie < (SELECT AVG(Cheie) FROM Criptomonede);
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Script Output
Query Result
Task completed in 0,017 seconds
3 rows updated.
3 rows updated.
3 rows updated.
0 rows updated.
5 rows deleted.
Saved: Table GRUPA251.ACTIUNI@grupa251
27°C Sunny
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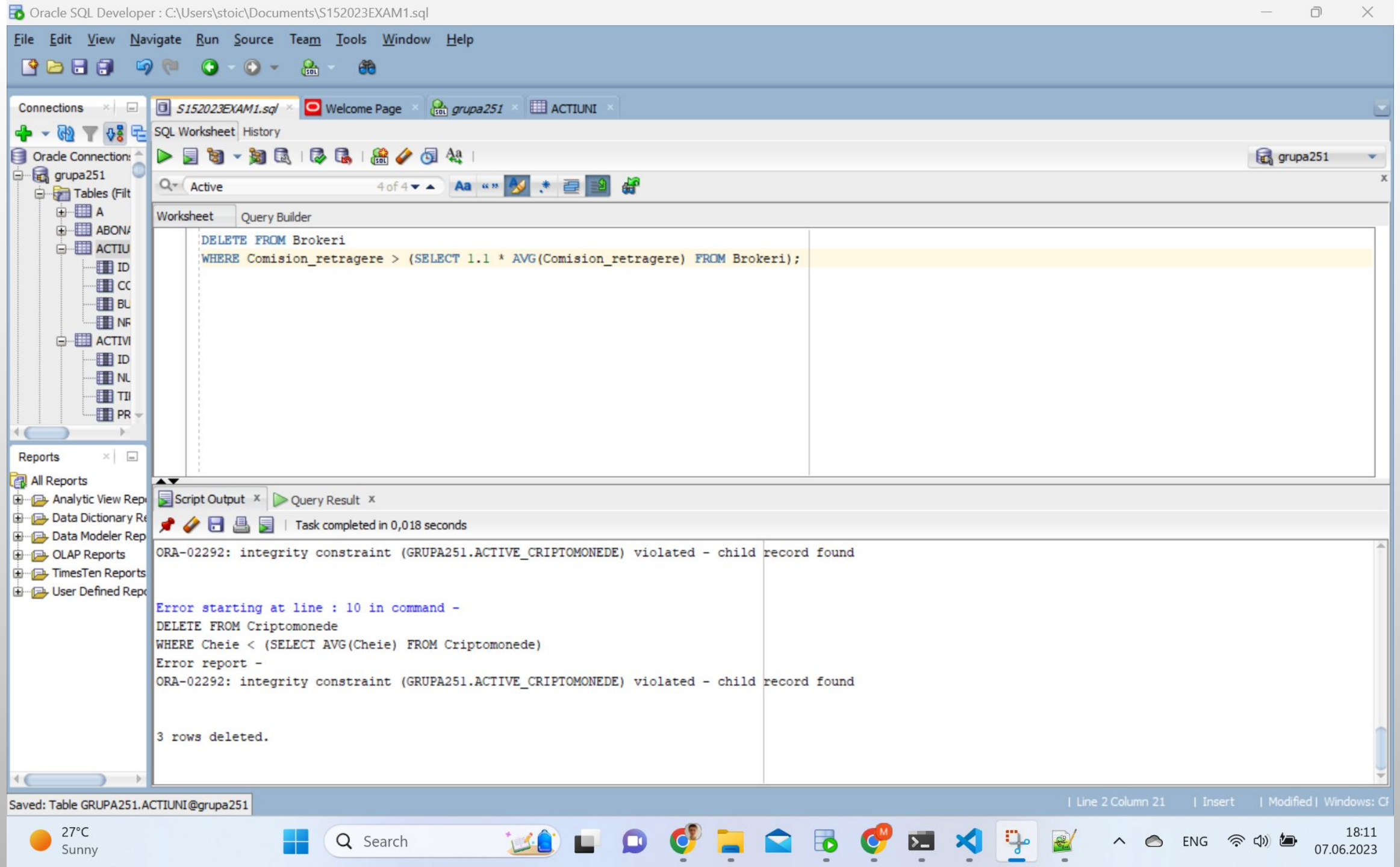
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Worksheet
Query Builder
DELETE FROM Brokeri
WHERE Comision_retragere > (SELECT 1.1 * AVG(Comision_retragere) FROM Brokeri);
Script Output
Query Result
Task completed in 0,018 seconds
ORA-02292: integrity constraint (GRUPA251.ACTIVE_CRIPTOMONEDE) violated - child record found
Error starting at line : 10 in command -
DELETE FROM Criptomonede
WHERE Cheie < (SELECT AVG(Cheie) FROM Criptomonede)
Error report -
ORA-02292: integrity constraint (GRUPA251.ACTIVE_CRIPTOMONEDE) violated - child record found
3 rows deleted.
Saved: Table GRUPA251.ACTIUNI@grupa251
Line 2 Column 21
Insert
Modified
Windows: Cf
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Sunny
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ENG
18:11
07.06.2023