PROIECT BD – CONSTANTIN TEODOR VASILE 1058

Descrierea, Schema si Relatiile Bazei de date

Baza de date a fost realizata pentru gestionarea unui club sportiv.

Aceasta prezinta informatii cu privire la atletii inscrisi in club (Nume, varsta, sex, telefon, oras) ce rezultate au obtinut la diferite competitii (numele competitiei, tipul medaliei) , de cine sunt antrenati (numele, exparienta si domeniul predat de antrenori) si ce tip de sport practica (numele tipului).

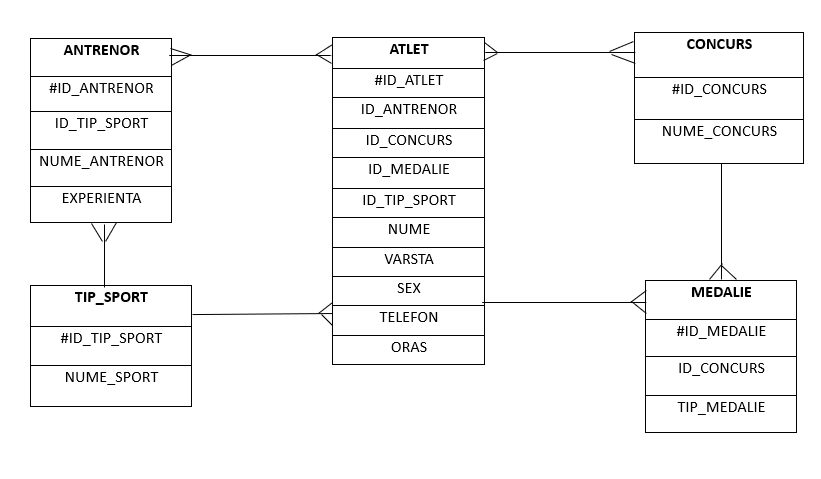
Limitele id-urilor in functie de tabele:

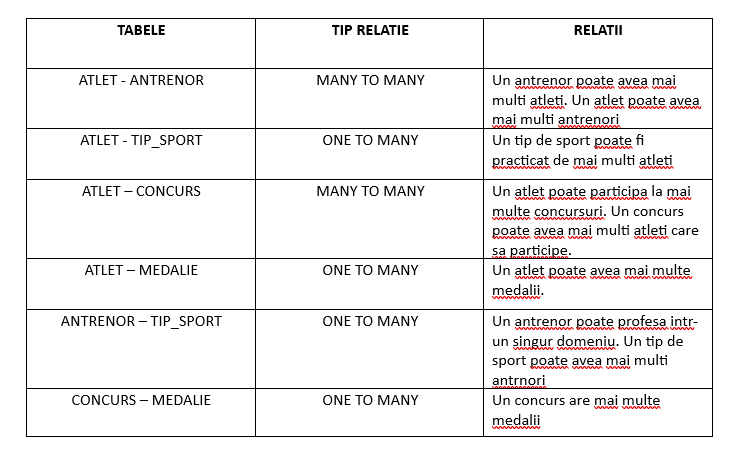
100-199 – Atleti

200-299 – Antrnori

300-399 – Concurs

400-499 – Medalii

500-599 – Tip\_sport



Crearea Tabelelor

CREATE TABLE concurs (

id\_concurs NUMBER(5) CONSTRAINT pk\_concurs\_id PRIMARY KEY,

nume\_concurs VARCHAR2(10)

);

CREATE TABLE tip\_sport (

id\_tip\_sport NUMBER(5) CONSTRAINT pk\_tip\_sport\_id PRIMARY KEY,

nume\_sport VARCHAR2(10)

);

CREATE TABLE antrenor (

id\_antrenor NUMBER(5) CONSTRAINT pk\_antrenor\_id PRIMARY KEY,

id\_tip\_sport NUMBER(5),

nume\_antrenor VARCHAR2(10),

experienta NUMBER(5),

CONSTRAINT fk\_id\_tip\_sport FOREIGN KEY (id\_tip\_sport) REFERENCES tip\_sport(id\_tip\_sport)

);

CREATE TABLE medalie (

id\_medalie NUMBER(5) CONSTRAINT pk\_medalie\_id PRIMARY KEY,

id\_concurs NUMBER(5),

tip\_medalie VARCHAR2(10),

CONSTRAINT fk\_id\_concurs FOREIGN KEY (id\_concurs) REFERENCES concurs(id\_concurs)

);

CREATE TABLE atlet (

id\_atlet NUMBER(5) CONSTRAINT pk\_atlet\_id PRIMARY KEY,

id\_antrenor NUMBER(5),

id\_concurs NUMBER(5),

id\_medalie NUMBER(5),

id\_tip\_sport NUMBER(5),

nume VARCHAR2(10),

varsta VARCHAR2(10),

sex VARCHAR2(10),

telefon number(15),

oras VARCHAR2(10),

CONSTRAINT fkey\_id\_antrenor FOREIGN KEY (id\_antrenor) REFERENCES antrenor(id\_antrenor),

CONSTRAINT fkey\_id\_concurs FOREIGN KEY (id\_concurs) REFERENCES concurs(id\_concurs),

CONSTRAINT fkey\_id\_medalie FOREIGN KEY (id\_medalie) REFERENCES medalie(id\_medalie),

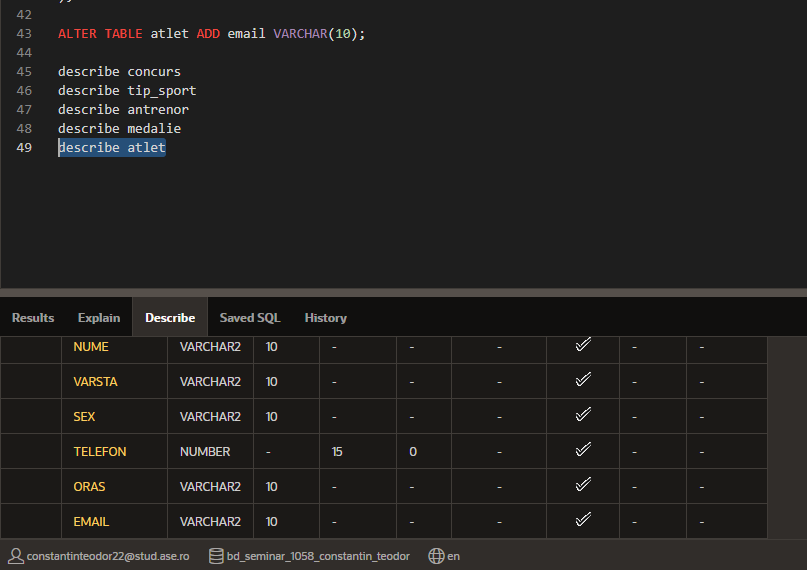
CONSTRAINT fkey\_id\_tip\_sport FOREIGN KEY (id\_tip\_sport) REFERENCES tip\_sport(id\_tip\_sport)

);

Actualizarea structurii tabelelor si modificarea restrictiilor de integritate

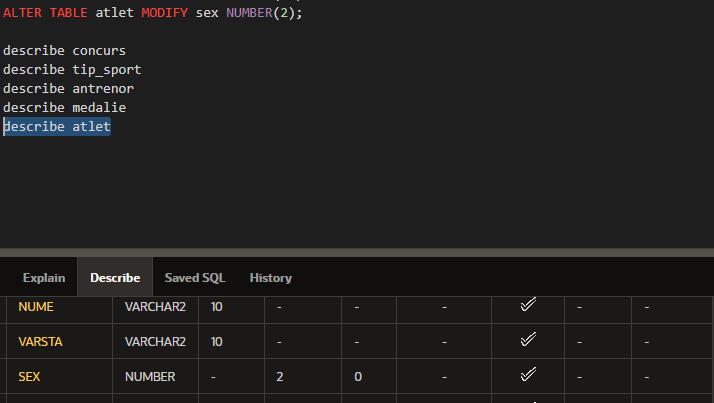
1. Adaugarea unei noi coloane EMAIL in tabela ATLET:

ALTER TABLE atlet ADD email VARCHAR(10);

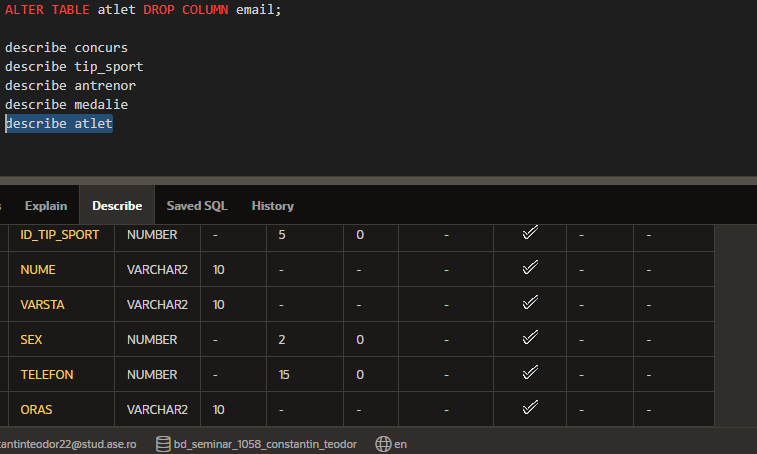


1. Modificarea tipului de data al coloanei SEX din tabela ATLET:

ALTER TABLE atlet MODIFY sex NUMBER(2);

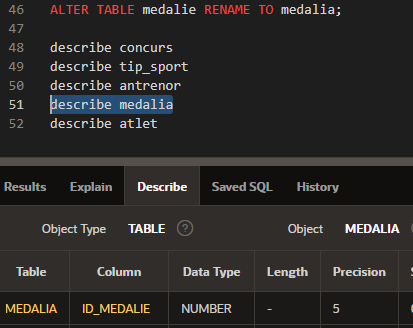


1. Stergerea coloanei EMAIL din tabela ATLET:

ALTER TABLE atlet DROP COLUMN email;

1. Redenumirea tabelei MEDALIE in MEDALIA

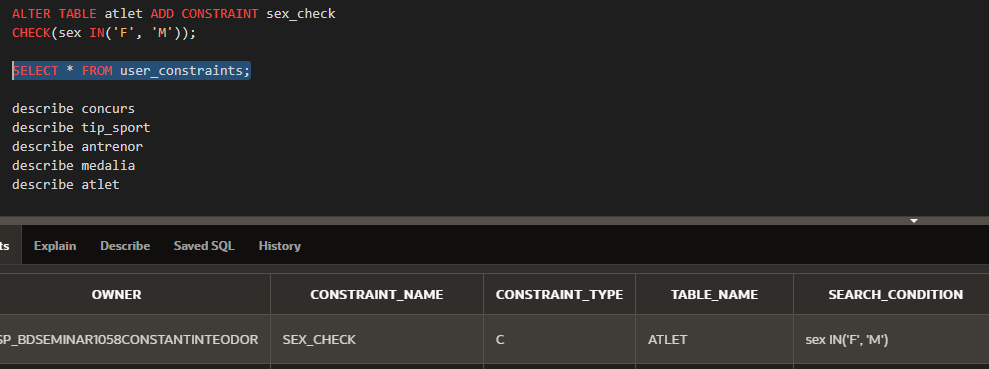
ALTER TABLE medalie RENAME TO medalia;



1. Adaugarea unei restrictii pe coloana SEX

ALTER TABLE atlet ADD CONSTRAINT sex\_check;

CHECK(sex IN('F’, 'M'));



ADAUGAREA DE INREGISTRARI IN FIECARE TABELA

INSERT INTO concurs VALUES (301, 'CNSW 2020');

INSERT INTO concurs VALUES (302, 'CNSW 2021');

INSERT INTO concurs VALUES (303, 'CNSW 2022');

INSERT INTO concurs VALUES (304, 'CNSW 2023');

INSERT INTO concurs VALUES (305, 'CNSW 2019');

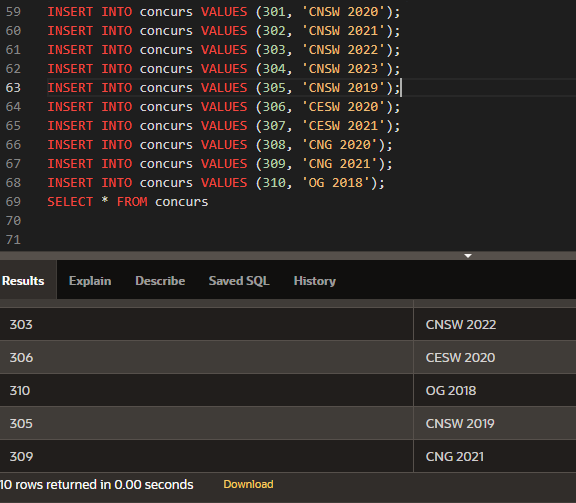
INSERT INTO concurs VALUES (306, 'CESW 2020');

INSERT INTO concurs VALUES (307, 'CESW 2021');

INSERT INTO concurs VALUES (308, 'CNG 2020');

INSERT INTO concurs VALUES (309, 'CNG 2021');

INSERT INTO concurs VALUES (310, 'OG 2018');

SELECT \* FROM concurs

INSERT INTO tip\_sport VALUES (501, 'SW'); /\* Street Workout / Calisthenics \*/

INSERT INTO tip\_sport VALUES (502, 'Gimnastica');

INSERT INTO tip\_sport VALUES (503, 'Box');

INSERT INTO tip\_sport VALUES (504, 'Judo');

INSERT INTO tip\_sport VALUES (505, 'Fotbal');

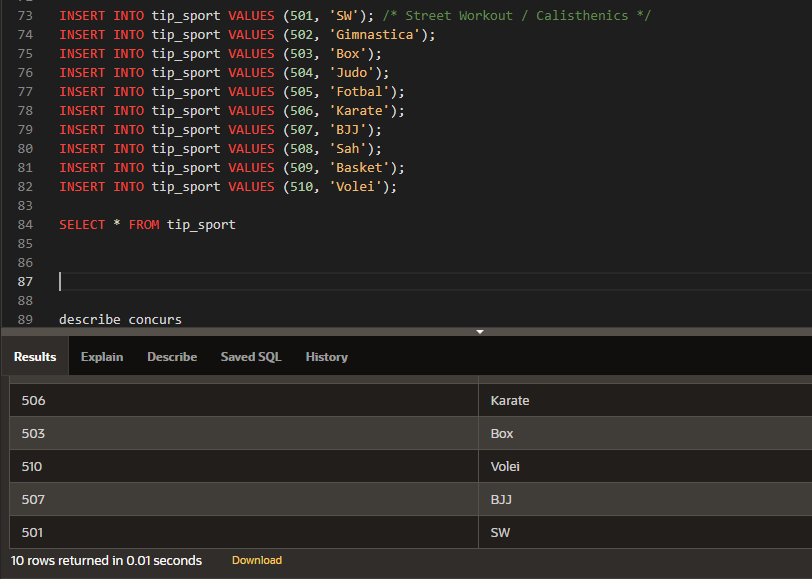
INSERT INTO tip\_sport VALUES (506, 'Karate');

INSERT INTO tip\_sport VALUES (507, 'BJJ');

INSERT INTO tip\_sport VALUES (508, 'Sah');

INSERT INTO tip\_sport VALUES (509, 'Basket');

INSERT INTO tip\_sport VALUES (510, 'Volei');

SELECT \* FROM tip\_sport

INSERT INTO antrenor VALUES (201, 501, 'Raimy', 10);

INSERT INTO antrenor VALUES (202, 501, 'Robert', 6);

INSERT INTO antrenor VALUES (203, 501, 'Alex', 20);

INSERT INTO antrenor VALUES (204, 501, 'Daniel', 30);

INSERT INTO antrenor VALUES (205, 501, 'Cosmin', 10);

INSERT INTO antrenor VALUES (206, 501, 'Florentin', 14);

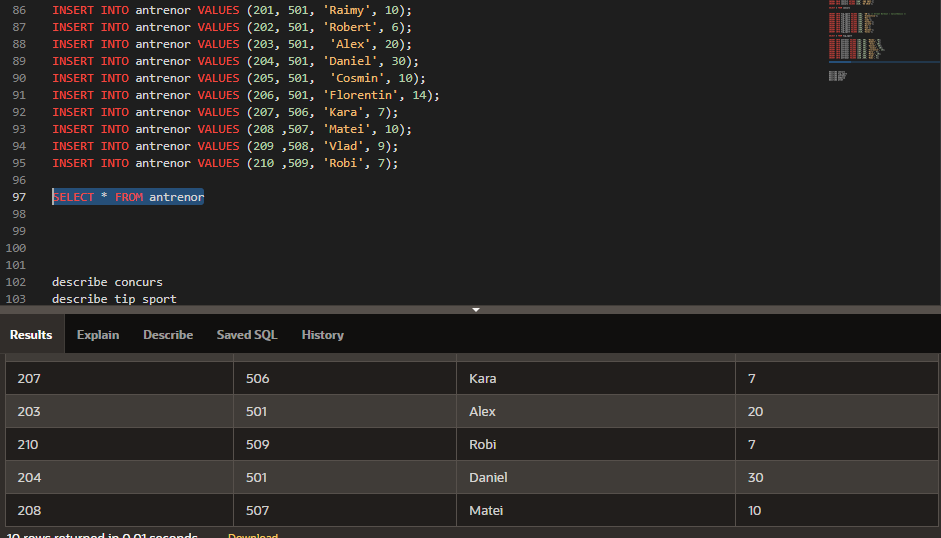
INSERT INTO antrenor VALUES (207, 506, 'Kara', 7);

INSERT INTO antrenor VALUES (208 ,507, 'Matei', 10);

INSERT INTO antrenor VALUES (209 ,508, 'Vlad', 9);

INSERT INTO antrenor VALUES (210 ,509, 'Robi', 7);

SELECT \* FROM antrenor



INSERT INTO medalia VALUES (401, 301, 'Aur');

INSERT INTO medalia VALUES (402, 302, 'Aur');

INSERT INTO medalia VALUES (403, 303, 'Argint');

INSERT INTO medalia VALUES (404, 304, 'Aur');

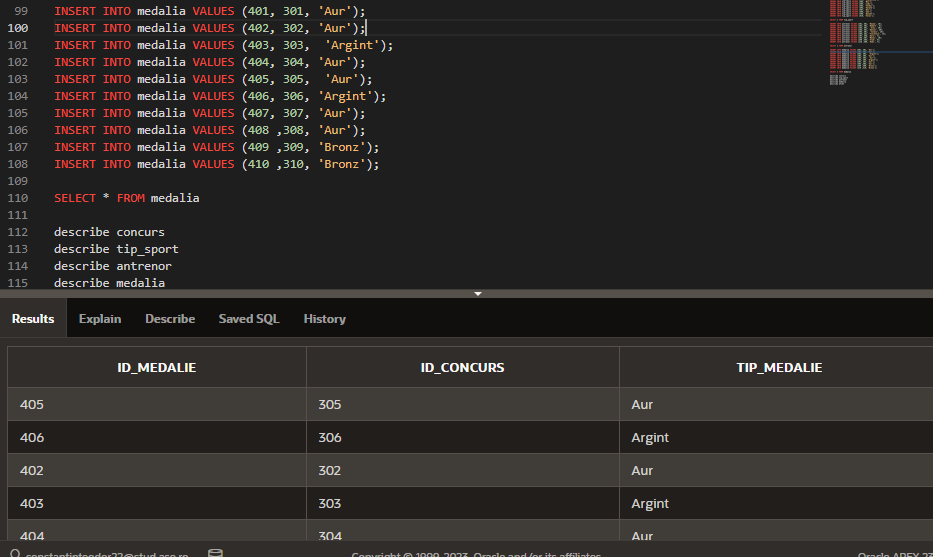
INSERT INTO medalia VALUES (405, 305, 'Aur');

INSERT INTO medalia VALUES (406, 306, 'Argint');

INSERT INTO medalia VALUES (407, 307, 'Aur');

INSERT INTO medalia VALUES (408 ,308, 'Aur');

INSERT INTO medalia VALUES (409 ,309, 'Bronz');

INSERT INTO medalia VALUE S (410 ,310, 'Bronz');

INSERT INTO atlet VALUES (101, 201, 301, 401, 501, 'Marcel', 22, 0 , '07873248723', 'BACAU');

INSERT INTO atlet VALUES (102, 201, 302, 402, 501, 'Alexandru', 22, 0 , '07874648723', 'BUCURESTI');

INSERT INTO atlet VALUES (103, 203, 303, 403, 501, 'Teodor', 21, 0 , '078732746565423', 'SLOBOZIA');

INSERT INTO atlet VALUES (104, 204, 304, 404, 501, 'Teo', 20, 1 , '078732487236574', 'CLUJ');

INSERT INTO atlet VALUES (105, 202, 305, 405, 501, 'Mara', 29, 1 , '078732487234576', 'BARLAD');

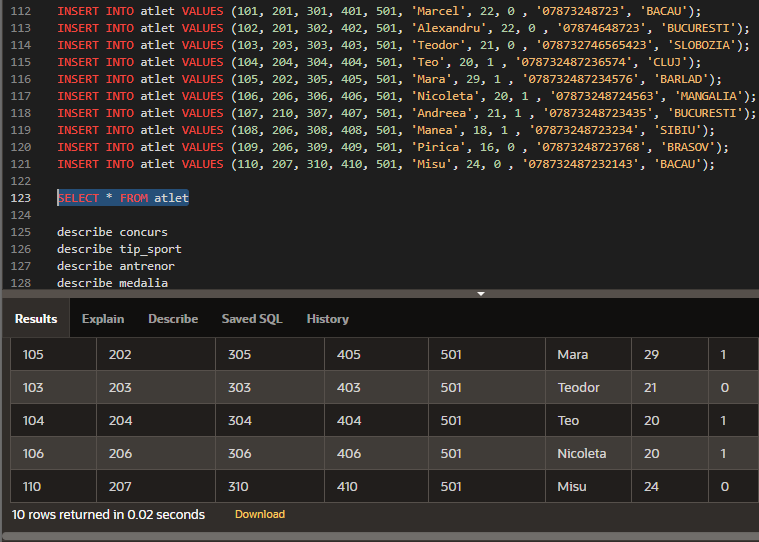
INSERT INTO atlet VALUES (106, 206, 306, 406, 501, 'Nicoleta', 20, 1 , '07873248724563', 'MANGALIA');

INSERT INTO atlet VALUES (107, 210, 307, 407, 501, 'Andreea', 21, 1 , '07873248723435', 'BUCURESTI');

INSERT INTO atlet VALUES (108, 206, 308, 408, 501, 'Manea', 18, 1 , '07873248723234', 'SIBIU');

INSERT INTO atlet VALUES (109, 206, 309, 409, 501, 'Pirica', 16, 0 , '07873248723768', 'BRASOV');

INSERT INTO atlet VALUES (110, 207, 310, 410, 501, 'Misu', 24, 0 , '078732487232143', 'BACAU');



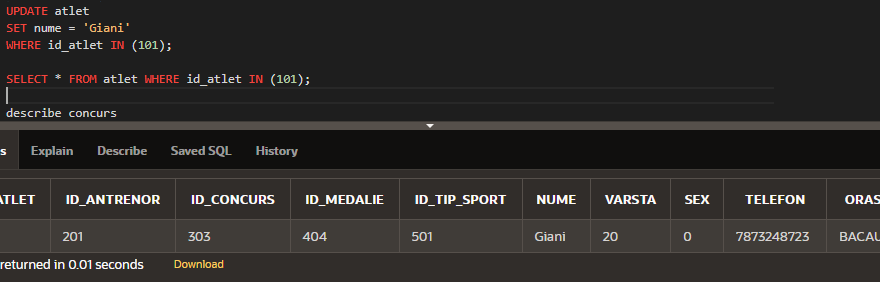
ACTUALIZAREA INREGISTRARILOR

* Actualizarea numelui atletului cu ID-ul 101:

UPDATE atlet

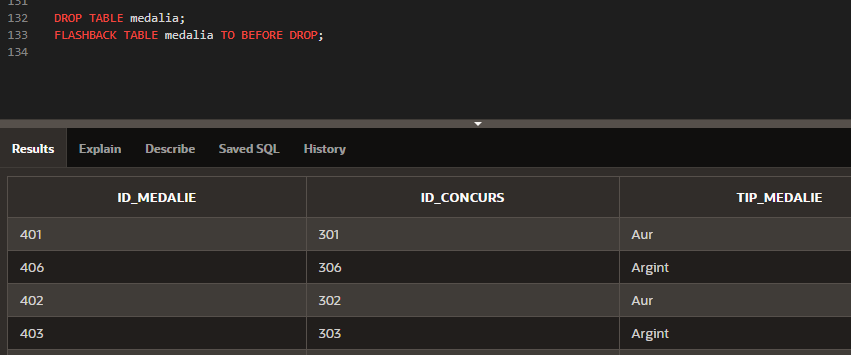
SET nume = 'Giani'

WHERE id\_atlet IN (101);

SELECT \* FROM atlet WHERE id\_atlet IN (101);

Stergerea si recuperarea unei tabele

DROP TABLE medalia;

FLASHBACK TABLE medalia TO BEFORE DROP;

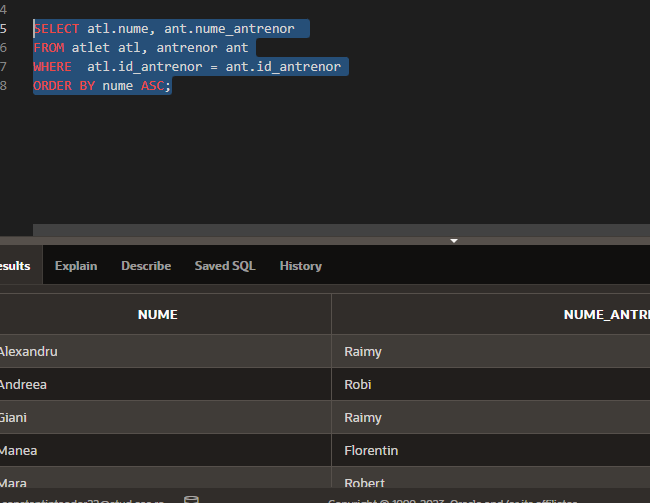
EXEMPLE DE INTEROGARI VARIATE

* Afisati de cine sunt antrenati fiecare dintre atleti, in ordine crescatoare, dupa **nume**

SELECT atl.nume, ant.nume\_antrenor

FROM atlet atl, antrenor ant

WHERE atl.id\_antrenor = ant.id\_antrenor

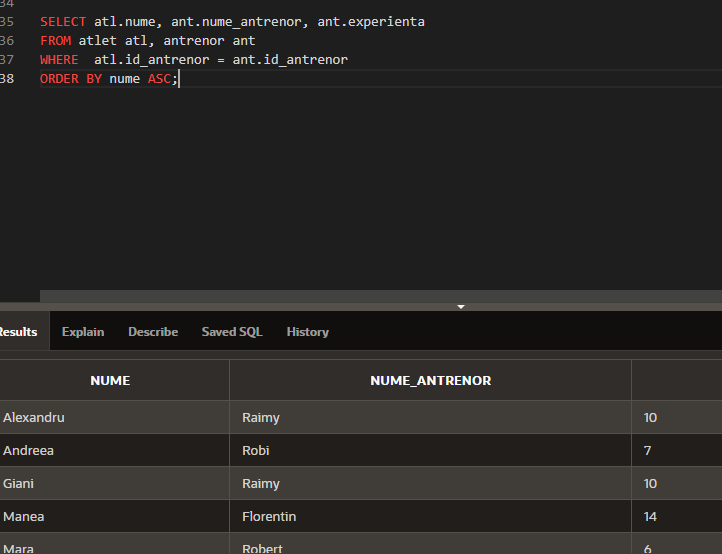
ORDER BY nume ASC;

* Afisati experienta fiecarui antrenor

SELECT atl.nume, ant.nume\_antrenor, ant.experienta

FROM atlet atl, antrenor ant

WHERE atl.id\_antrenor = ant.id\_antrenor

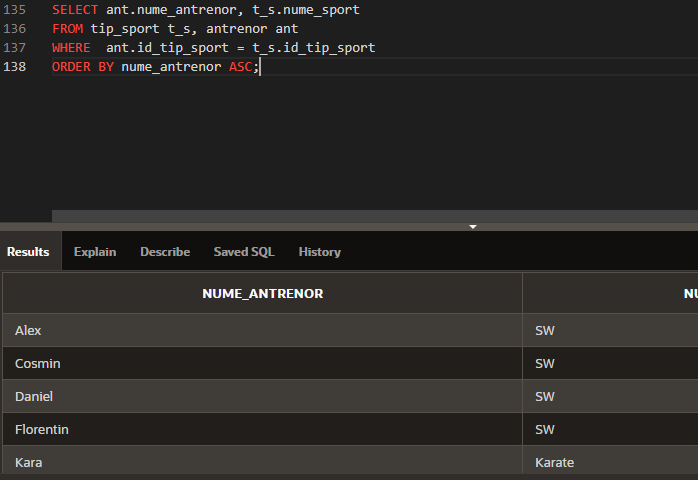
ORDER BY nume ASC;

* Afisati ce sport este predat de fiecare antenor, in ordine crescatoare, dupa **nume\_antrenor**

SELECT ant.nume\_antrenor, t\_s.nume\_sport

FROM tip\_sport t\_s, antrenor ant

WHERE ant.id\_tip\_sport = t\_s.id\_tip\_sport

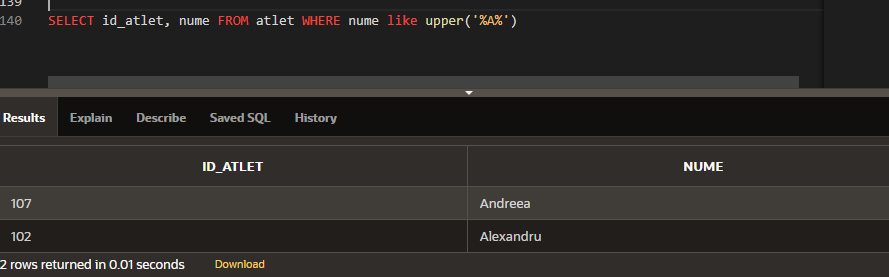
ORDER BY nume\_antrenor ASC;

* Afisati toti atletii al caror nume incepe cu litera A

SELECT id\_atlet, nume

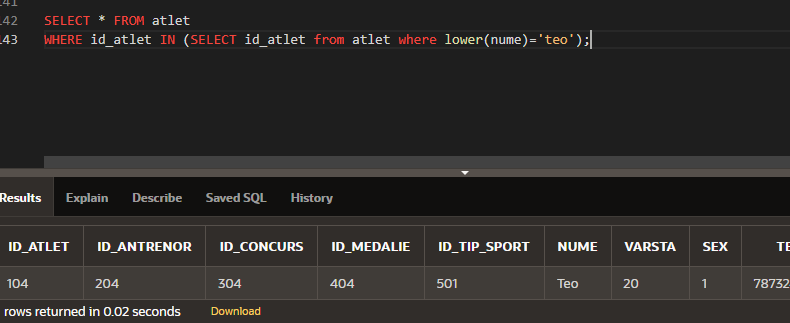
FROM atlet

WHERE nume LIKE UPPER('%A%')



* Afisati toate informatiile atletului cu numele Teo

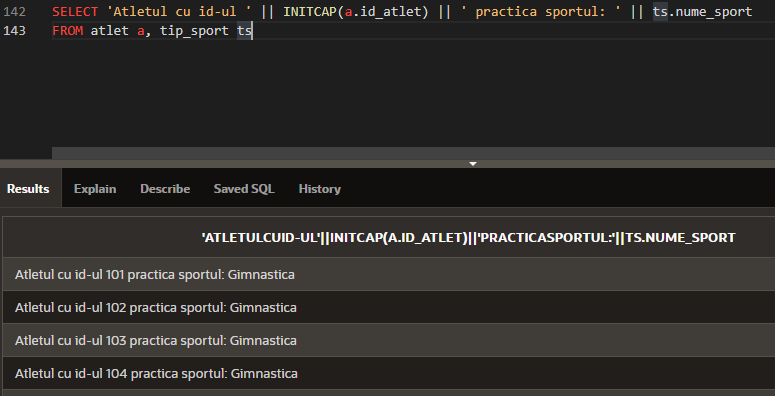
SELECT \* FROM atlet

WHERE id\_atlet IN (SELECT id\_atlet from atlet where lower(nume)='teo');

* Afisati textul: „Atletul cu id-ul x practica sportul: y”, folosind functia INITCAP

SELECT 'Atletul cu id-ul ' || INITCAP(a.id\_atlet) || ' practica sportul: ' || ts.nume\_sport

FROM atlet a, tip\_sport ts



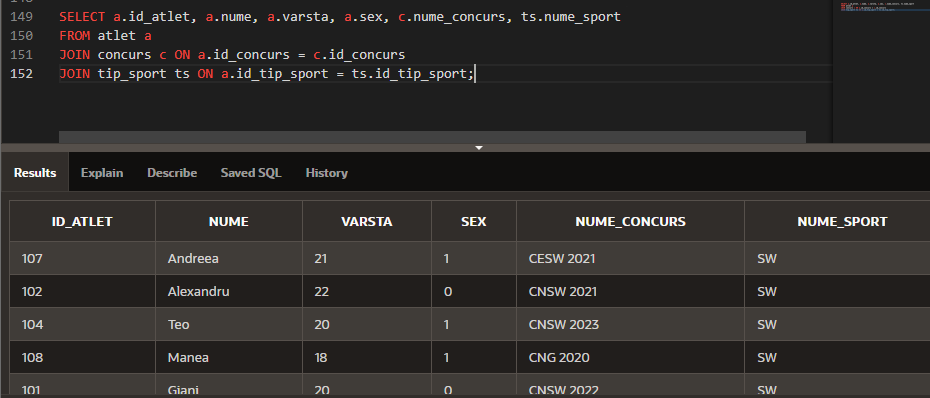
* Afiseaza toate informatiile despre atlet, inclusiv numele concursului si tipul de sport

SELECT a.id\_atlet, a.nume, a.varsta, a.sex, c.nume\_concurs, ts.nume\_sport

FROM atlet a

JOIN concurs c ON a.id\_concurs = c.id\_concurs

JOIN tip\_sport ts ON a.id\_tip\_sport = ts.id\_tip\_sport;



* Afiseaza numele si experienta antrenorilor din sportul ‚SW’ care au o experienta mai mica de 15 ani

SELECT an.nume\_antrenor, an.experienta

FROM antrenor an

JOIN tip\_sport ts ON an.id\_tip\_sport = ts.id\_tip\_sport

WHERE ts.nume\_sport = 'SW' AND an.experienta < 15;



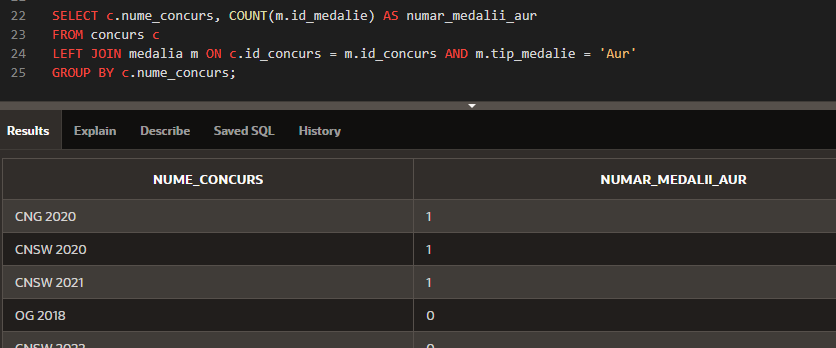
* Calculeaza numarul total de medalii de aur obtinute la fiecare concurs

SELECT c.nume\_concurs, COUNT(m.id\_medalie) AS numar\_medalii\_aur

FROM concurs c

LEFT JOIN medalia m ON c.id\_concurs = m.id\_concurs AND m.tip\_medalie = 'Aur'

GROUP BY c.nume\_concurs;



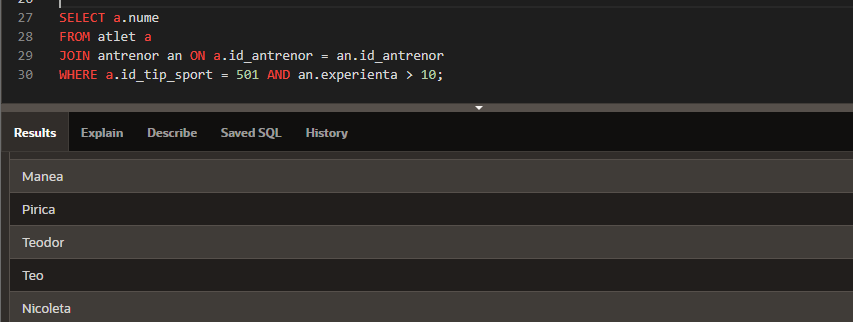
* Afiseaza atletii care practica sportul cu id-ul 501 si sunt antrenati de antrenori cu experienta mai mare de 10 ani

SELECT a.nume

FROM atlet a

JOIN antrenor an ON a.id\_antrenor = an.id\_antrenor

WHERE a.id\_tip\_sport = 501 AND an.experienta > 10;



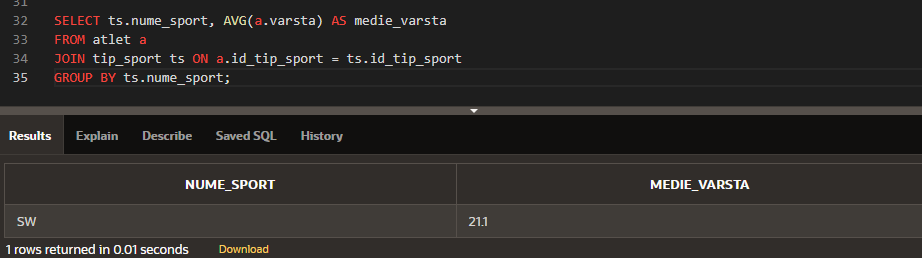
* Calculeaza media varstei atletilor pentru sportul ‚SW’

SELECT ts.nume\_sport, AVG(a.varsta) AS medie\_varsta

FROM atlet a

JOIN tip\_sport ts ON a.id\_tip\_sport = ts.id\_tip\_sport

GROUP BY ts.nume\_sport;



* Afiseaza numele atletilor si concursurile la care au participat, folosind un CASE statement pentru a afisa daca acestia au participat sau nu la vreo competitie.

SELECT a.nume, c.nume\_concurs,

CASE

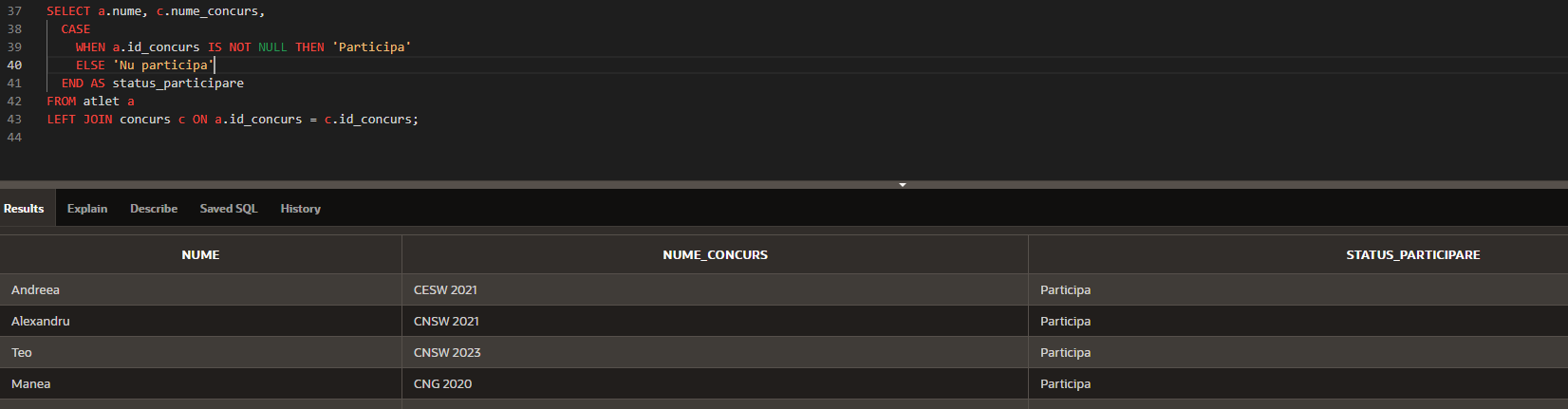
WHEN a.id\_concurs IS NOT NULL THEN 'Participa'

ELSE 'Nu participa'

END AS status\_participare

FROM atlet a

LEFT JOIN concurs c ON a.id\_concurs = c.id\_concurs;



* Afiseaza utilizand funcita DECODE genul fiecarui atlet

SELECT nume, DECODE(sex, '0', 'Masculin', '1', 'Feminin', 'Eroare')

AS gen

FROM atlet;



* Afiseaza atletii care au participat la concursul ‚CNSW 2020’ si tipul de sport al fiecarui atlet

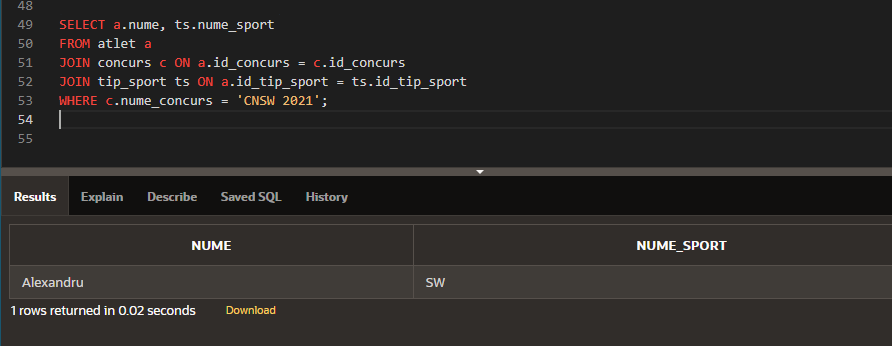
SELECT a.nume, ts.nume\_sport

FROM atlet a

JOIN concurs c ON a.id\_concurs = c.id\_concurs

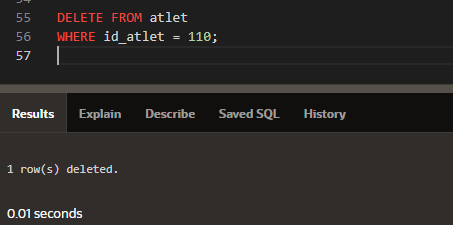
JOIN tip\_sport ts ON a.id\_tip\_sport = ts.id\_tip\_sport

WHERE c.nume\_concurs = 'CNSW 2021';



* Stergeti atletul cu id-ul 110

DELETE FROM atlet

WHERE id\_atlet = 110;

* Adaugati coloana **data\_nastere** in tabela atleti si puneti valori pentru atletul cu id-ul 101. Calculati varsta atletului cu id-ul 101 pe baza acestei coloane.

ALTER TABLE atlet

ADD data\_nastere DATE;

UPDATE atlet

SET data\_nastere = TO\_DATE('20030424', 'YYYYMMDD')

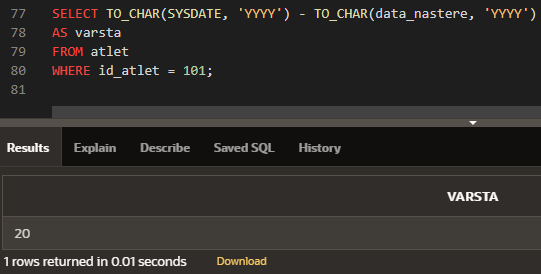
WHERE id\_atlet = 101

SELECT TO\_CHAR(SYSDATE, 'YYYY') - TO\_CHAR(data\_nastere, 'YYYY')

AS varsta

FROM atlet

WHERE id\_atlet = 101;

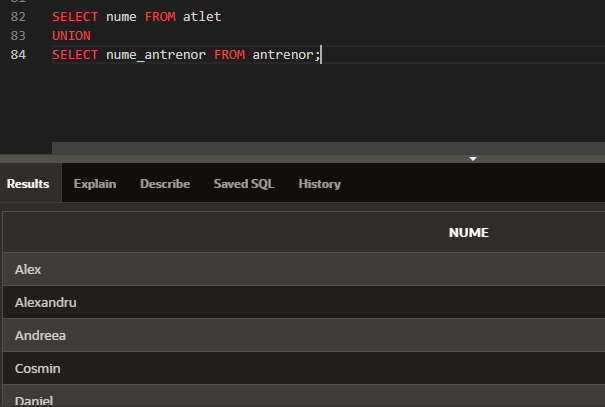


* Afiseaza o lista de nume care include si atletii si antrenorii

SELECT nume FROM atlet

UNION

SELECT nume\_antrenor FROM antrenor;



* Afiseaza toti antrenorii care nu au atleti sub 25 de ani (MINUS)

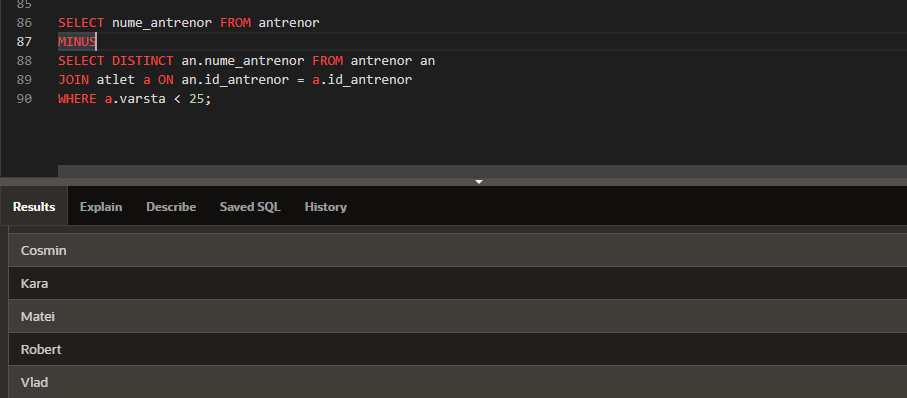
SELECT nume\_antrenor FROM antrenor

MINUS

SELECT DISTINCT an.nume\_antrenor FROM antrenor an

JOIN atlet a ON an.id\_antrenor = a.id\_antrenor

WHERE a.varsta < 25;



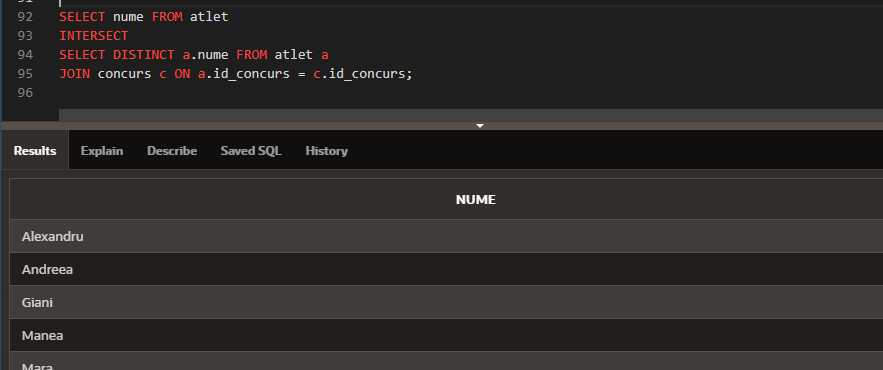
* Afiseaza atletii care au participat la concursuri (INTERSECT)

SELECT nume FROM atlet

INTERSECT

SELECT DISTINCT a.nume FROM atlet a

JOIN concurs c ON a.id\_concurs = c.id\_concurs;



* Afișează antrenorii care au cel puțin un atlet sub 20 de ani

SELECT nume\_antrenor

FROM antrenor

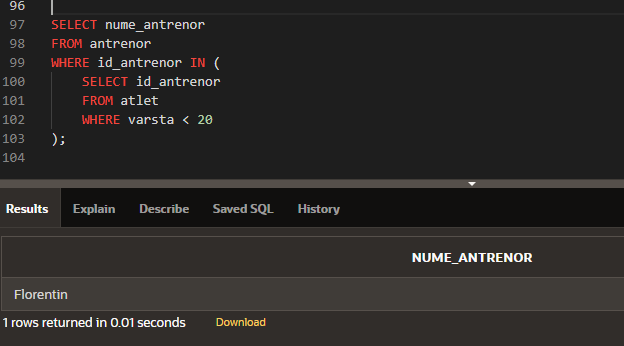
WHERE id\_antrenor IN (

SELECT id\_antrenor

FROM atlet

WHERE varsta < 20

);

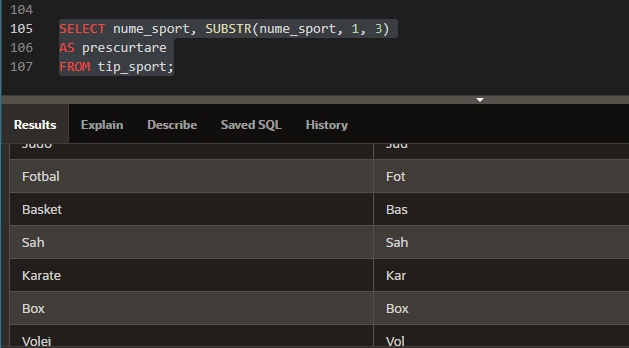


* Afiseaza primele 3 caractere din numele sporturilor

SELECT nume\_sport, SUBSTR(nume\_sport, 1, 3)

AS prescurtare

FROM tip\_sport;



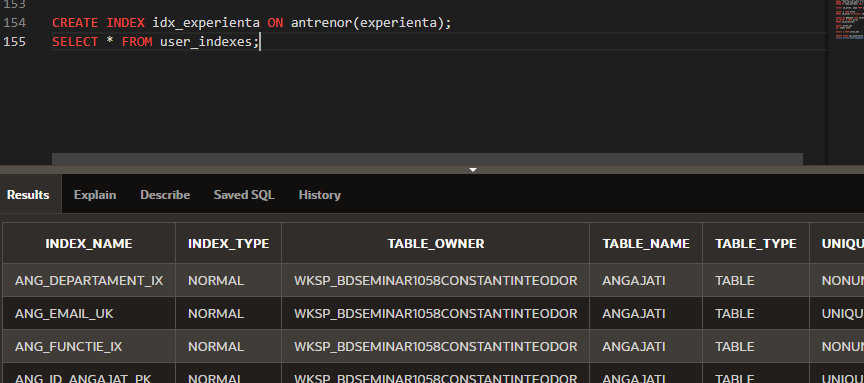
Gestiunea altor obiecte ale bazei de date: vederi, indecsi, sinonime, secvente

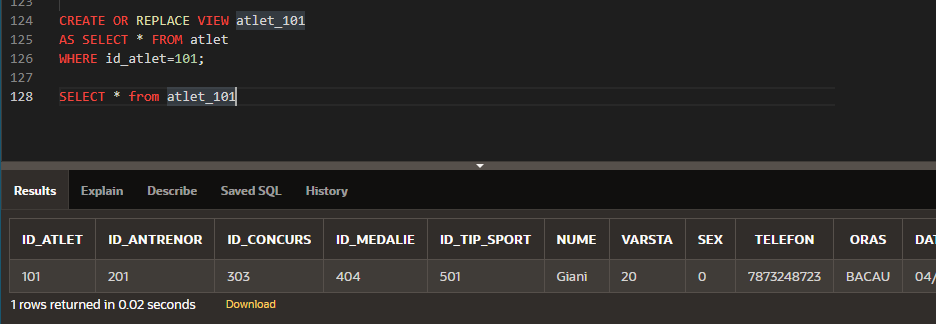
* Exemplu de vedere pentru a afisa informatii despre atletul cu id-ul 101

CREATE OR REPLACE VIEW atlet\_101

AS SELECT \* FROM atlet

WHERE id\_atlet=101;

SELECT \* from atlet\_101

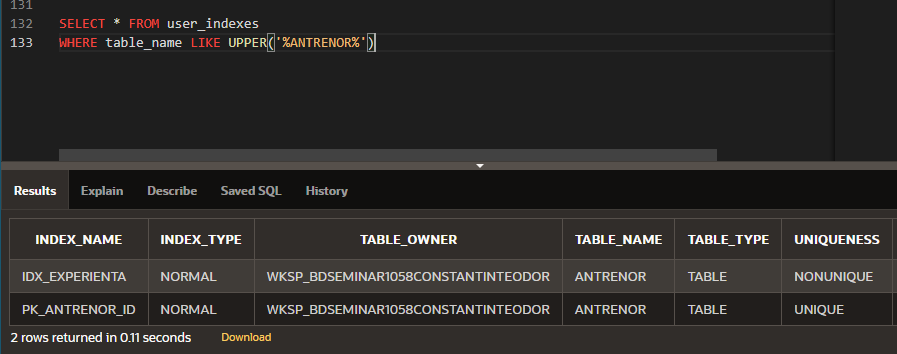


* Exemplu de index pentru experienta antrenorilor

CREATE INDEX idx\_experienta ON antrenor(experienta);

SELECT \* FROM user\_indexes

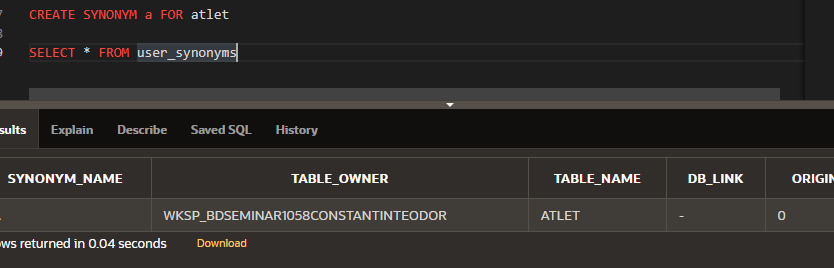
WHERE table\_name LIKE UPPER('%ANTRENOR%')



* Exemplu de sinonim ’a’ pentru atleti

CREATE SYNONYM a FOR atlet

SELECT \* FROM user\_synonyms



* Exemplu de secventa pentru a gestiona id-uri unice pentru tabela atlet

CREATE SEQUENCE seq\_atlet\_id

START WITH 111

INCREMENT BY 1

MAXVALUE 299

