Proiect Baze de Date

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Informatica Aplicata, Anul 2, Sg 4

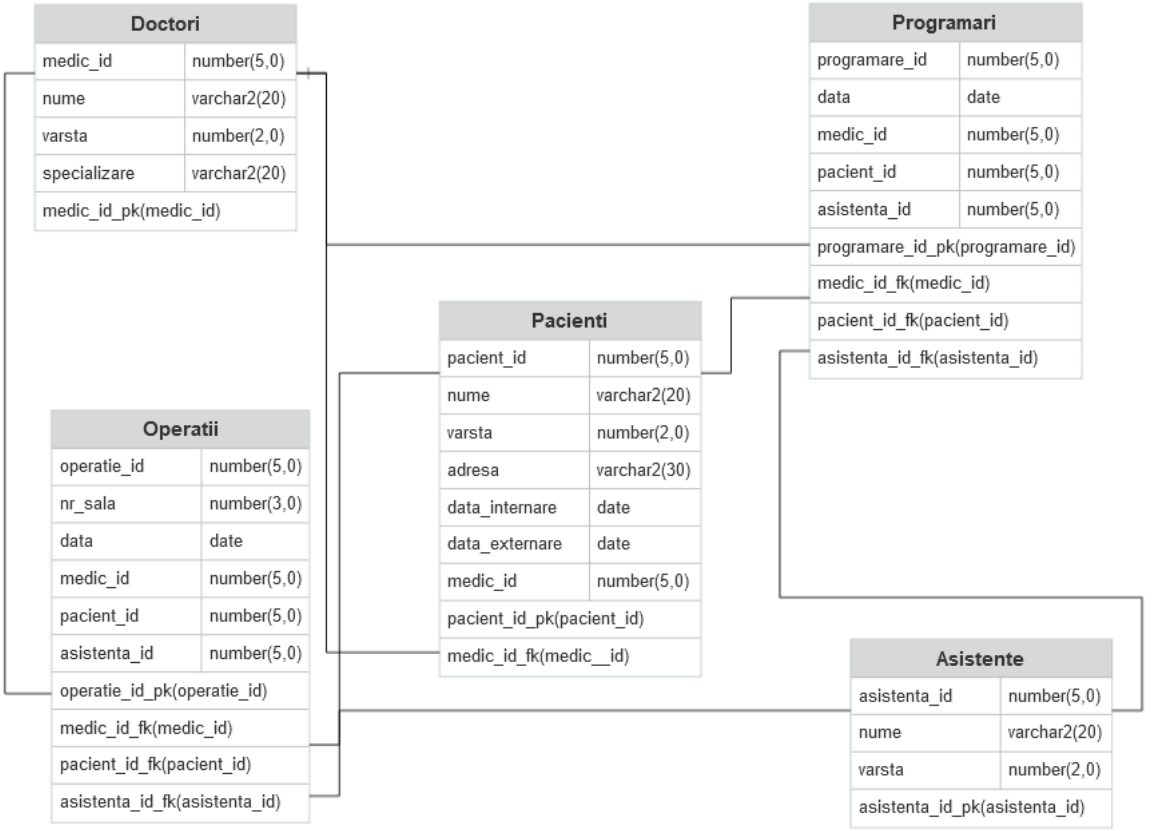
1. Descrierea pe scurt a activitatii pentru care se realizeaza proiectul

Am realizat acest proiect cu scopul centralizarii datelor unei clinici.

Baza de date create ar trebui sa ajute la monitorizarea personalului (doctori si asistente), pacientilor, operatiilor si programarilor pentru consultatii. De asemenea ar trebui sa ajute si la stabilirea programarilor si a operatiilor.

Baza de date contine 5 tabele: Doctori, Asistente, Pacienti, Programari si Operatii.

2. Identificarea dependentelor functionale si aducerea schemei bazei de date cel putin in forma normala BCNF utilizand normalizarea (unde este cazul)



Dependentele functionale sunt:

- → Pentru tabelul Doctori:
  medic_id-->{nume,varsta,specializare}
- → Pentru tabelul Pacienti:
  pacient_id-->{nume,varsta,adresa,data_internare,data_externare,medic_id}
  {nume,varsta,adresa}-->pacient_id
- → Pentru tabelul Programari:
  programare_id-->{data,ora,medic_id,pacient_id,asistenta_id}
  {data,ora,medic_id}-->programare_id
  {data,ora,pacient_id}-->programare_id
  {data,ora,asistenta_id}-->programare_id
- → Pentru tabelul Operatii:

operatie_id-->{nr_sal,data,ora,medic_id,pacient_id,asistenta_id}
{nr_sala,data,ora}-->{operatie_id}
{pacient_id,data,ora}-->{operatie_id}

→ Pentru tabelul Asistente:
asistenta_id-->{nume,varsta}

In baza de date exista urmatoarele relatii:

- Doctori(medic_id,nume,varsta,specializare)
- Pacienti(pacient_id,nume,varsta,adresa,data_internare,data_externare,medic_id)
- Operatii(operatie_id,nr_sala,medic_id,pacient_id,asistenta_id,data,ora)
- Asistente(asistenta_id,nume,varsta)
- Programari(programare_id,data,ora,medic_id,asistenta_id,pacient_id)

Toate relatiile din baza de date sunt in forma 1NF. Fiecare atribut este compus doar dintr-o singura valoare, toate valorile ale unui atribut sunt de acelasi tip si numele atributelor sunt unice relatiei.

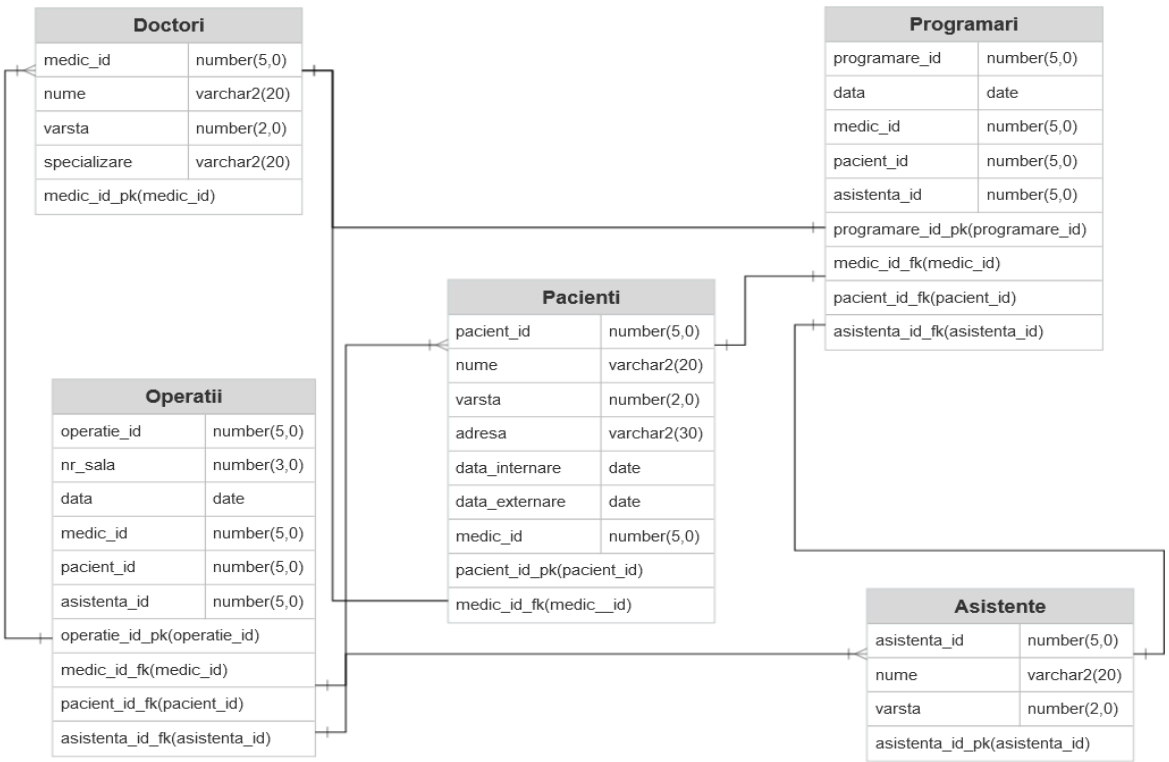
Cheile candidat/Candidate keys sunt: medic_id,pacient_id,operatie_id,asistenta_id,programare_id.

Toate relatiile sunt in 2NF deoarece toate atributele sunt dependente functional de totalitatea cheii primare.

Toate atributele non-chei ale unei relatii depind numai de chei candidate ale acelei relatii. Astfel relatiile sunt in 3NF.

Pentru fiecare dependenta functionala X->Y, X este super cheia tabelului.

3. Crearea diagramei entitate - relatie (ERD)/diagramei de tabele corespunzatoare datelor aferente actiunii modelate



4. Definirea tabelelor (minum 4-5 tabele daca proiectul este realizat de o singura persoana; mai multe tabele daca este realizat in echipa): exemplificare de comenzi de creare, modificare a structurii, stergere, redenumire, trunchiere, dupa caz

In baza de date aferenta aplicatiei exista 5 tabele: Doctori, Asistente, Pacienti, Operatii si Programari.

Pentru tabelul Doctori

Constrangeri:

- medic_id – Primary key, NOT NULL
- nume – NOT NULL
- varsta – NOT NULL
- specializare – NOT NULL

Comanda pentru crearea tabelului

CREATE TABLE Doctori(

medic_id NUMBER(5,0),

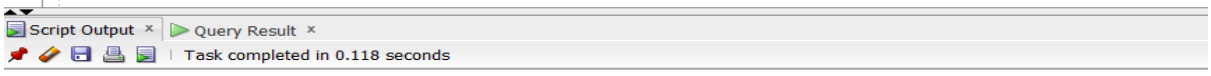
nume VARCHAR2(20) NOT NULL,

varsta NUMBER(2,0) NOT NULL,

specializare VARCHAR2(20) NOT NULL,

CONSTRAINT medic_id_pk PRIMARY KEY(medic_id))

```
CREATE TABLE Doctori(
medic_id NUMBER(5,0),
nume VARCHAR2(20) NOT NULL,
varsta NUMBER(2,0) NOT NULL,
specializare VARCHAR2(20) NOT NULL,
CONSTRAINT medic_id_pk PRIMARY KEY(medic_id))
```




```
Table DOCTORI created.
```

Pentru tabelul Asistente

Constrangeri:

- asistenta_id – Primary key, NOT NULL
- nume – NOT NULL
- varsta – NOT NULL

Comanda pentru crearea tabelului

CREATE TABLE Asistenta(

asistenta_id NUMBER(5,0),

nume VARCHAR2(20) NOT NULL,

varsta NUMBER(2,0) NOT NULL,

CONSTRAINT asistenta_id_pk PRIMARY KEY(asistenta_id))

```
CREATE TABLE Asistente(
asistenta_id NUMBER(5,0),
nume VARCHAR2(20) NOT NULL,
varsta NUMBER(2,0) NOT NULL,
CONSTRAINT asistenta_id_pk PRIMARY KEY(asistenta_id))
```

Pentru tabelul Pacienti

Constrangeri:

- pacient_id – Primary key, NOT NULL
- nume – NOT NULL
- varsta – NOT NULL
- adresa – NOT NULL
- medic_id – Foreign key

Comanda pentru crearea tabelului

CREATE TABLE Pacienti(

pacient_id NUMBER(5,0),

nume VARCHAR2(20) NOT NULL,

varsta NUMBER(2,0) NOT NULL,

adresa VARCHAR2(20) NOT NULL,

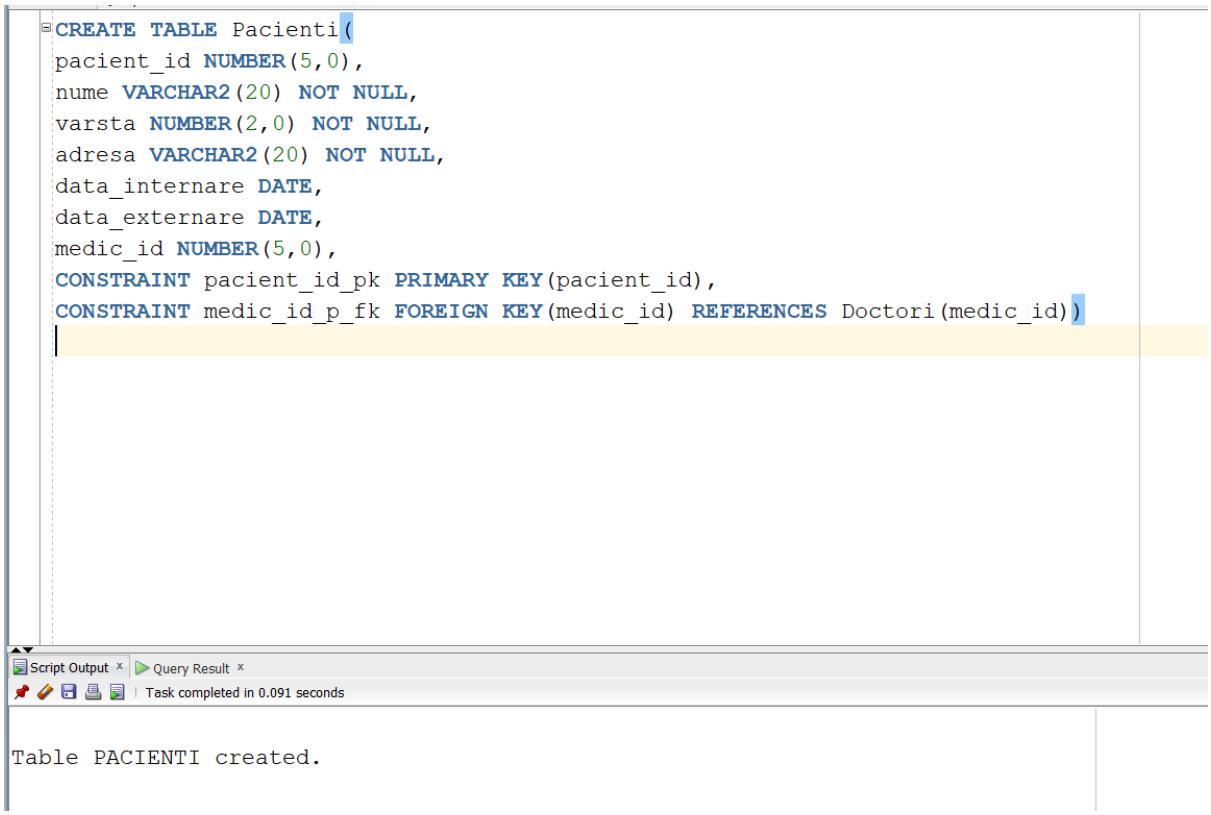
data_internare DATE,

data_externare DATE,

medic_id NUMBER(5,0),

CONSTRAINT pacient_id_pk PRIMARY KEY(pacient_id),

CONSTRAINT medic_id_p_fk FOREIGN KEY(medic_id) REFERENCES Doctori(medic_id))



Pentru tabelul Operatii

Constrangeri:

- operatie_id – Primary key, NOT NULL
- nr_sala – NOT NULL
- data – NOT NULL
- medic_id – Foreign key
- pacient_id – Foreign key
- asistenta_id – Foreign key

Comanda pentru crearea tabelului

CREATE TABLE Operatii(

operatie_id NUMBER(5,0),

nr_sala NUMBER(3,0) NOT NULL,

data DATE NOT NULL,

medic_id NUMBER(5,0),

pacient_id NUMBER(5,0),

asistenta_id NUMBER(5,0),

CONSTRAINT operatie_id_pk PRIMARY KEY(operatie_id),

CONSTRAINT medic_id_op_fk FOREIGN KEY(medic_id) REFERENCES Doctori(medic_id),

CONSTRAINT pacient_id_op_fk FOREIGN KEY(pacient_id) REFERENCES Pacienti(pacient_id),

CONSTRAINT asistenta_id_op_fk FOREIGN KEY(asistenta_id) REFERENCES Asistente(asistenta_id))

```
CREATE TABLE Operatii(
operatie_id NUMBER(5,0),
nr_sala NUMBER(3,0) NOT NULL,
data DATE NOT NULL,
medic_id NUMBER(5,0),
pacient_id NUMBER(5,0),
asistenta_id NUMBER(5,0),
CONSTRAINT operatie_id_pk PRIMARY KEY(operatie_id),
CONSTRAINT medic_id_op_fk FOREIGN KEY(medic_id) REFERENCES Doctori(medic_id),
CONSTRAINT pacient_id_op_fk FOREIGN KEY(pacient_id) REFERENCES Pacienti(pacient_id),
CONSTRAINT asistenta_id_op_fk FOREIGN KEY(asistenta_id) REFERENCES Asistente(asistenta_id))
```

Script Output | Query Result

Task completed in 0.084 seconds

```
Table OPERATII created.
```

Pentru tabelul Programari

Constrangeri:

- programare_id – Primary key, NOT NULL
- data – NOT NULL
- medic_id – Foreign key
- pacient_id – Foreign key
- asistenta_id – Foreign key

Comanda pentru crearea tabelului

CREATE TABLE Programari(

programare_id NUMBER(5,0),

data DATE NOT NULL,

medic_id NUMBER(5,0),

pacient_id NUMBER(5,0),

asistenta_id NUMBER(5,0),

CONSTRAINT programare_id_pk PRIMARY KEY(programare_id),

CONSTRAINT medic_id_prog_fk FOREIGN KEY(medic_id) REFERENCES Doctori(medic_id),

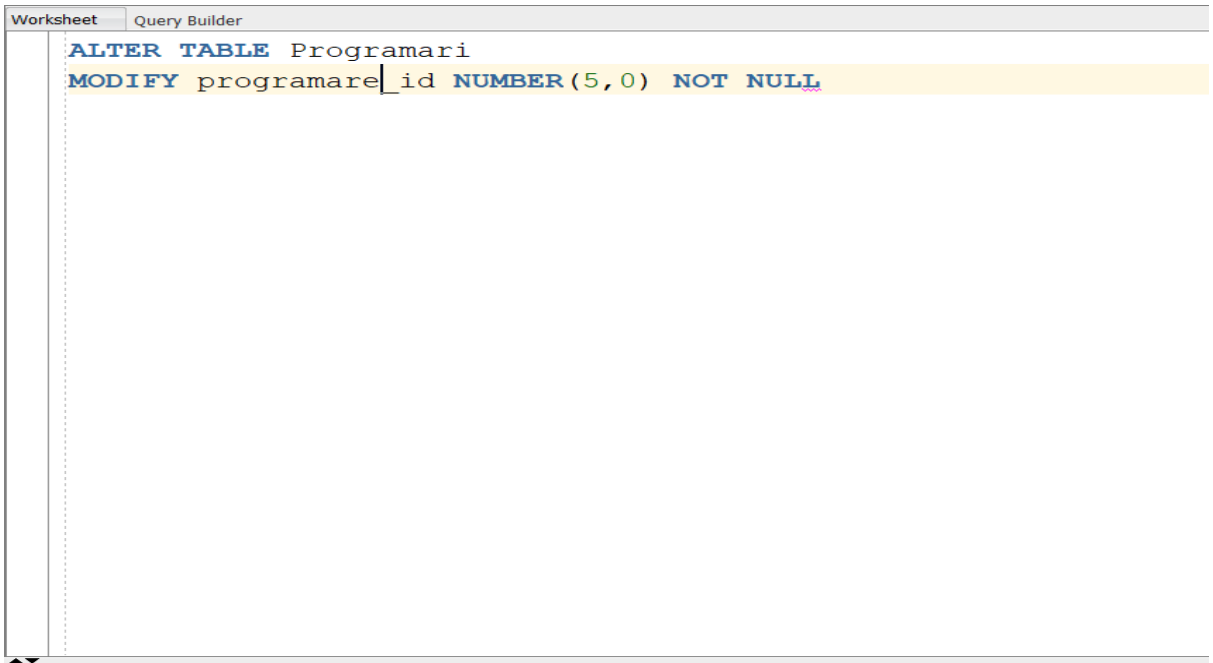
CONSTRAINT pacient_id_prog_fk FOREIGN KEY(pacient_id) REFERENCES Pacienti(pacient_id),

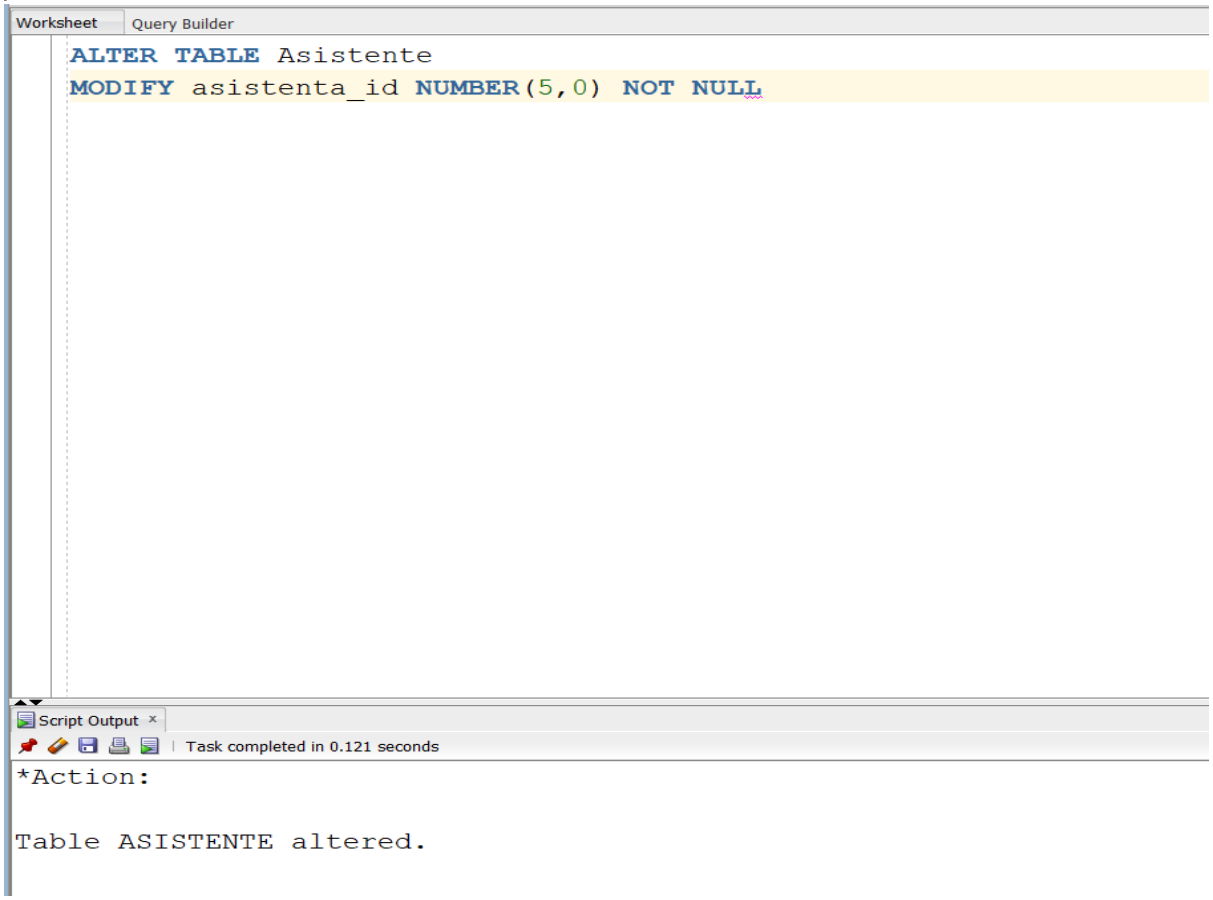
CONSTRAINT asistenta_id_prog_fk FOREIGN KEY(asistenta_id) REFERENCES Asistente(asistenta_id))

```
CREATE TABLE Programari(
programare_id NUMBER(5,0),
data DATE NOT NULL,
medic_id NUMBER(5,0),
pacient_id NUMBER(5,0),
asistenta_id NUMBER(5,0),
CONSTRAINT programare_id_pk PRIMARY KEY(programare_id),
CONSTRAINT medic_id_prog_fk FOREIGN KEY(medic_id) REFERENCES Doctori(medic_id),
CONSTRAINT pacient_id_prog_fk FOREIGN KEY(pacient_id) REFERENCES Pacienti(pacient_id),
CONSTRAINT asistenta_id_prog_fk FOREIGN KEY(asistenta_id) REFERENCES Asistente(asistenta_id))
```

```
Script Output × Query Result ×
Task completed in 0.109 seconds

Table PROGRAMARI created.
```

Schimbare structurii tabelelor prin adaugarea constrangerii NOT NULL la medic_id, pacient_id, asistenta_id, programare_id si operatie_id.





Worksheet Query Builder

```
ALTER TABLE Operatii
MODIFY operatie_id NUMBER(5,0) NOT NULL
```

Script Output × Task completed in 0.118 seconds

```
Table OPERATII altered.
```

Worksheet Query Builder

```
ALTER TABLE Pacienti
MODIFY pacient_id NUMBER(5,0) NOT NULL
```

Script Output × Task completed in 0.1 seconds

```
Table PACIENTI altered.
```

```
ALTER TABLE Doctori
MODIFY medic_id NUMBER(5,0) NOT NULL
```

Script Output | Task completed in 0.241 seconds

```
*Action:

Table DOCTORI altered.
```

Stergerea tabelului Programari

Worksheet | Query Builder

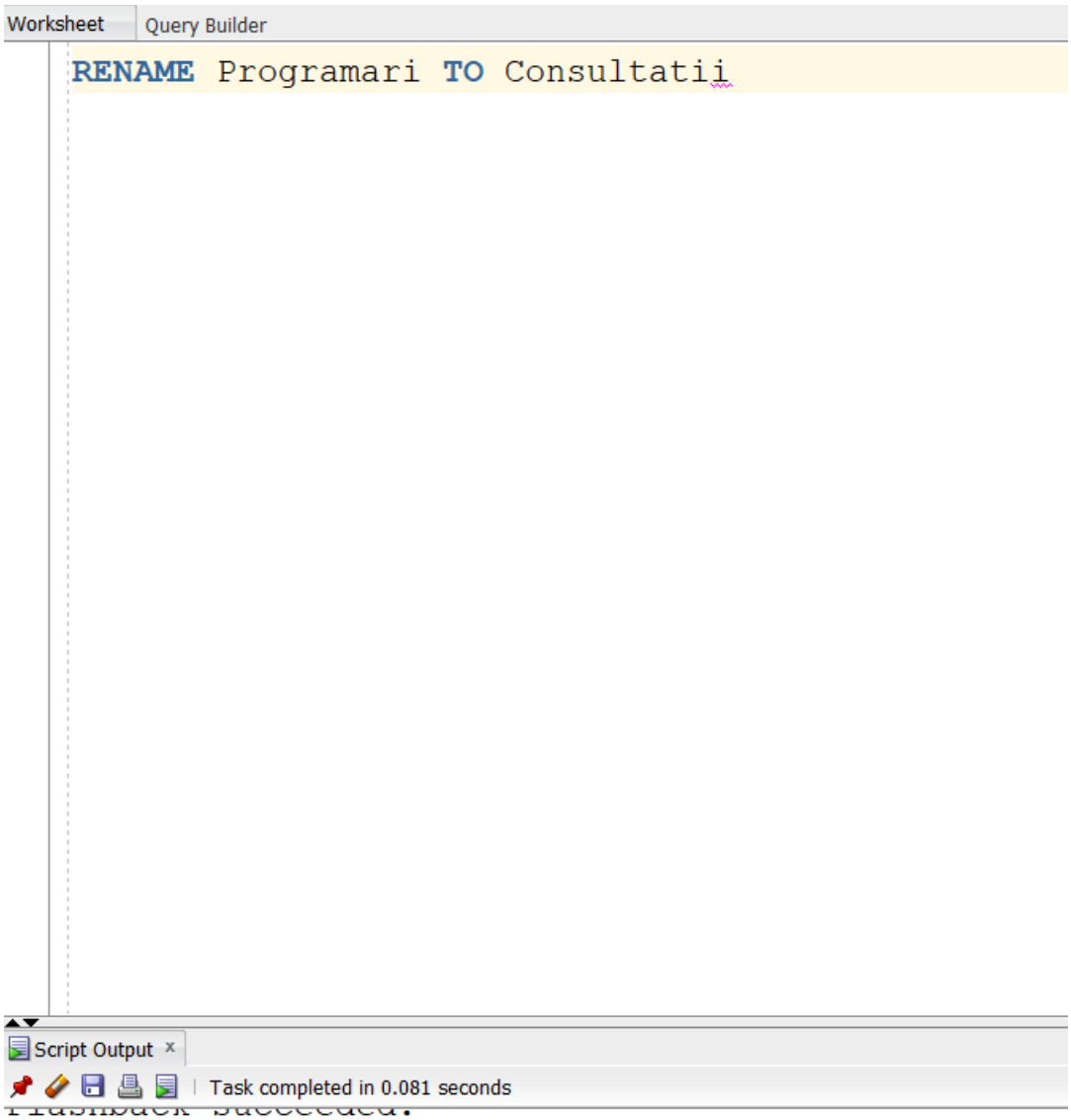
```
DROP TABLE Programari
```

Script Output | Task completed in 0.468 seconds

```
Table PROGRAMARI dropped.
```

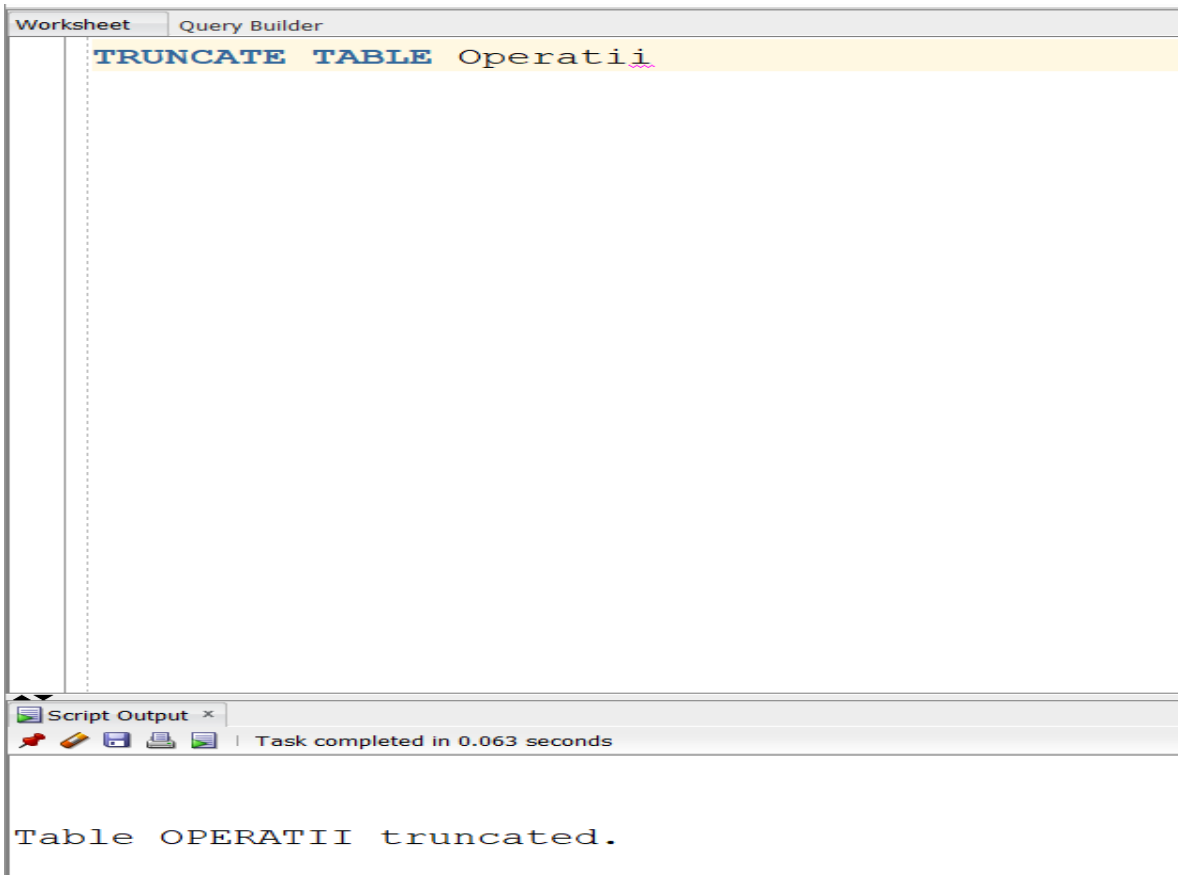
Redenumirea tabelului Programari

RENAME Programari TO Consultatii



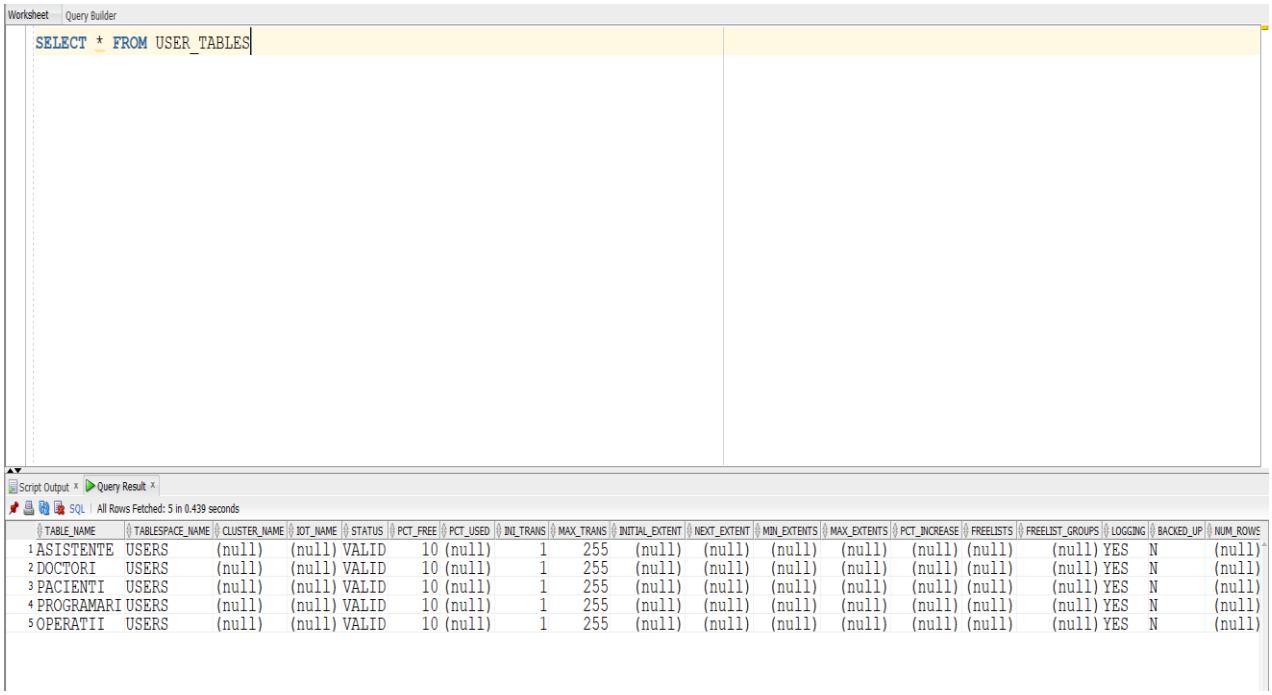
RENAME Consultatii to Programari

Trunchierea tabelului Operatii



5. Confirmarea existentei tabelelor create prin interogarea vederilor din dictionarul datelor; vizualizarea structurii acestora si a constrangerilor aferente

Confirmarea existentei tabelelor create: SELECT * FROM USER_TABLES



	TABLE_NAME	TABLESPACE_NAME	CLUSTER_NAME	IOT_NAME	STATUS	PCT_FREE	PCT_USED	INI_TRANS	MAX_TRANS	INITIAL_EXTENT	NEXT_EXTENT	MIN_EXTENTS	MAX_EXTENTS	PCT_INCREASE	FREELISTS	FREELIST_GROUPS	LOGGING	BACKED_UP	NUM_ROWS
1	ASISTENTE	USERS	(null)	(null)	VALID	10	(null)	1	255	(null)	(null)	(null)	(null)	(null)	(null)	(null)	YES	N	(null)
2	DOCTORI	USERS	(null)	(null)	VALID	10	(null)	1	255	(null)	(null)	(null)	(null)	(null)	(null)	(null)	YES	N	(null)
3	PACIENTI	USERS	(null)	(null)	VALID	10	(null)	1	255	(null)	(null)	(null)	(null)	(null)	(null)	(null)	YES	N	(null)
4	PROGRAMARI	USERS	(null)	(null)	VALID	10	(null)	1	255	(null)	(null)	(null)	(null)	(null)	(null)	(null)	YES	N	(null)
5	OPERATII	USERS	(null)	(null)	VALID	10	(null)	1	255	(null)	(null)	(null)	(null)	(null)	(null)	(null)	YES	N	(null)

Structura tabelelor si constrangerile aferente:

- Doctori -> DESCRIBE Doctori

```
DESCRIBE Doctori
```

Script Output | Query Result

Task completed in 0.057 seconds

```
Name           Null?    Type
-------------- -------- ------------
MEDIC_ID       NOT NULL NUMBER(5)
NUME           NOT NULL VARCHAR2(20)
VARSTA         NOT NULL NUMBER(2)
SPECIALIZARE NOT NULL VARCHAR2(20)
```

Worksheet | Query Builder

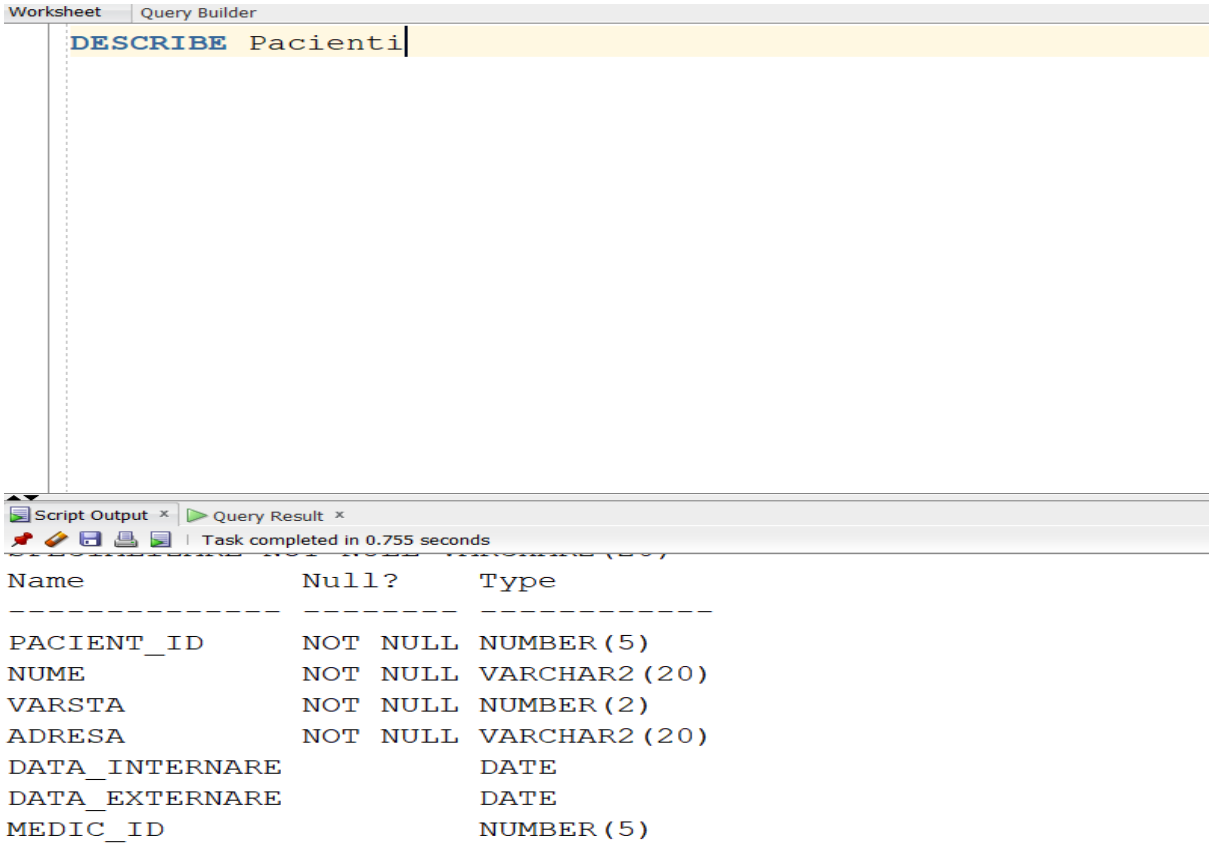
```
SELECT constraint_name, constraint_type, search_condition
FROM USER_CONSTRAINTS
WHERE table_name='DOCTORI'
```

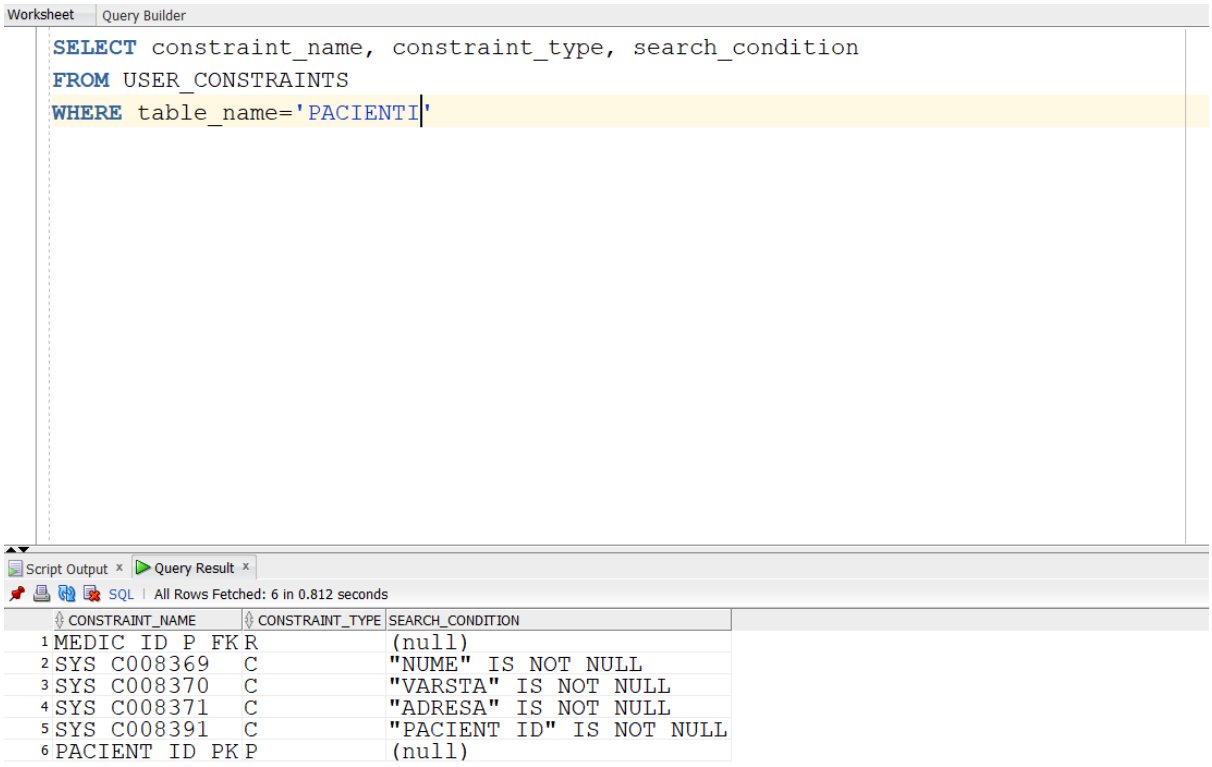
Script Output | Query Result

SQL | All Rows Fetched: 5 in 0.826 seconds

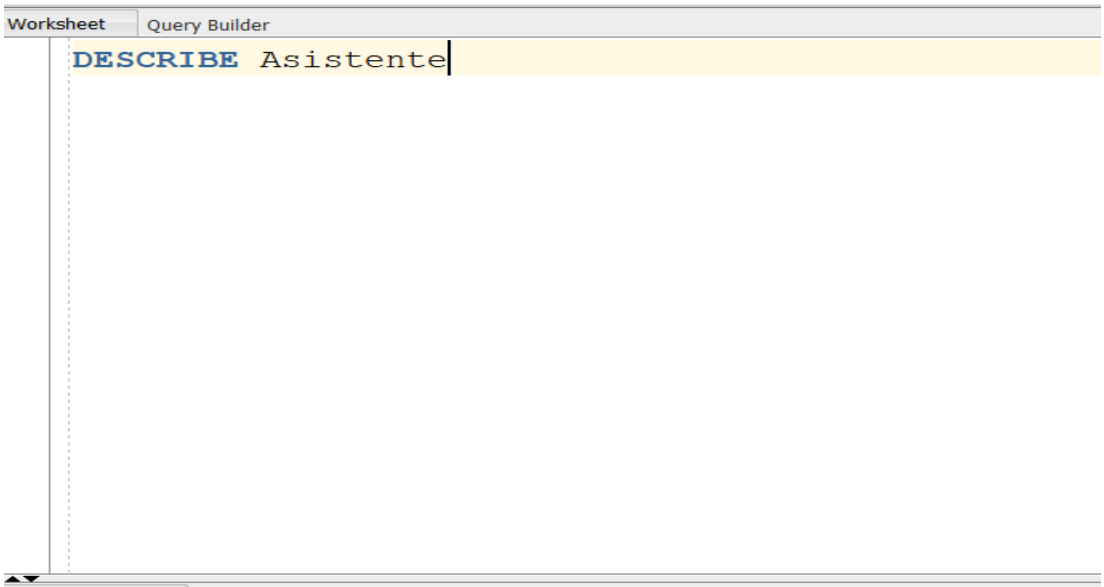
	CONSTRAINT_NAME	CONSTRAINT_TYPE	SEARCH_CONDITION
1	SYS_C008362	C	"NUME" IS NOT NULL
2	SYS_C008363	C	"VARSTA" IS NOT NULL
3	SYS_C008364	C	"SPECIALIZARE" IS NOT NULL
4	SYS_C008390	C	"MEDIC_ID" IS NOT NULL
5	MEDIC_ID_PK	P	(null)

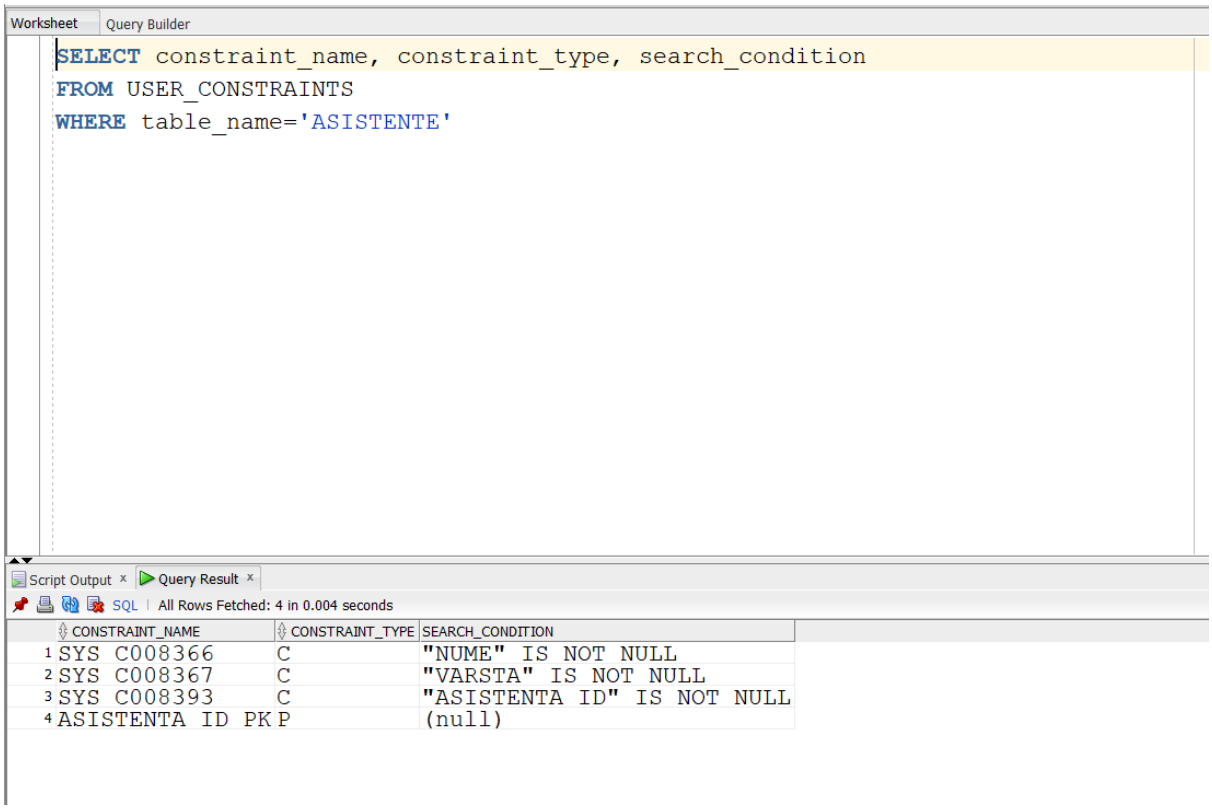
- Pacienti -> DESCRIBE Pacienti



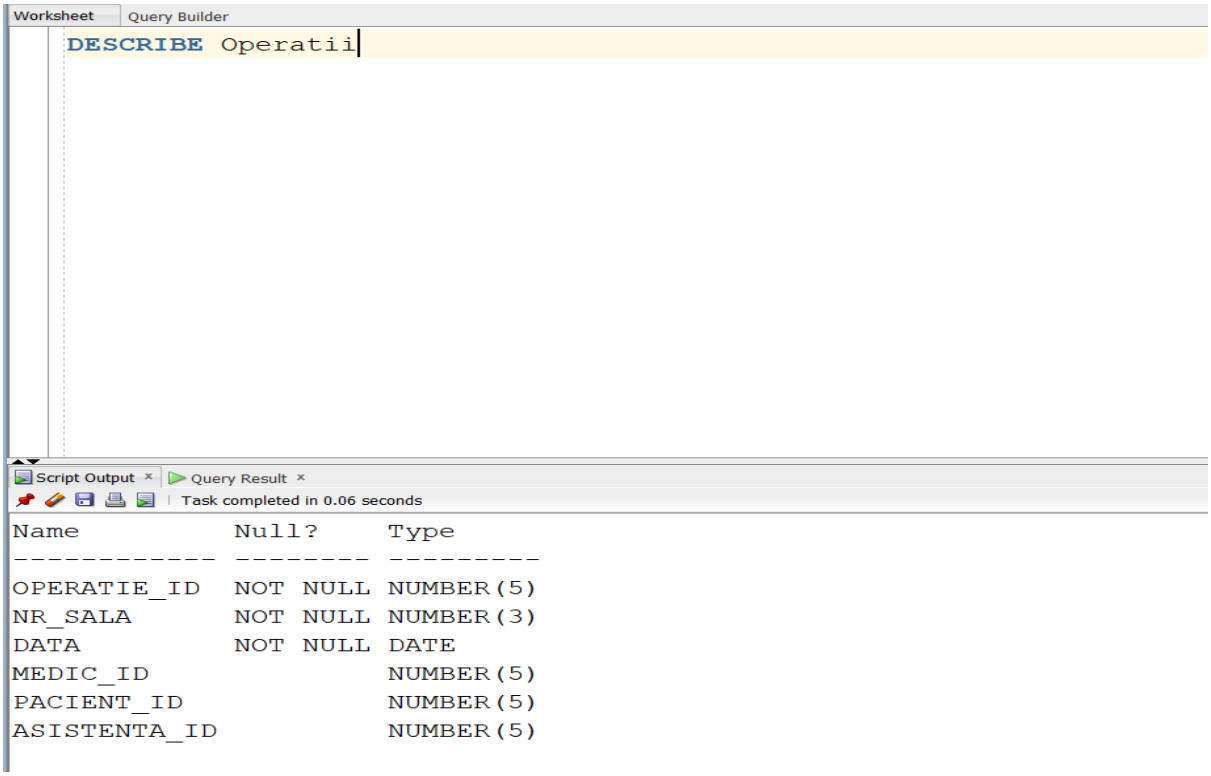


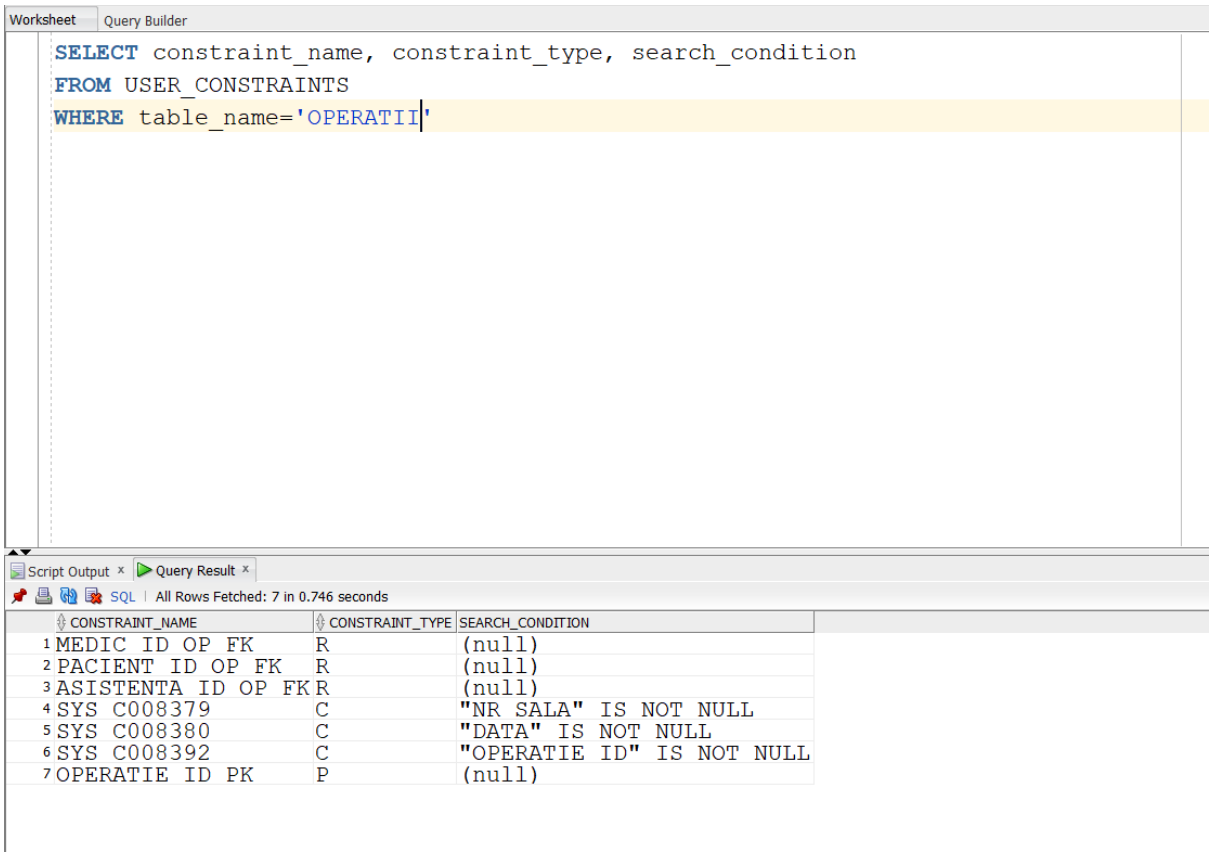
- Asistente -> DESCRIBE Asistente





- Operatii -> DESCRIBE Operatii





- Programari -> DESCRIBE Programari

Worksheet | Query Builder

```
DESCRIBE Programari
```

Script Output | Query Result

Task completed in 0.073 seconds

```
Name            Null?     Type
--------------- --------- ---------
PROGRAMARE_ID   NOT NULL  NUMBER(5)
DATA            NOT NULL  DATE
MEDIC_ID                  NUMBER(5)
PACIENT_ID                NUMBER(5)
ASISTENTA_ID              NUMBER(5)
```

Worksheet | Query Builder

```
SELECT constraint_name, constraint_type, search_condition
FROM USER_CONSTRAINTS
WHERE table_name='PROGRAMARI'
```

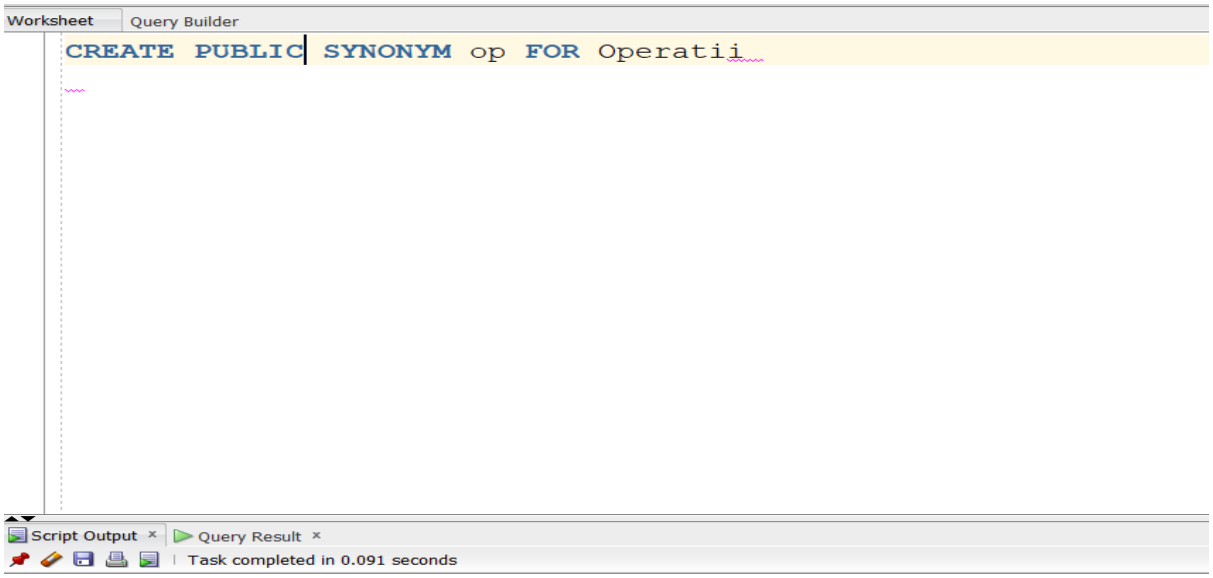
Script Output | Query Result

SQL | All Rows Fetched: 6 in 0.724 seconds

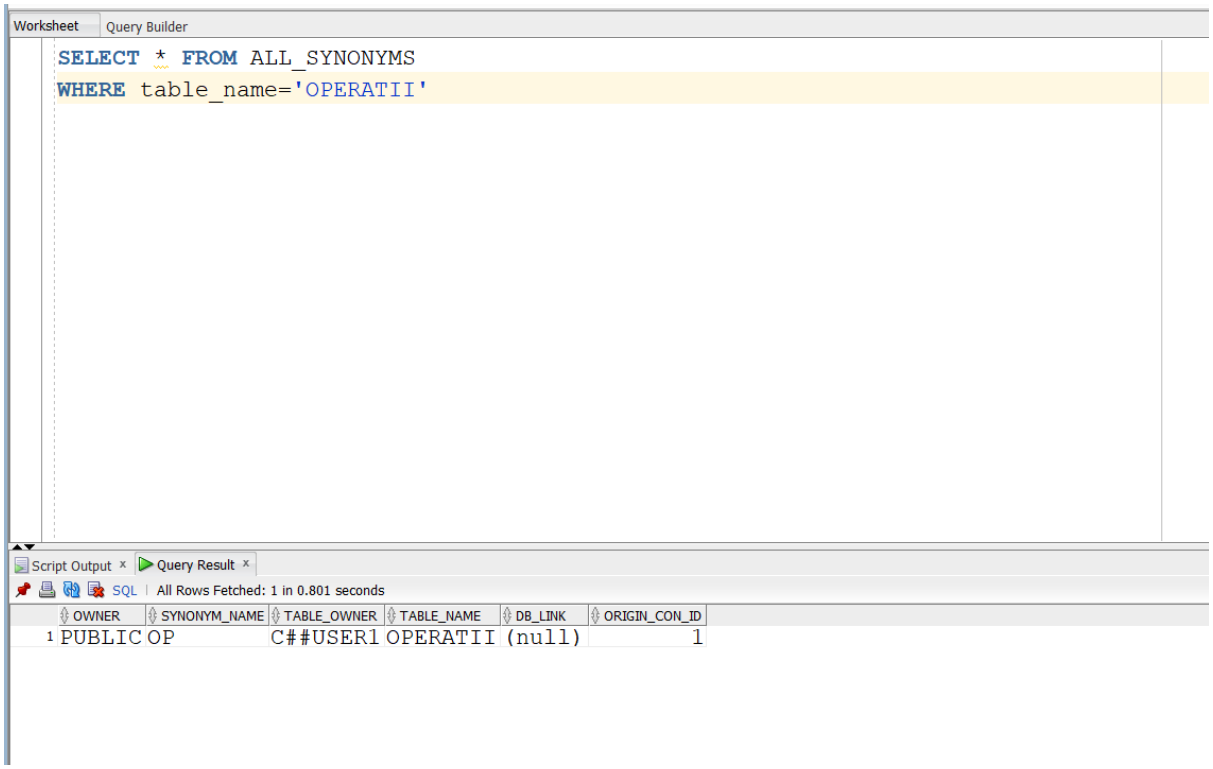
	CONSTRAINT_NAME	CONSTRAINT_TYPE	SEARCH_CONDITION
1	MEDIC_ID_PROG_FK	R	(null)
2	PACIENT_ID_PROG_FK	R	(null)
3	ASISTENTA_ID_PROG_FK	R	(null)
4	SYS_C008385	C	"DATA" IS NOT NULL
5	SYS_C008394	C	"PROGRAMARE_ID" IS NOT NULL
6	PROGRAMARE_ID_PK	P	(null)

6. Definirea de obiecte ale bazei de date, altele decat tabele: vederi, secvente, sinonime, indecsi; creare, modificare/stergere, dupa caz a obiectelor; confirmarea existentei/inexistentei obiectelor in dictionarul datelor

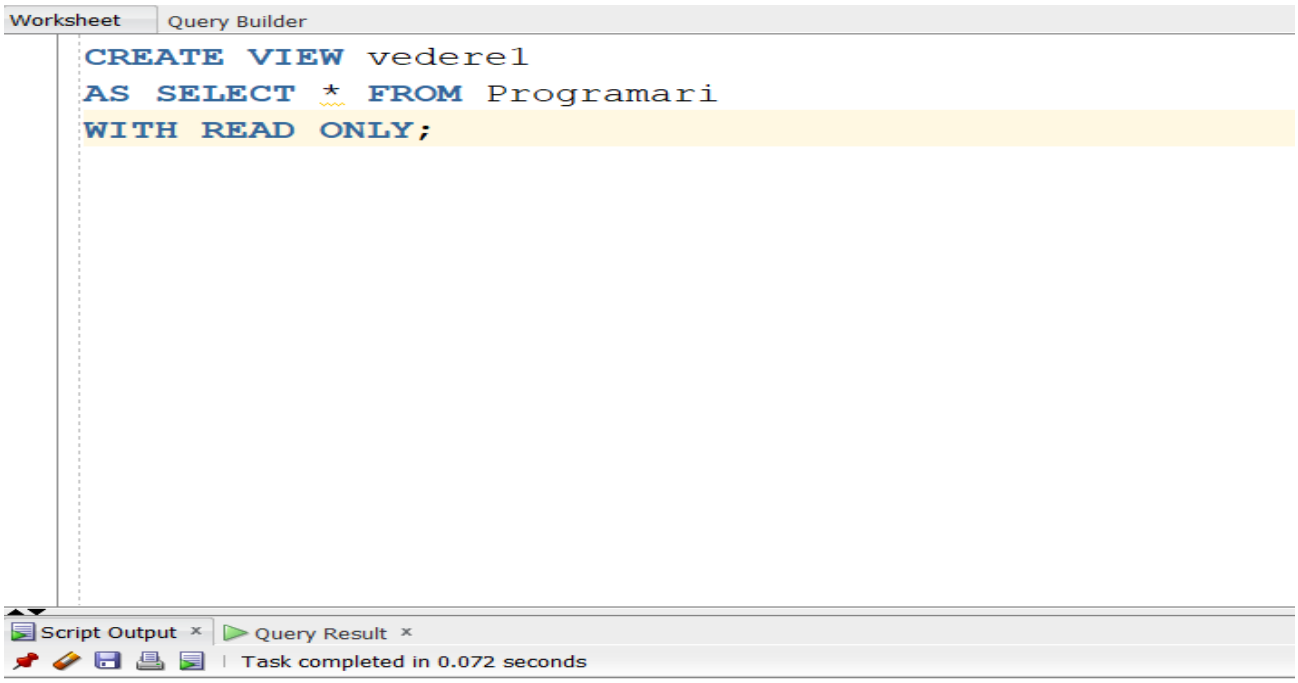
Crearea sinonimul op pentru tabelul Operatii si confirmarea acestuia.



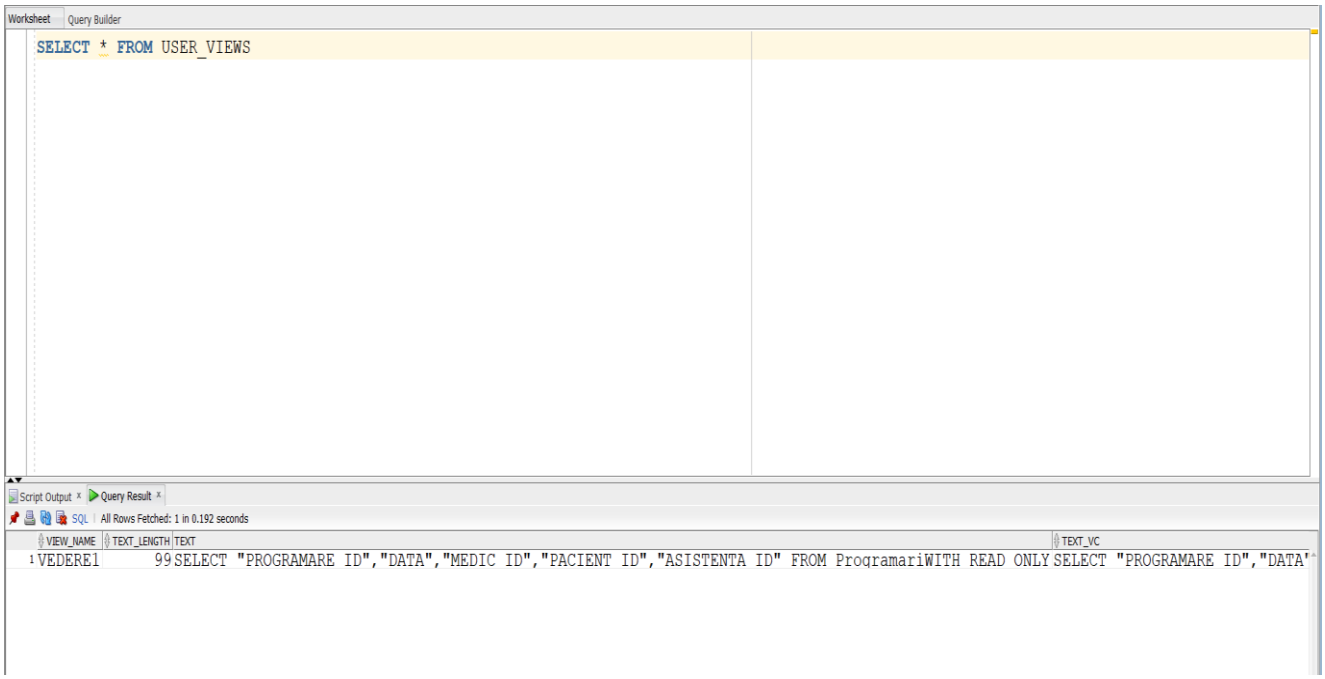

```
SYNONYM OP created.
```



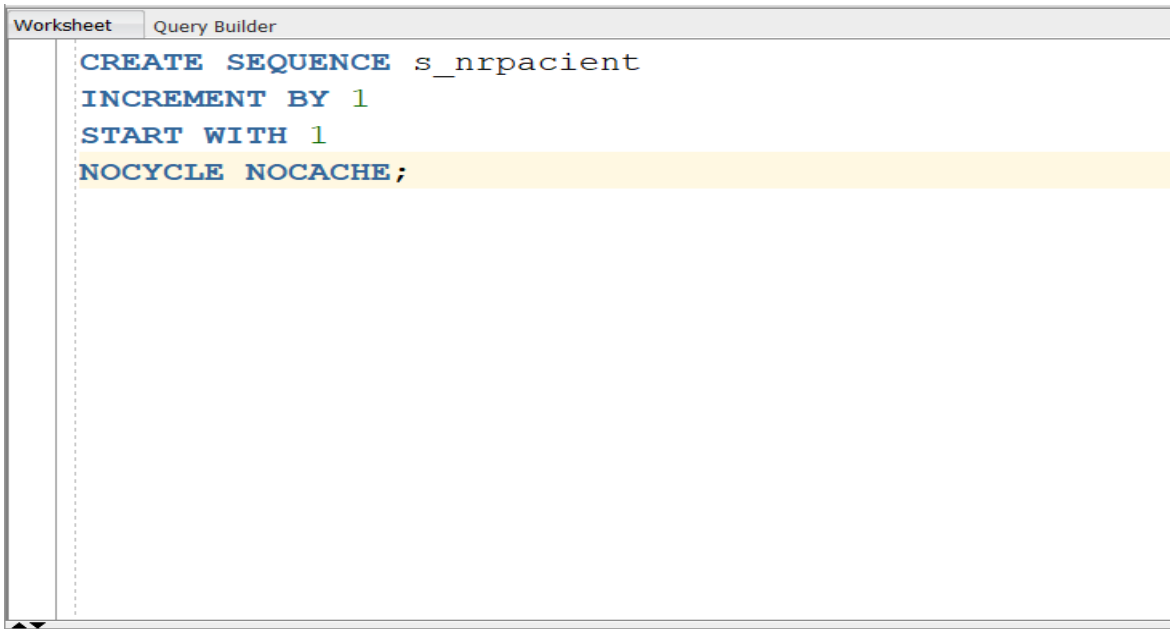
Crearea unei vederi “Vedere1” si confirmarea existentei acesteia.

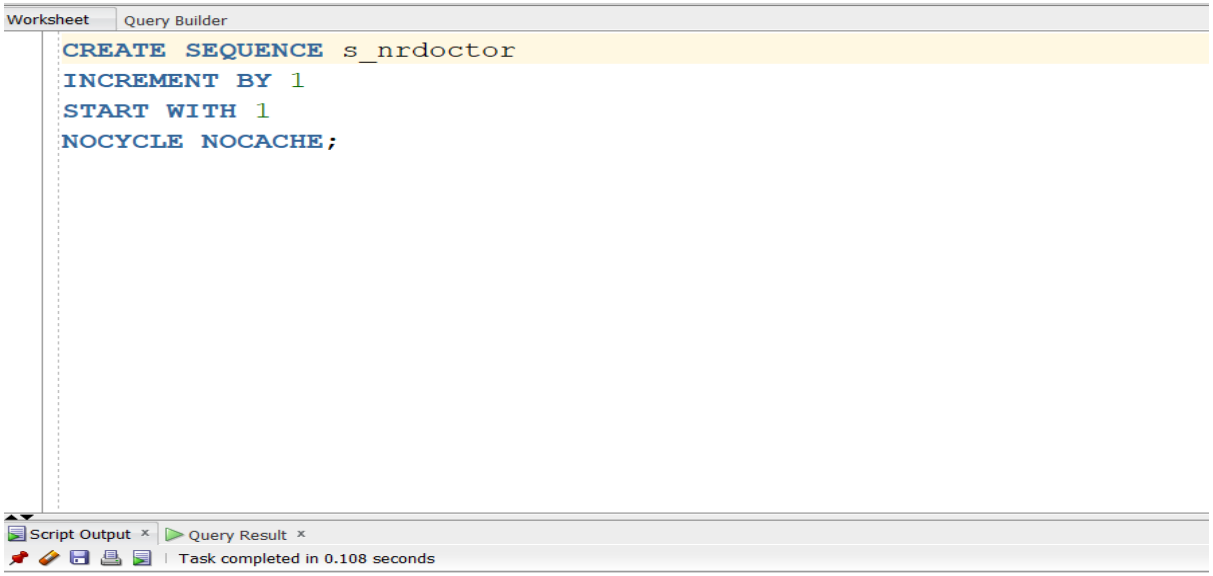



```
View VEDERE1 created.
```



Pentru fiecare tabel am creat o secventa pentru a genera numere unice.






```
Sequence S_NRPACIENT created.


Sequence S_NRDOCTOR created.
```

Worksheet Query Builder

```
CREATE SEQUENCE s_nrasistenta
INCREMENT BY 100
START WITH 1
NOCYCLE NOCACHE
```

Script Output × Query Result ×

Task completed in 0.077 seconds

```
SYNONYM OP created.


Index DATA_OPERATIE_IDX created.


Sequence S_NRASISTENTA created.
```

Worksheet Query Builder

```
CREATE SEQUENCE s_nroperatie
INCREMENT BY 1
START WITH 1
NOCYCLE NOCACHE
```

Script Output × Query Result ×

Task completed in 0.107 seconds

```
Sequence S_NROPERATIE created.
```

```
Worksheet  Query Builder
CREATE SEQUENCE s_nrprogramare
INCREMENT BY 1
START WITH 1
NOCYCLE NOCACHE
```

```
Script Output × Query Result ×
Task completed in 0.073 seconds

Sequence S_NRPROGRAMARE created.
```

Modificarea secventei s_nrdoctor.

```
Worksheet  Query Builder
ALTER SEQUENCE s_nrdoctor
INCREMENT BY 10
NOCYCLE NOCACHE
```

```
Script Output × Query Result ×
Task completed in 0.04 seconds

Sequence S_NRPACIENT created.


Sequence S_NRDOCTOR created.


Sequence S_NRDOCTOR altered.
```

Confirmarea existentei secventelor.

```
SELECT SEQUENCE_NAME, MIN_VALUE, INCREMENT_BY FROM USER_SEQUENCES
```

Script Output | Query Result | SQL | All Rows Fetched: 5 in 0.002 seconds

	SEQUENCE_NAME	MIN_VALUE	INCREMENT_BY
1	S_NRASISTENTA	1	100
2	S_NRDOCTOR	1	10
3	S_NROPERATIE	1	1
4	S_NRPACIENT	1	1
5	S_NRPROGRAMARE	1	1

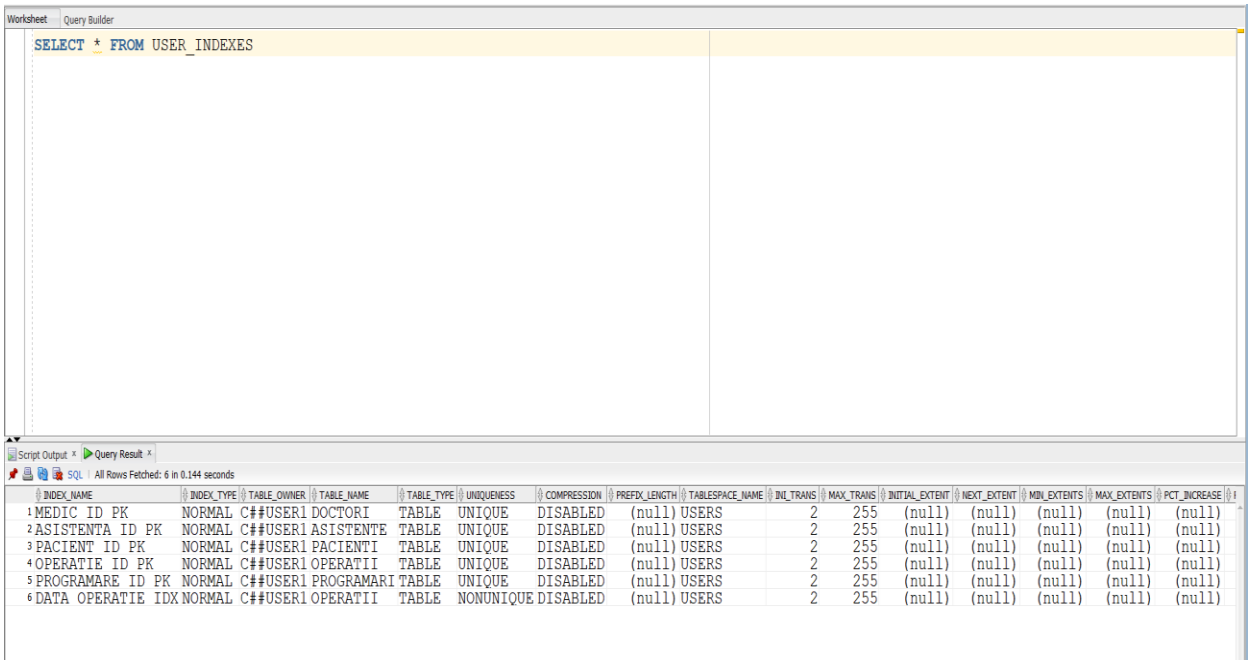
Creare index

```
CREATE INDEX data_operatie_idx
ON Operatii(data)
```

Script Output | Query Result | Task completed in 0.092 seconds

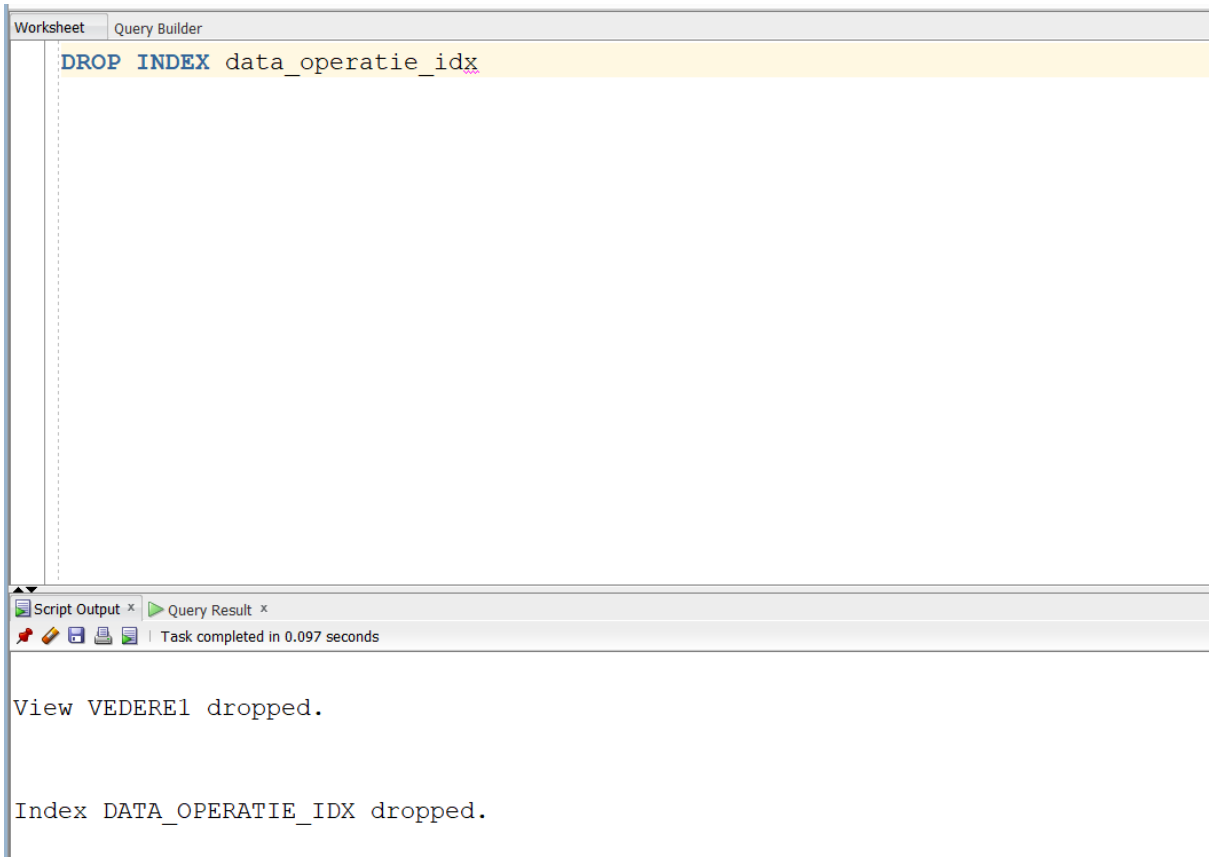
```
SYNONYM OP created.


Index DATA_OPERATIE_IDX created.
```

Confirmare existenta index

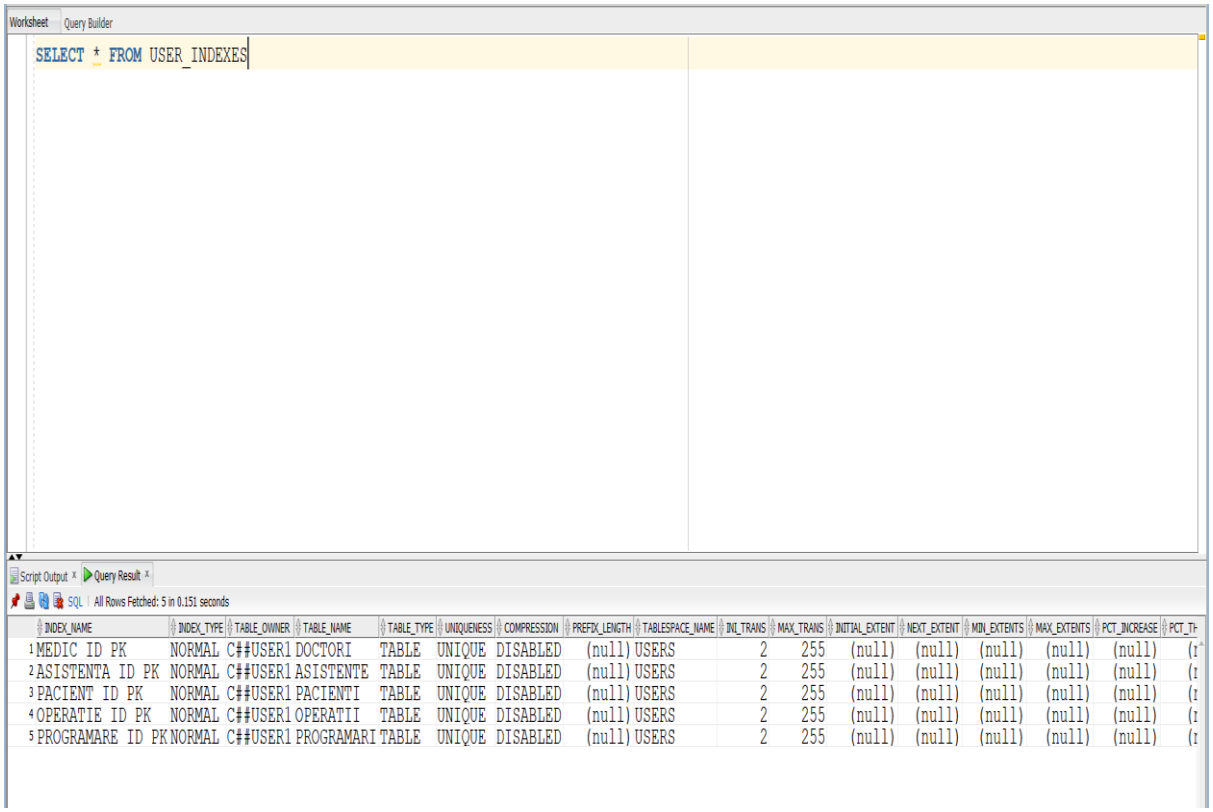


	INDEX_NAME	INDEX_TYPE	TABLE_OWNER	TABLE_NAME	TABLE_TYPE	UNIQUENESS	COMPRESSION	PREFIX_LENGTH	TABLESPACE_NAME	INI_TRANS	MAX_TRANS	INITIAL_EXTENT	NEXT_EXTENT	MIN_EXTENTS	MAX_EXTENTS	PCT_INCREASE
1	MEDIC_ID_PK	NORMAL	C##USER1	DOCTORI	TABLE	UNIQUE	DISABLED	(null)	USERS	2	255	(null)	(null)	(null)	(null)	(null)
2	ASISTENTA_ID_PK	NORMAL	C##USER1	ASISTENTE	TABLE	UNIQUE	DISABLED	(null)	USERS	2	255	(null)	(null)	(null)	(null)	(null)
3	PACIENT_ID_PK	NORMAL	C##USER1	PACIENTI	TABLE	UNIQUE	DISABLED	(null)	USERS	2	255	(null)	(null)	(null)	(null)	(null)
4	OPERATIE_ID_PK	NORMAL	C##USER1	OPERATII	TABLE	UNIQUE	DISABLED	(null)	USERS	2	255	(null)	(null)	(null)	(null)	(null)
5	PROGRAMARE_ID_PK	NORMAL	C##USER1	PROGRAMARI	TABLE	UNIQUE	DISABLED	(null)	USERS	2	255	(null)	(null)	(null)	(null)	(null)
6	DATA_OPERATIE_IDX	NORMAL	C##USER1	OPERATII	TABLE	NONUNIQUE	DISABLED	(null)	USERS	2	255	(null)	(null)	(null)	(null)	(null)

Stergere index

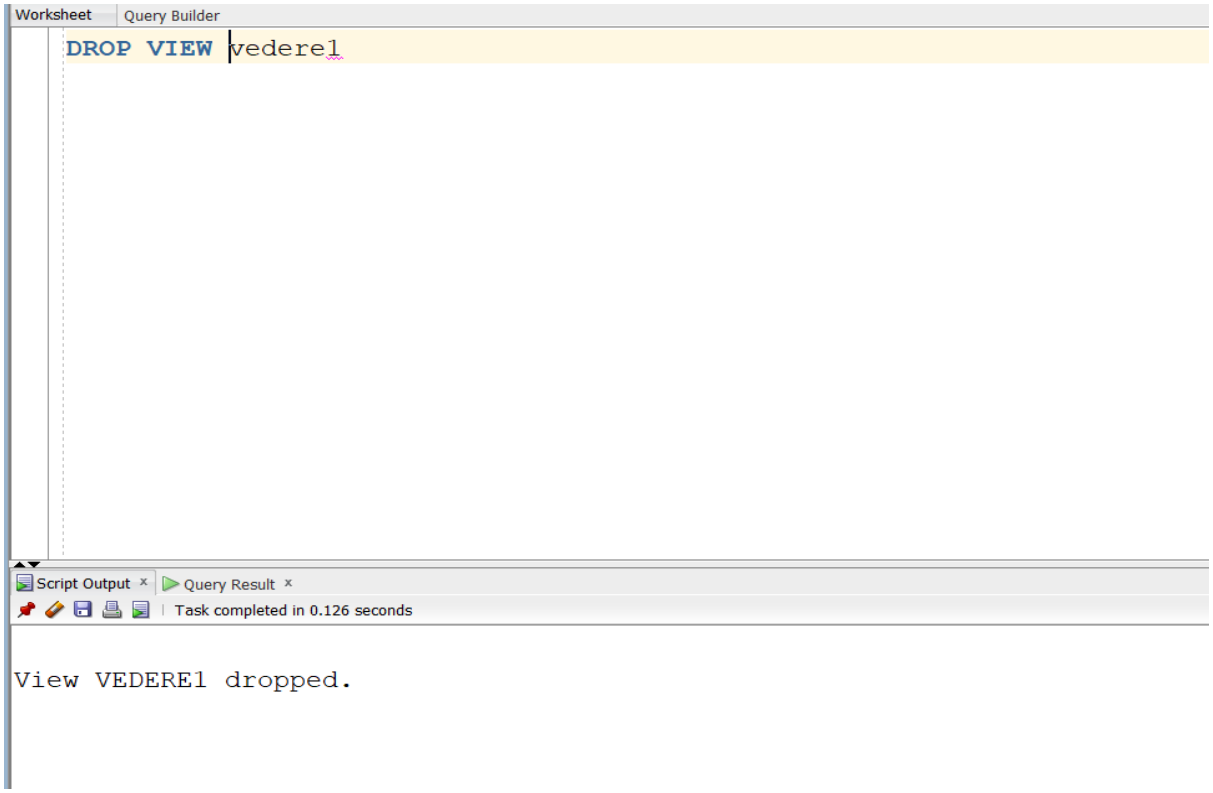


Confirmare inexistenta index

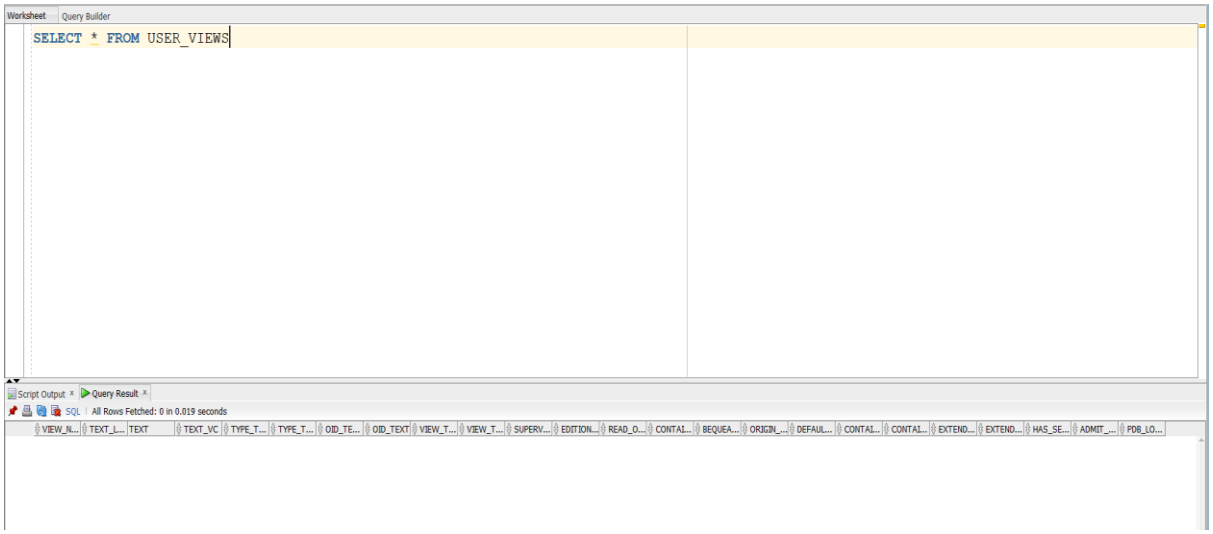


	INDEX_NAME	INDEX_TYPE	TABLE_OWNER	TABLE_NAME	TABLE_TYPE	UNIQUENESS	COMPRESSION	PREFIX_LENGTH	TABLESPACE_NAME	INI_TRANS	MAX_TRANS	INITIAL_EXTENT	NEXT_EXTENT	MIN_EXTENTS	MAX_EXTENTS	PCT_INCREASE	PCT_TH
1	MEDIC_ID_PK	NORMAL	C##USER1	DOCTORI	TABLE	UNIQUE	DISABLED	(null)	USERS	2	255	(null)	(null)	(null)	(null)	(null)	(n
2	ASISTENTA_ID_PK	NORMAL	C##USER1	ASISTENTE	TABLE	UNIQUE	DISABLED	(null)	USERS	2	255	(null)	(null)	(null)	(null)	(null)	(n
3	PACIENT_ID_PK	NORMAL	C##USER1	PACIENTI	TABLE	UNIQUE	DISABLED	(null)	USERS	2	255	(null)	(null)	(null)	(null)	(null)	(n
4	OPERATIE_ID_PK	NORMAL	C##USER1	OPERATII	TABLE	UNIQUE	DISABLED	(null)	USERS	2	255	(null)	(null)	(null)	(null)	(null)	(n
5	PROGRAMARE_ID_PK	NORMAL	C##USER1	PROGRAMARI	TABLE	UNIQUE	DISABLED	(null)	USERS	2	255	(null)	(null)	(null)	(null)	(null)	(n

Stergere vedere



Confirmare inexistenta vedere



7. Exemplificare de comenzi de prelucrare asupra datelor: adaugare, modificare, stergere, imbinare (merge), selectie

Pentru tabelul Doctori:

INSERT INTO Doctori VALUES(1,'Emanuel Albu',30,'Endocrinologie');

INSERT INTO Doctori VALUES(s_nrdoctor.NEXTVAL,'Emanuel Albu',30,'Endocrinologie');

INSERT INTO Doctori VALUES(s_nrdoctor.NEXTVAL,'Lidia Todica',49,'Nefrologie');

INSERT INTO Doctori VALUES(s_nrdoctor.NEXTVAL,'Claudia Gherban',47,'Ortopedie');

INSERT INTO Doctori VALUES(s_nrdoctor.NEXTVAL,'Bogdan Diaconu',52,'Hematologie');

INSERT INTO Doctori VALUES(s_nrdoctor.NEXTVAL,'Cosmin Tamas',63,'Pneumologie');

INSERT INTO Doctori VALUES(s_nrdoctor.NEXTVAL,'Doina Birsan',35,'Chirurgie generala');

INSERT INTO Doctori VALUES(s_nrdoctor.NEXTVAL,'Adelina Dragan',31,'Oftalmologie');

INSERT INTO Doctori VALUES(s_nrdoctor.NEXTVAL,'Dragos Ciobanu',47,'Urologie');

INSERT INTO Doctori VALUES(s_nrdoctor.NEXTVAL,'Emilian Manole',51,'Oncologie');

INSERT INTO Doctori VALUES(s_nrdoctor.NEXTVAL,'Otilia Vlasceanu',40,'Alergologie');

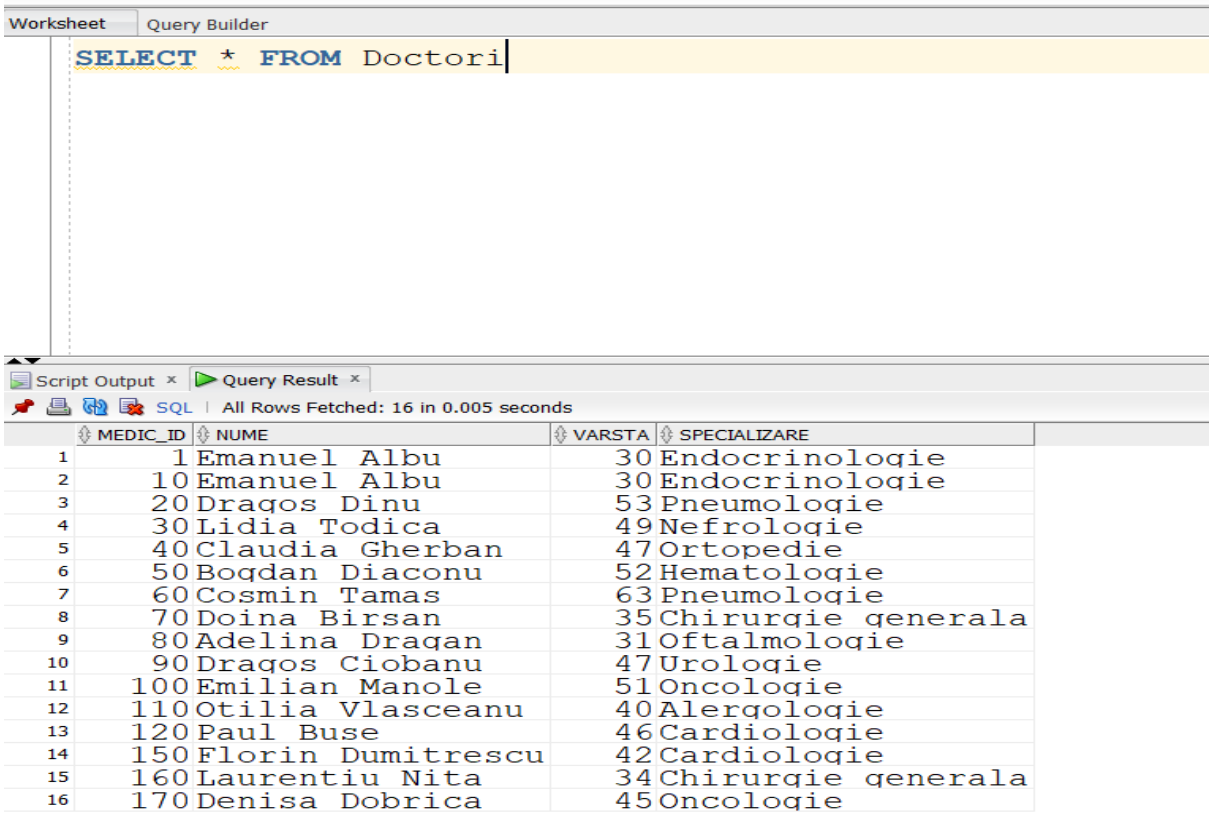
INSERT INTO Doctori VALUES(s_nrdoctor.NEXTVAL,'Paul Buse',46,'Cardiologie');

INSERT INTO Doctori VALUES(s_nrdoctor.NEXTVAL,'Dragos Dinu',53,'Pneumologie');

INSERT INTO Doctori VALUES(s_nrdoctor.NEXTVAL,'Denisa Dobrica',45,'Obstetica-ginecologie');

INSERT INTO Doctori VALUES(s_nrdoctor.NEXTVAL,'Florin Dumitrescu',42,'Cardiologie pediatrica');

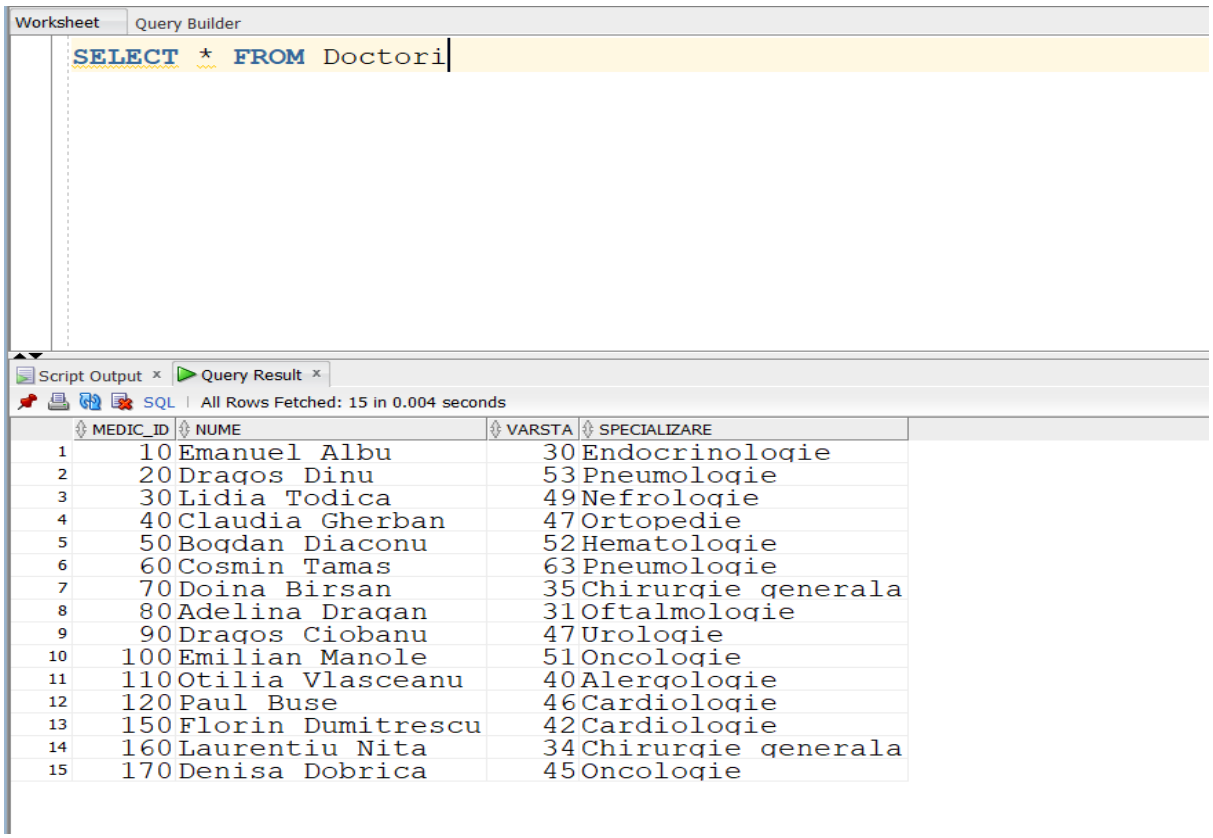
INSERT INTO Doctori VALUES(s_nrdoctor.NEXTVAL,'Laurentiu Nita',34,'Chirurgie generala');



	MEDIC_ID	NUME	VARSTA	SPECIALIZARE
1	1	Emanuel Albu	30	Endocrinologie
2	10	Emanuel Albu	30	Endocrinologie
3	20	Dragos Dinu	53	Pneumologie
4	30	Lidia Todica	49	Nefrologie
5	40	Claudia Gherban	47	Ortopedie
6	50	Bogdan Diaconu	52	Hematologie
7	60	Cosmin Tamas	63	Pneumologie
8	70	Doina Birsan	35	Chirurgie generala
9	80	Adelina Dragan	31	Oftalmologie
10	90	Dragos Ciobanu	47	Urologie
11	100	Emilian Manole	51	Oncologie
12	110	Otilia Vlasceanu	40	Alergologie
13	120	Paul Buse	46	Cardiologie
14	150	Florin Dumitrescu	42	Cardiologie
15	160	Laurentiu Nita	34	Chirurgie generala
16	170	Denisa Dobrica	45	Oncologie

DELETE FROM Doctori

WHERE medic_id=1



	MEDIC_ID	NUME	VARSTA	SPECIALIZARE
1	10	Emanuel Albu	30	Endocrinologie
2	20	Dragos Dinu	53	Pneumologie
3	30	Lidia Todica	49	Nefrologie
4	40	Claudia Gherban	47	Ortopedie
5	50	Bogdan Diaconu	52	Hematologie
6	60	Cosmin Tamas	63	Pneumologie
7	70	Doina Birsan	35	Chirurgie generala
8	80	Adelina Dragan	31	Oftalmologie
9	90	Dragos Ciobanu	47	Urologie
10	100	Emilian Manole	51	Oncologie
11	110	Otilia Vlasceanu	40	Alergologie
12	120	Paul Buse	46	Cardiologie
13	150	Florin Dumitrescu	42	Cardiologie
14	160	Laurentiu Nita	34	Chirurgie generala
15	170	Denisa Dobrica	45	Oncologie

Pentru tabelul Asistente

INSERT INTO Asistente VALUES(s_nrasistenta.NEXTVAL,'Dalia Florescu',33);

INSERT INTO Asistente VALUES(s_nrasistenta.NEXTVAL,'Codrut Moisescu',45);

INSERT INTO Asistente VALUES(s_nrasistenta.NEXTVAL,'Daria Olteanu',29);

INSERT INTO Asistente VALUES(s_nrasistenta.NEXTVAL,'Sabina Craciun',53);

INSERT INTO Asistente VALUES(s_nrasistenta.NEXTVAL,'Mirel Dobre',40);

INSERT INTO Asistente VALUES(s_nrasistenta.NEXTVAL,'Melania Grigorita',25);

INSERT INTO Asistente VALUES(s_nrasistenta.NEXTVAL,'Florin Manole',36);

INSERT INTO Asistente VALUES(s_nrasistenta.NEXTVAL,'Marius Matei',42);

INSERT INTO Asistente VALUES(s_nrasistenta.NEXTVAL,'Evelina Alecu',28);

INSERT INTO Asistente VALUES(s_nrasistenta.NEXTVAL,'Larisa Tomulescu',30);

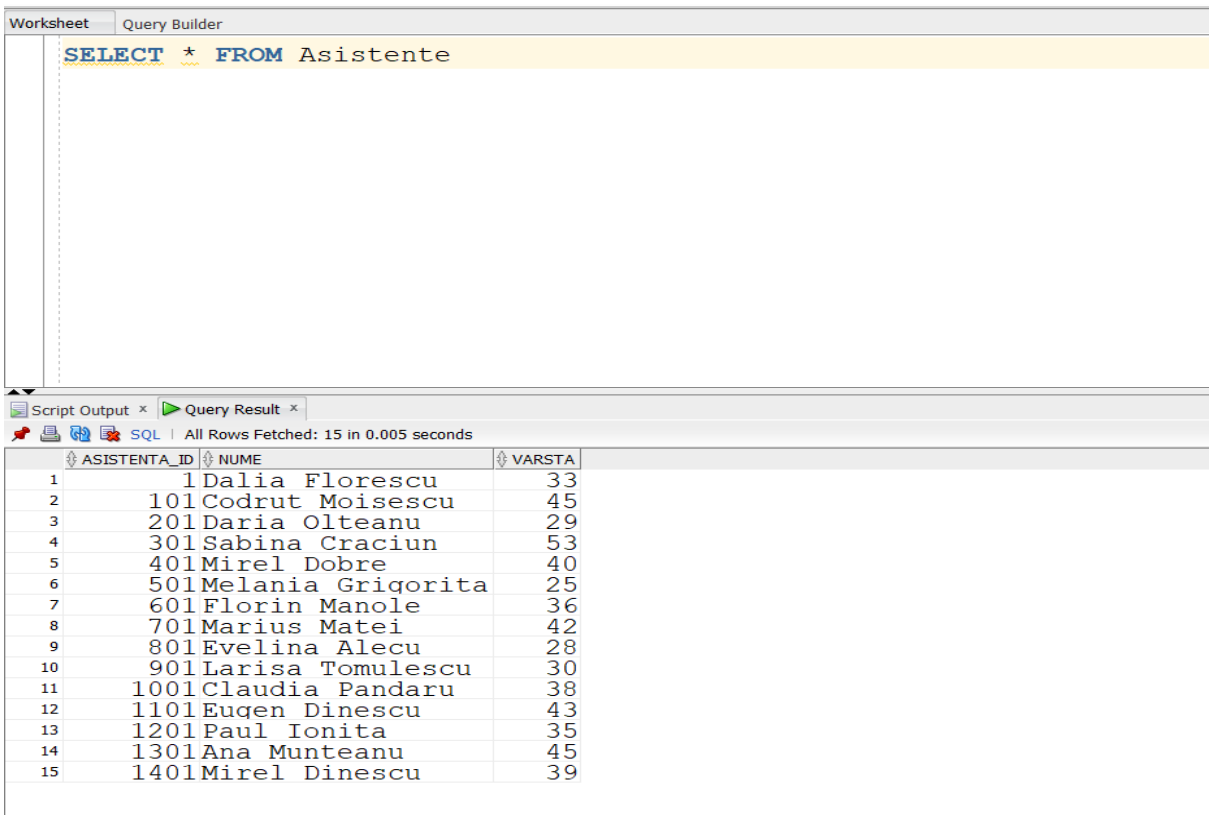
INSERT INTO Asistente VALUES(s_nrasistenta.NEXTVAL,'Claudia Pandaru',38);

INSERT INTO Asistente VALUES(s_nrasistenta.NEXTVAL,'Eugen Dinescu',43);

INSERT INTO Asistente VALUES(s_nrasistenta.NEXTVAL,'Paul Ionita',35);

INSERT INTO Asistente VALUES(s_nrasistenta.NEXTVAL,'Ana Munteanu',45);

INSERT INTO Asistente VALUES(s_nrasistenta.NEXTVAL,'Mirel Dinescu',39);



	ASISTENTA_ID	NUME	VARSTA
1	1	Dalia Florescu	33
2	101	Codrut Moisescu	45
3	201	Daria Olteanu	29
4	301	Sabina Craciun	53
5	401	Mirel Dobre	40
6	501	Melania Grigorita	25
7	601	Florin Manole	36
8	701	Marius Matei	42
9	801	Evelina Alecu	28
10	901	Larisa Tomulescu	30
11	1001	Claudia Pandaru	38
12	1101	Eugen Dinescu	43
13	1201	Paul Ionita	35
14	1301	Ana Munteanu	45
15	1401	Mirel Dinescu	39

Pentru tabelul Pacienti

INSERT INTO Pacienti VALUES(s_nrpacient.NEXTVAL,'Victor Tamas',75,'Strada Eclipsei','12-FEB-2021','01-MAR-2021',70);

INSERT INTO Pacienti VALUES(s_nrpacient.NEXTVAL,'Viorela Radu',52,'Strada Caiuti','27-APR-2021','28-APR-2021',20);

INSERT INTO Pacienti VALUES(s_nrpacient.NEXTVAL,'Adelina Marguta',49,'Strada Sacele','20-SEP-2021','02-OCT-2021',100);

INSERT INTO Pacienti VALUES(s_nrpacient.NEXTVAL,'Robert Dumitrescu',66,'Strada Padina','08-JUN-2021','15-JUN-2021',170);

INSERT INTO Pacienti VALUES(s_nrpacient.NEXTVAL,'Smaranda Chirita',40,'Strada Iacobeni','10-AUG-2021','14-AUG-2021',120);

INSERT INTO Pacienti VALUES(s_nrpacient.NEXTVAL,'Lidia Gherghe',54,'Strada Racari','10-JUN-2021','09-SEP-2021',160);

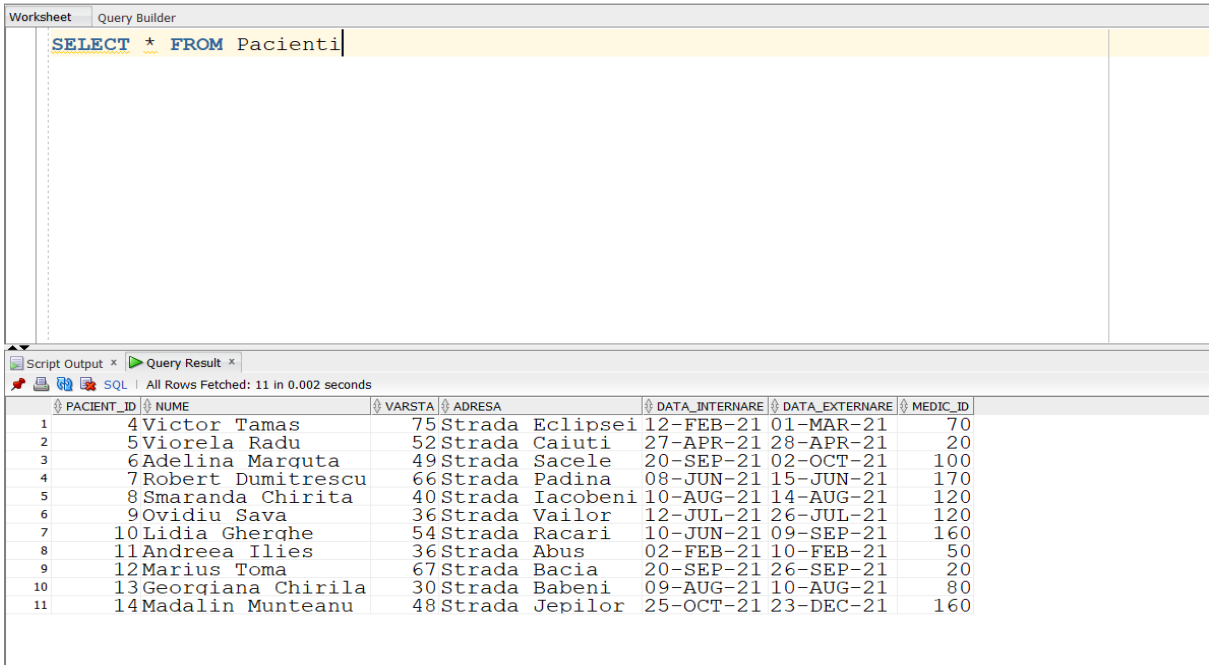
INSERT INTO Pacienti VALUES(s_nrpacient.NEXTVAL,'Ovidiu Sava',36,'Strada Vailor','12-JUL-2021','26-JUL-2021',120);

INSERT INTO Pacienti VALUES(s_nrpacient.NEXTVAL,'Madalin Munteanu',48,'Strada Jepilor','25-OCT-2021','23-DEC-2021',160);

INSERT INTO Pacienti VALUES(s_nrpacient.NEXTVAL,'Georgiana Chirila',30,'Strada Babeni','9-AUG-2021','10-AUG-2021',80);

INSERT INTO Pacienti VALUES(s_nrpacient.NEXTVAL,'Marius Toma',67,'Strada Bacia','20-SEP-2021','26-SEP-2021',20);

INSERT INTO Pacienti VALUES(s_nrpacient.NEXTVAL,'Andreea Ilies',36,'Strada Abus','2-FEB-2021','10-FEB-2021',50);

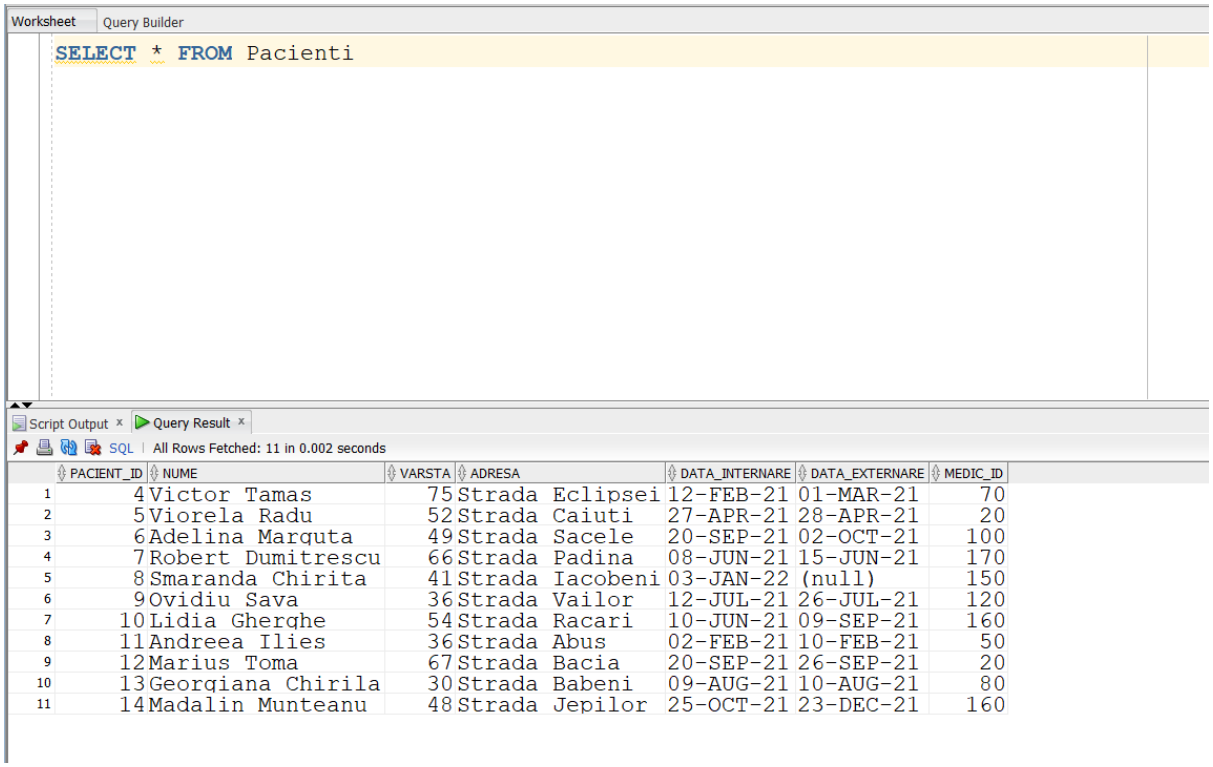


	PACIENT_ID	NUME	VARSTA	ADRESA	DATA_INTERNARE	DATA_EXTERNARE	MEDIC_ID
1	4	Victor Tamas	75	Strada Eclipsei	12-FEB-21	01-MAR-21	70
2	5	Viorela Radu	52	Strada Caiuti	27-APR-21	28-APR-21	20
3	6	Adelina Marguta	49	Strada Sacele	20-SEP-21	02-OCT-21	100
4	7	Robert Dumitrescu	66	Strada Padina	08-JUN-21	15-JUN-21	170
5	8	Smaranda Chirita	40	Strada Iacobeni	10-AUG-21	14-AUG-21	120
6	9	Ovidiu Sava	36	Strada Vailor	12-JUL-21	26-JUL-21	120
7	10	Lidia Gherghe	54	Strada Racari	10-JUN-21	09-SEP-21	160
8	11	Andreea Ilies	36	Strada Abus	02-FEB-21	10-FEB-21	50
9	12	Marius Toma	67	Strada Bacia	20-SEP-21	26-SEP-21	20
10	13	Georgiana Chirila	30	Strada Babeni	09-AUG-21	10-AUG-21	80
11	14	Madalin Munteanu	48	Strada Jepilor	25-OCT-21	23-DEC-21	160

UPDATE Pacienti

SET varsta=41,data_internare='03-JAN-2022',data_externare=NULL,medic_id=150

WHERE pacient_id=8



	PACIENT_ID	NUME	VARSTA	ADRESA	DATA_INTERNARE	DATA_EXTERNARE	MEDIC_ID
1	4	Victor Tamas	75	Strada Eclipsei	12-FEB-21	01-MAR-21	70
2	5	Viorela Radu	52	Strada Caiuti	27-APR-21	28-APR-21	20
3	6	Adelina Marquta	49	Strada Sacele	20-SEP-21	02-OCT-21	100
4	7	Robert Dumitrescu	66	Strada Padina	08-JUN-21	15-JUN-21	170
5	8	Smaranda Chirita	41	Strada Iacobeni	03-JAN-22	(null)	150
6	9	Ovidiu Sava	36	Strada Vailor	12-JUL-21	26-JUL-21	120
7	10	Lidia Gherghe	54	Strada Racari	10-JUN-21	09-SEP-21	160
8	11	Andreea Ilies	36	Strada Abus	02-FEB-21	10-FEB-21	50
9	12	Marius Toma	67	Strada Bacia	20-SEP-21	26-SEP-21	20
10	13	Georgiana Chirila	30	Strada Babeni	09-AUG-21	10-AUG-21	80
11	14	Madalin Munteanu	48	Strada Jepilor	25-OCT-21	23-DEC-21	160

Pentru tabelul Programari

INSERT INTO Programari VALUES(s_nrprogramare.NEXTVAL,TO_DATE('2022/01/03 14:30', 'yyyy/mm/dd hh24:mi'),50,5,101);

INSERT INTO Programari VALUES(s_nrprogramare.NEXTVAL,TO_DATE('2021/12/29 15:00', 'yyyy/mm/dd hh24:mi'),110,11,301);

INSERT INTO Programari VALUES(s_nrprogramare.NEXTVAL,TO_DATE('2022/12/30 12:00', 'yyyy/mm/dd hh24:mi'),50,5,101);

INSERT INTO Programari VALUES(s_nrprogramare.NEXTVAL,TO_DATE('2022/12/28 16:30', 'yyyy/mm/dd hh24:mi'),110,14,201);

INSERT INTO Programari VALUES(s_nrprogramare.NEXTVAL,TO_DATE('2022/12/20 13:30', 'yyyy/mm/dd hh24:mi'),120,6,301);

INSERT INTO Programari VALUES(s_nrprogramare.NEXTVAL,TO_DATE('2022/02/10 12:30', 'yyyy/mm/dd hh24:mi'),30,13,701);

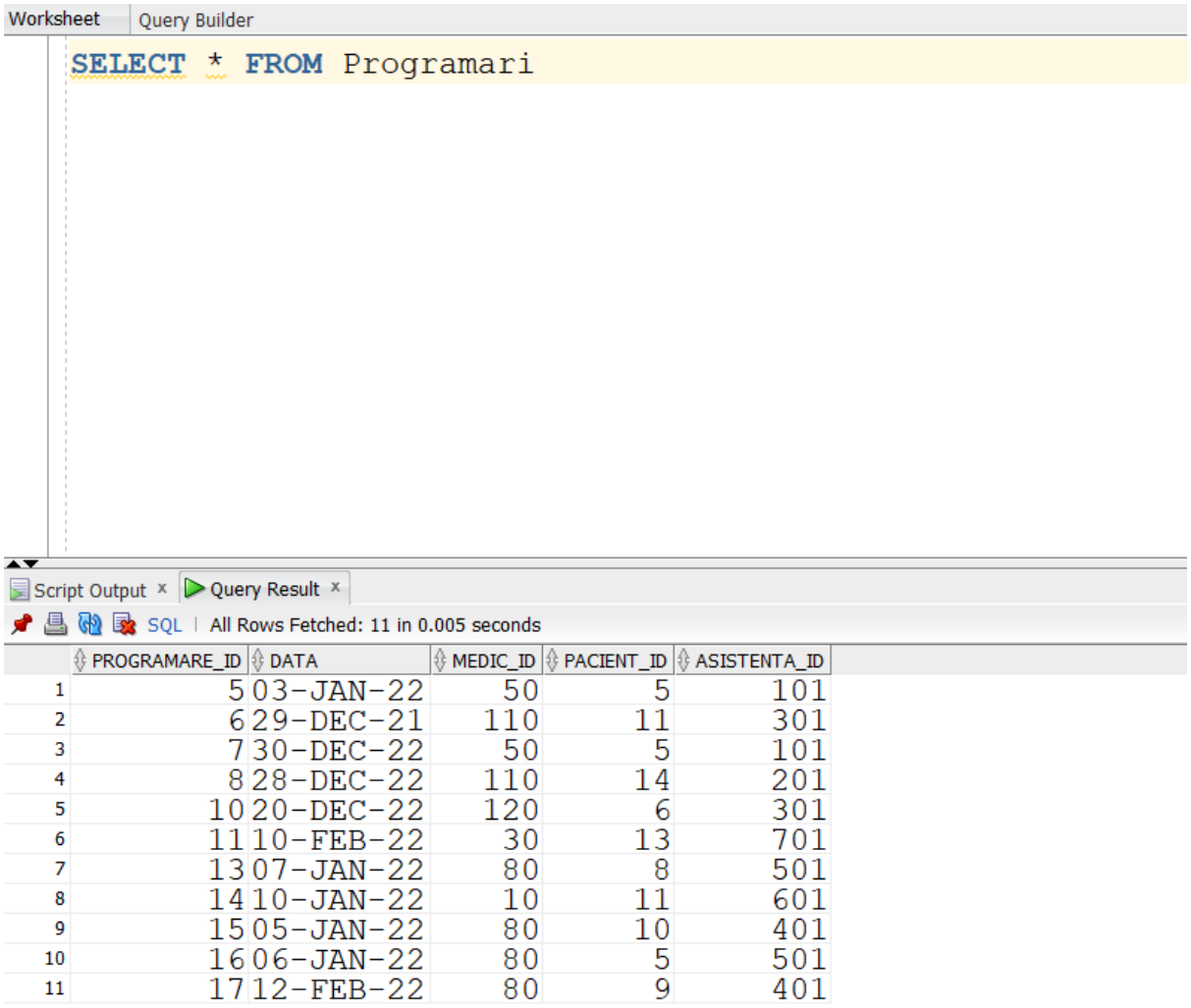
INSERT INTO Programari VALUES(s_nrprogramare.NEXTVAL,TO_DATE('2022/01/10 15:30', 'yyyy/mm/dd hh24:mi'),10,11,601);

INSERT INTO Programari VALUES(s_nrprogramare.NEXTVAL,TO_DATE('2022/01/07 16:00', 'yyyy/mm/dd hh24:mi'),80,8,501);

INSERT INTO Programari VALUES(s_nrprogramare.NEXTVAL,TO_DATE('2022/01/05 12:00', 'yyyy/mm/dd hh24:mi'),80,10,401);

INSERT INTO Programari VALUES(s_nrprogramare.NEXTVAL,TO_DATE('2022/01/06 14:00', 'yyyy/mm/dd hh24:mi'),80,5,501);

INSERT INTO Programari VALUES(s_nrprogramare.NEXTVAL,TO_DATE('2022/02/12 13:30', 'yyyy/mm/dd hh24:mi'),80,9,401);

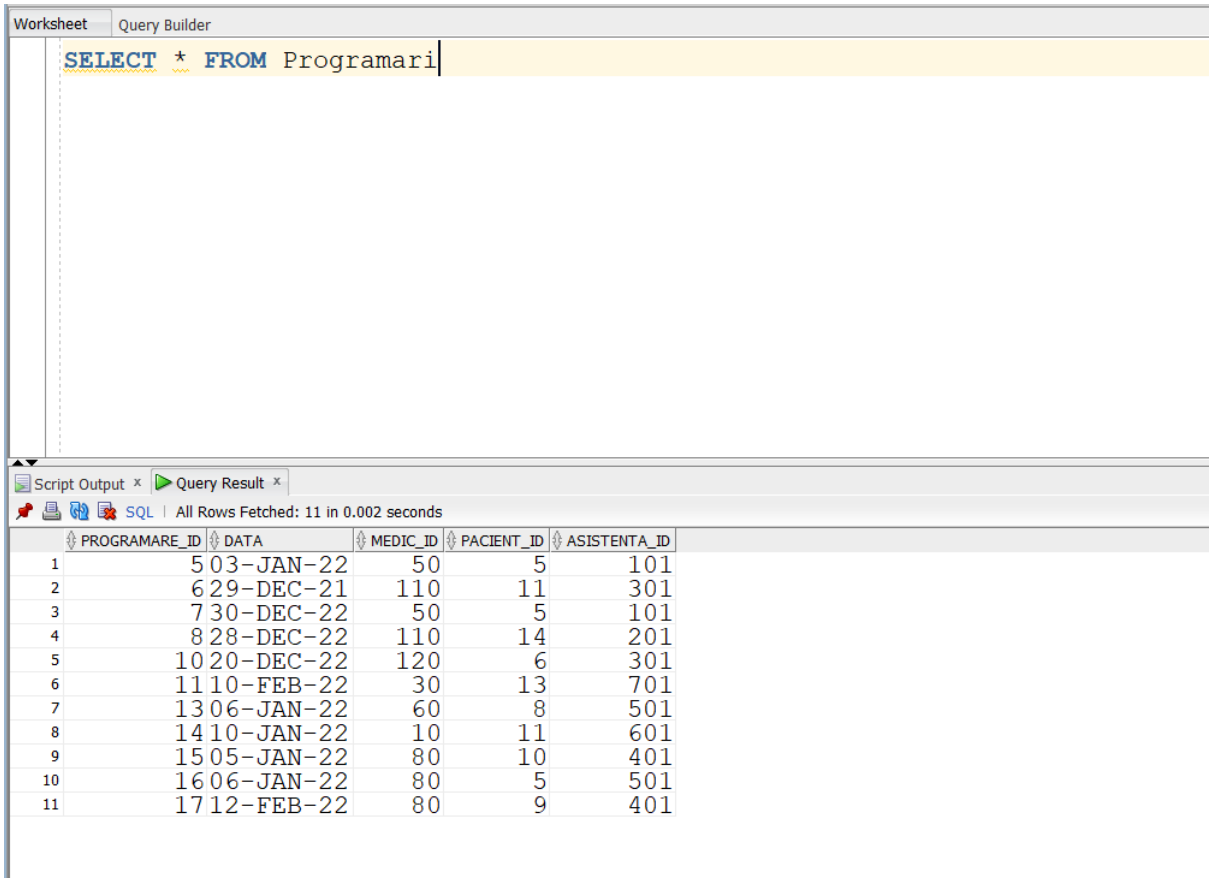


	PROGRAMARE_ID	DATA	MEDIC_ID	PACIENT_ID	ASISTENTA_ID
1	5	03-JAN-22	50	5	101
2	6	29-DEC-21	110	11	301
3	7	30-DEC-22	50	5	101
4	8	28-DEC-22	110	14	201
5	10	20-DEC-22	120	6	301
6	11	10-FEB-22	30	13	701
7	13	07-JAN-22	80	8	501
8	14	10-JAN-22	10	11	601
9	15	05-JAN-22	80	10	401
10	16	06-JAN-22	80	5	501
11	17	12-FEB-22	80	9	401

UPDATE Programari

SET medic_id=60,data=TO_DATE('2022/01/06 15:00', 'yyyy/mm/dd hh24:mi')

WHERE programare_id=13



	PROGRAMARE_ID	DATA	MEDIC_ID	PACIENT_ID	ASISTENTA_ID
1	5	03-JAN-22	50	5	101
2	6	29-DEC-21	110	11	301
3	7	30-DEC-22	50	5	101
4	8	28-DEC-22	110	14	201
5	10	20-DEC-22	120	6	301
6	11	10-FEB-22	30	13	701
7	13	06-JAN-22	60	8	501
8	14	10-JAN-22	10	11	601
9	15	05-JAN-22	80	10	401
10	16	06-JAN-22	80	5	501
11	17	12-FEB-22	80	9	401

Pentru tabelul Operatii

INSERT INTO Operatii VALUES(s_nroperatie.NEXTVAL,5,TO_DATE('2022/01/20 7:30', 'yyyy/mm/dd hh24:mi'),70,4,301);

INSERT INTO Operatii VALUES(s_nroperatie.NEXTVAL,4,TO_DATE('2022/02/10 8:00', 'yyyy/mm/dd hh24:mi'),170,10,601);

INSERT INTO Operatii VALUES(s_nroperatie.NEXTVAL,3,TO_DATE('2022/03/01 12:30', 'yyyy/mm/dd hh24:mi'),160,14,701);

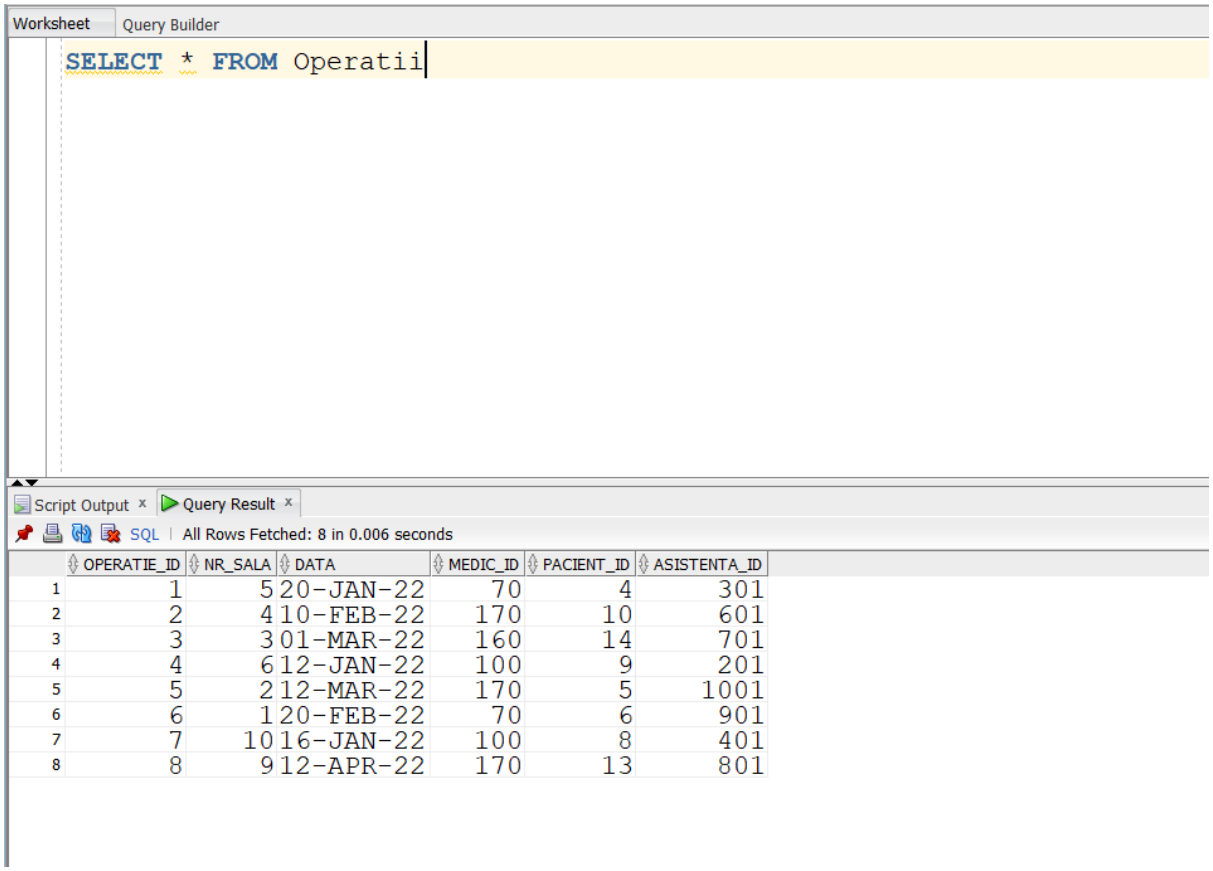
INSERT INTO Operatii VALUES(s_nroperatie.NEXTVAL,6,TO_DATE('2022/01/12 16:30', 'yyyy/mm/dd hh24:mi'),100,9,201);

INSERT INTO Operatii VALUES(s_nroperatie.NEXTVAL,2,TO_DATE('2022/03/12 10:30', 'yyyy/mm/dd hh24:mi'),170,5,1001);

INSERT INTO Operatii VALUES(s_nroperatie.NEXTVAL,1,TO_DATE('2022/02/20 9:30', 'yyyy/mm/dd hh24:mi'),70,6,901);

INSERT INTO Operatii VALUES(s_nroperatie.NEXTVAL,10,TO_DATE('2022/01/16 15:00', 'yyyy/mm/dd hh24:mi'),100,8,401);

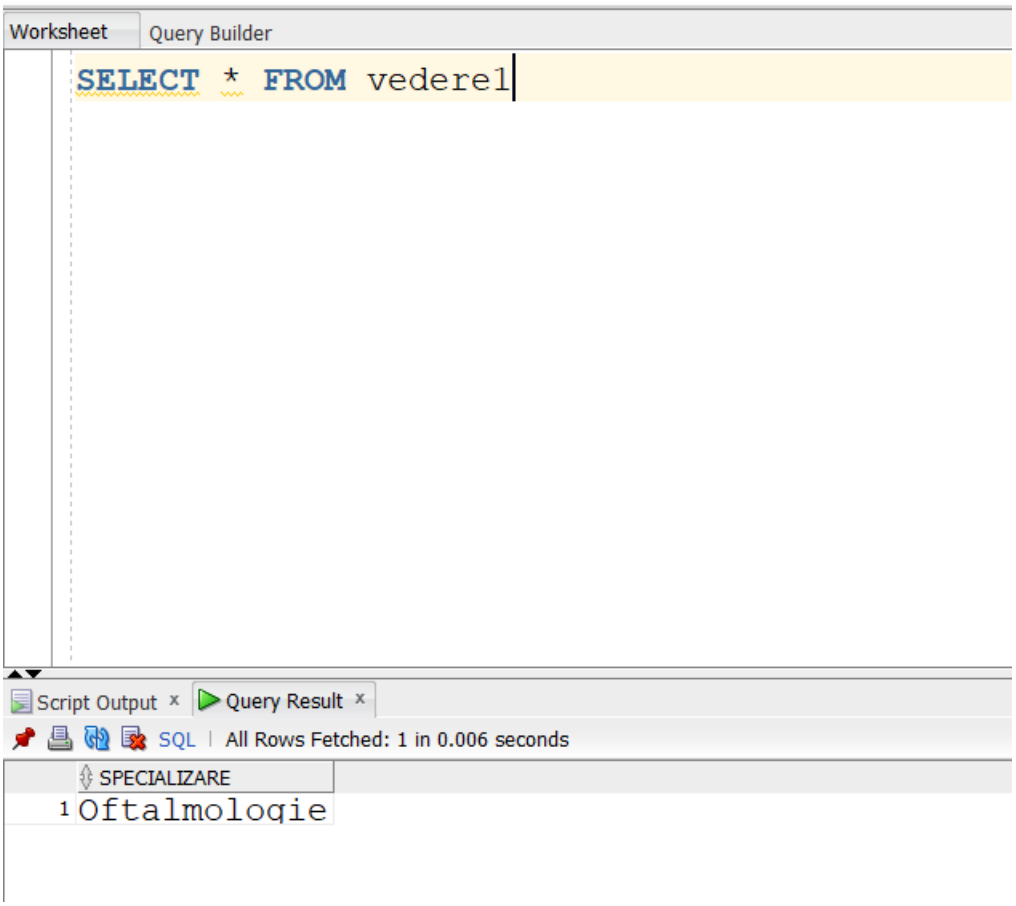
INSERT INTO Operatii VALUES(s_nroperatie.NEXTVAL,9,TO_DATE('2022/04/12 13:30', 'yyyy/mm/dd hh24:mi'),170,13,801);



	OPERATIE_ID	NR_SALA	DATA	MEDIC_ID	PACIENT_ID	ASISTENTA_ID
1	1	5	20-JAN-22	70	4	301
2	2	4	10-FEB-22	170	10	601
3	3	3	01-MAR-22	160	14	701
4	4	6	12-JAN-22	100	9	201
5	5	2	12-MAR-22	170	5	1001
6	6	1	20-FEB-22	70	6	901
7	7	10	16-JAN-22	100	8	401
8	8	9	12-APR-22	170	13	801

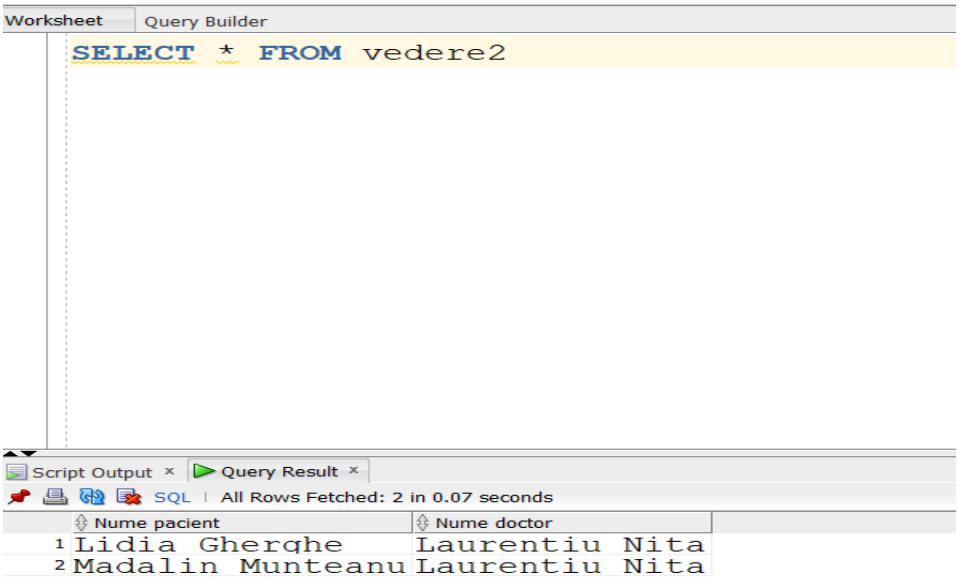
8. Selectia datelor (minim 5 interogari complexe ce ar trebui incluse in definitia unor view-uri), ce contin conditii/clauze complexe, inclusiv din laboratorul 13.

1. Sa se creeze o vedere ce contine specializarea doctorului care are cele mai multe programari in luna ianuarie.
   CREATE VIEW vedere1
   AS SELECT specializare
   FROM Doctori
   WHERE medic_id = (SELECT Doctori.medic_id
   FROM Doctori, Programari
   WHERE Doctori.medic_id = Programari.medic_id
   Group by Doctori.medic_id
   ORDER BY COUNT(programare_id) DESC
   FETCH FIRST 1 ROWS ONLY)



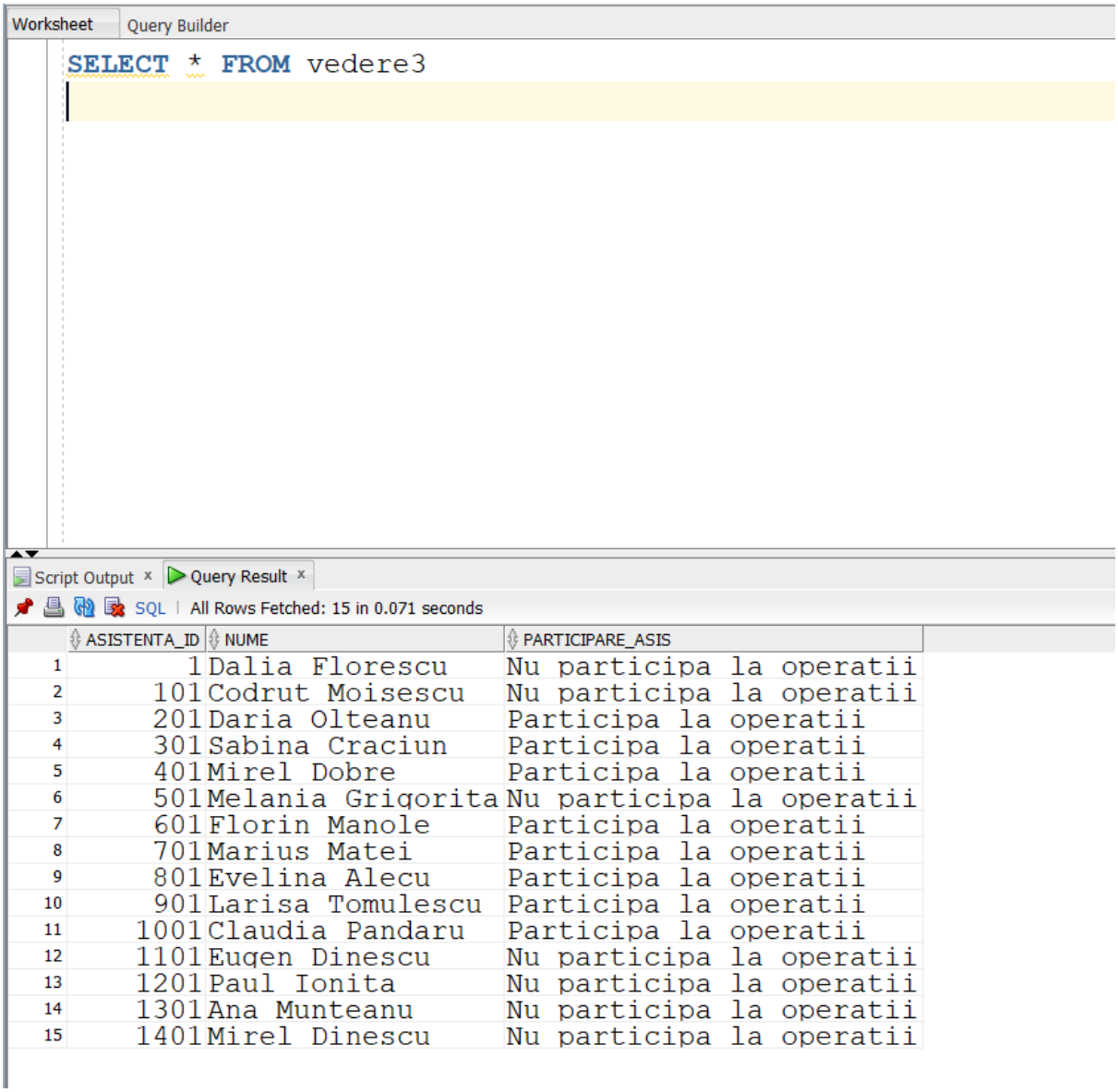
2. Sa se creeze o vedere ce contine numele si doctorul pacientilor care au fost internati perioada mai lunga decat numarul mediu de zile de internare in spital.

```
CREATE VIEW vedere2
AS SELECT p1.nume "Nume pacient",Doctori.nume "Nume doctor"
FROM Pacienti p1,Doctori
WHERE Doctori.medic_id = p1.medic_id
AND (data_externare - data_internare) >= ( SELECT AVG(p2.data_externare -
p2.data_internare) FROM Pacienti p2)
```



3. Sa se creeze o vedere ce contine id-ul, numele asistentei si “Participa la operatii”|”Nu participa la operatii” in functie de situatie.

```
CREATE VIEW vedere3
AS SELECT asistenta_id,nume,
CASE
WHEN asistenta_id IN (SELECT asistenta_id FROM Operatii) THEN 'Participa la operatii'
ELSE 'Nu participa la operatii'
END Participare_asis
FROM Asistente
```

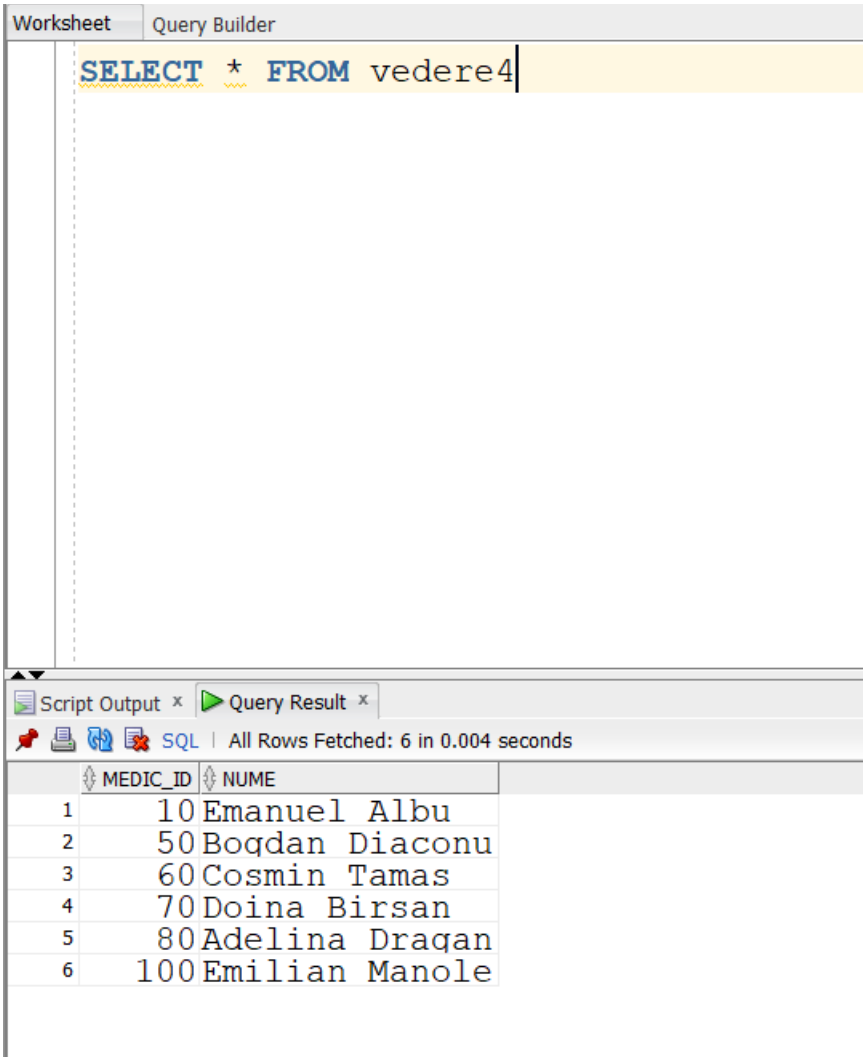


	ASISTENTA_ID	NUME	PARTICIPARE_ASIS
1	1	Dalia Florescu	Nu participa la operatii
2	101	Codrut Moisescu	Nu participa la operatii
3	201	Daria Olteanu	Participa la operatii
4	301	Sabina Craciun	Participa la operatii
5	401	Mirel Dobre	Participa la operatii
6	501	Melania Grigorita	Nu participa la operatii
7	601	Florin Manole	Participa la operatii
8	701	Marius Matei	Participa la operatii
9	801	Evelina Alecu	Participa la operatii
10	901	Larisa Tomulescu	Participa la operatii
11	1001	Claudia Pandaru	Participa la operatii
12	1101	Eugen Dinescu	Nu participa la operatii
13	1201	Paul Ionita	Nu participa la operatii
14	1301	Ana Munteanu	Nu participa la operatii
15	1401	Mirel Dinescu	Nu participa la operatii

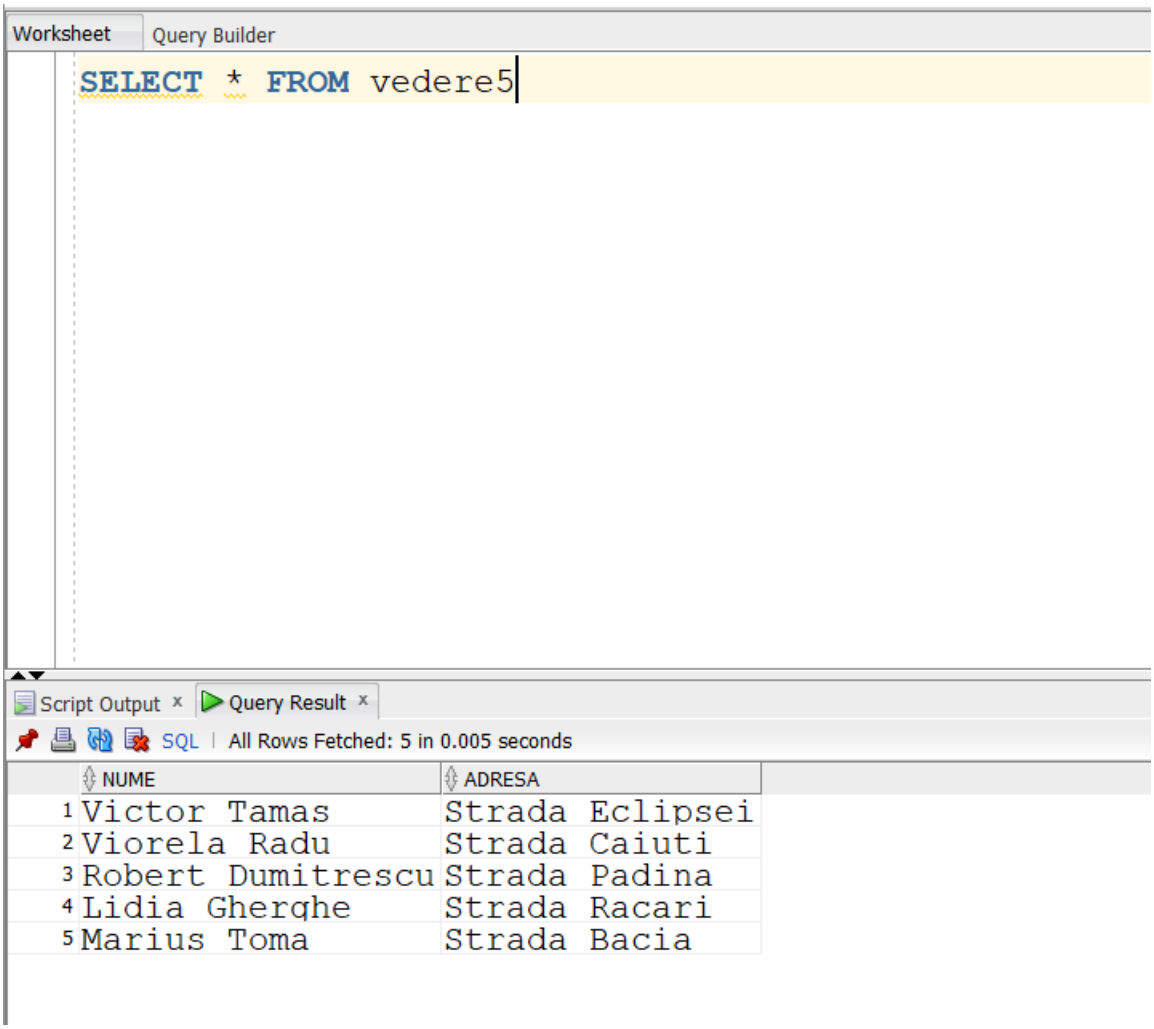
4. Sa se creeze o vedere ce contine id-ul si numele doctorului care au cel putin o programare sau o operatie in luna ianuarie.

```
CREATE VIEW vedere4
AS SELECT d.medic_id,d.nume
FROM Doctori d
WHERE
(SELECT COUNT(DISTINCT data)
FROM Programari p
```

WHERE d.medic_id=p.medic_id AND EXTRACT(MONTH FROM data)=1) +
(SELECT COUNT(DISTINCT data)
FROM Operatii o
WHERE d.medic_id=o.medic_id AND EXTRACT(MONTH FROM data)=1) > 0



5. Sa se creeze o vedere ce contine numele si adresa pacientilor care au varsta mai mare decat varsta medie.
CREATE VIEW vedere5
AS SELECT nume,adresa
FROM Pacienti
WHERE varsta>(SELECT AVG(varsta) FROM Pacienti)


Worksheet
Query Builder
SELECT * FROM vedere5
Script Output
Query Result
SQL | All Rows Fetched: 5 in 0.005 seconds
NUME
ADRESA
1 Victor Tamas Strada Eclipsei
2 Viorela Radu Strada Caiuti
3 Robert Dumitrescu Strada Padina
4 Lidia Gherghe Strada Racari
5 Marius Toma Strada Bacia