

Platforma digitala pentru jocuri video

Realizat de
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Grupa 252

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Exercitiul 1

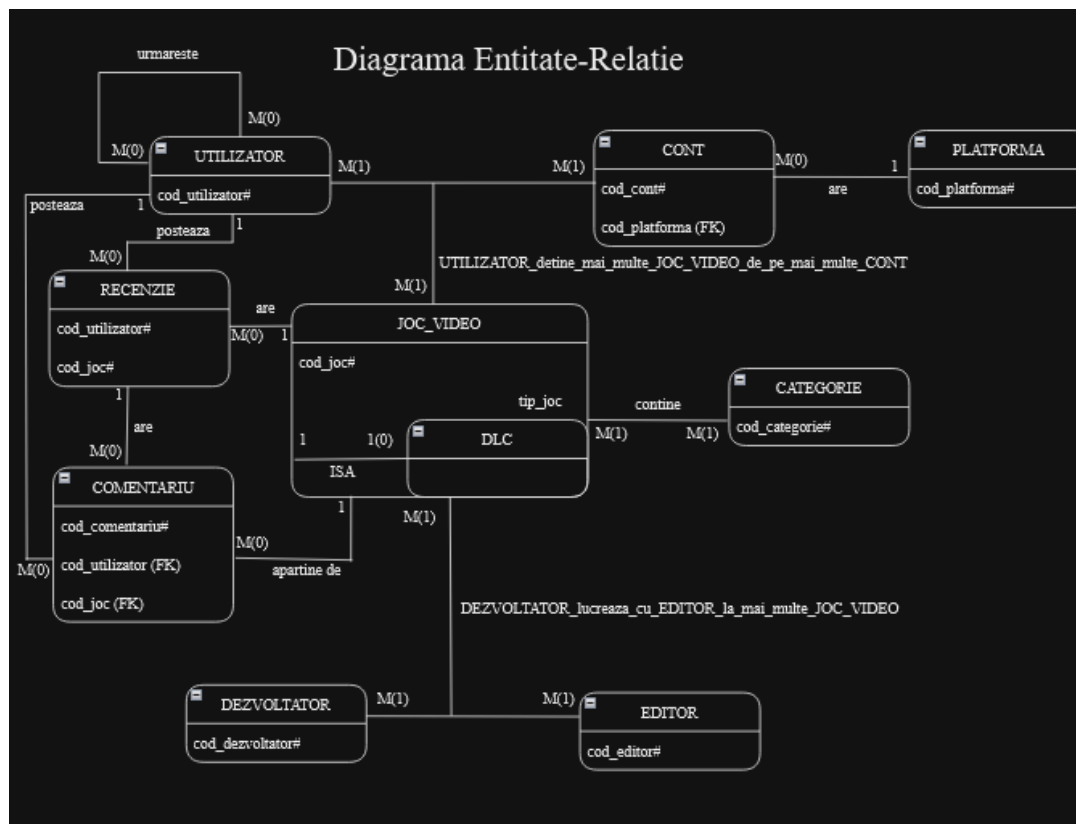
Cerinta: Prezentați pe scurt baza de date (utilitatea ei).

Rezolvare: Jocurile video fac parte din viața unui număr din ce în ce mai mare de oameni. Înșă, de-a lungul anilor, odată cu evoluția jocurilor, dar și cu disputele financiare și competițiile dintre diverse mari companii, au apărut din ce în ce mai multe platforme digitale în această industrie, fiecare detinând titlurile sale unice, ce nu pot fi găsite pe alte platforme. Din acest motiv, poate deveni incomod și chiar frustrant pentru utilizatori să schimbe aplicația de fiecare dată când doresc să joace un anumit joc și chiar să țină minte pe ce platformă se găsește jocul pe care vor să îl deschidă sau să îl cumpere. Aceste lucruri pot duce la o experiență destul de neplăcută ce nu ar trebui să își aibă locul în universul jocurilor video. Așadar, consider că soluția este dezvoltarea unei noi platforme care să le imbine pe toate celelalte la un loc. Utilizatorii se pot conecta cu fiecare cont în parte și își pot importa toate librăriile într-un singur loc, pe care îl pot configura după bunul plac. Astfel, jocurile pot fi accesate prin deschiderea unei singure aplicații și pot fi găsite printr-o simplă căutare, ceea ce poate salva mult timp și mulți nervi.

Exercitiul 2

Cerinta: Realizați diagrama entitate-relație (ERD): entitățile, relațiile și atributele trebuie definite în limba română.

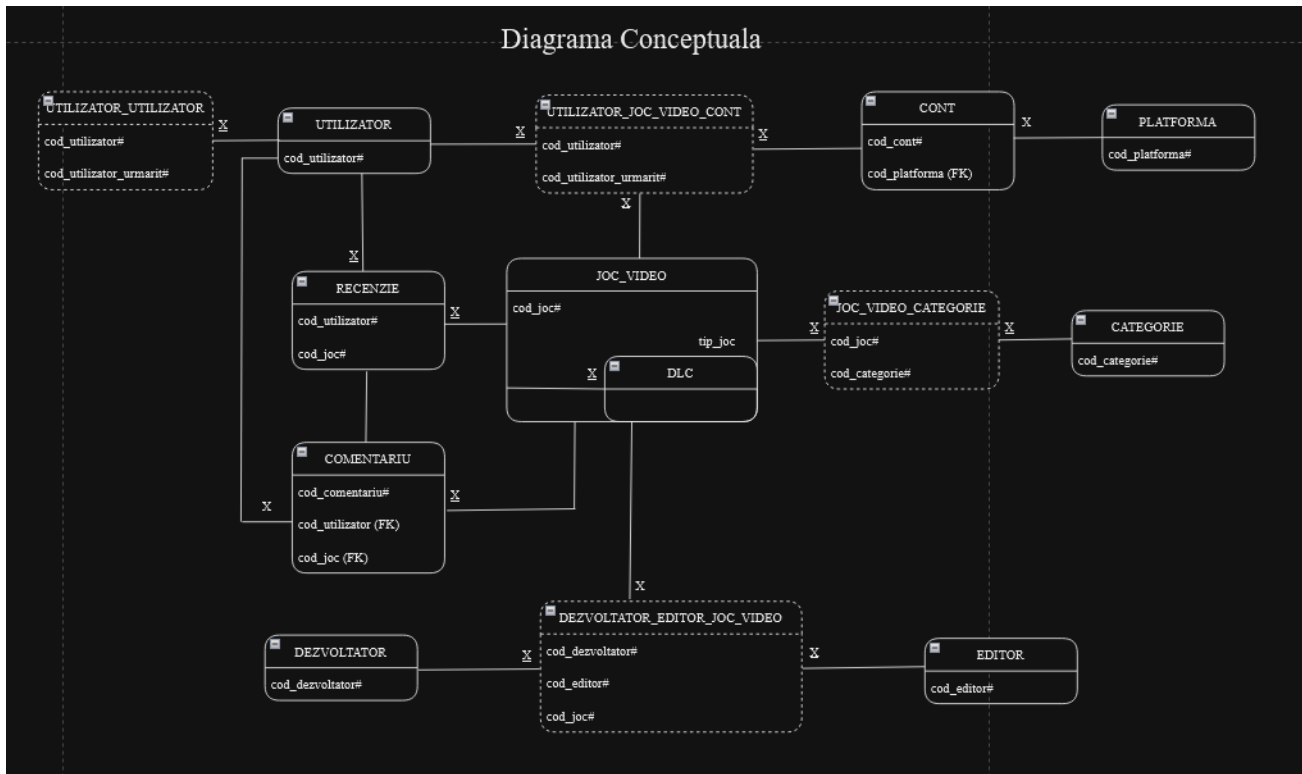
Rezolvare:



Exercitiul 3

Cerinta: Pornind de la diagrama entitate-relatie realizati diagrama conceptuala a modelului propus, integrand toate atributele necesare: entitatile, relatiile si atributele trebuie definite in limba romana.

Rezolvare:



Exercitiul 4

Cerinta: Implementati in Oracle diagrama conceptuala realizata: definiti toate tabelele, definind toate constrangerile de integritate necesare (chei primare, cheile externe etc).

Rezolvare:

```

CREATE TABLE UTILIZATOR
(
    cod_utilizator NUMBER(7) constraint pkey_utilizator PRIMARY KEY,
    nume VARCHAR2(30) constraint nume_utilizator NOT NULL,
    prenume VARCHAR2(30) constraint prenume_utilizator NOT NULL,
    parola VARCHAR(30) constraint parola_utilizator NOT NULL,
    email VARCHAR2(30) constraint email_valid CHECK(email LIKE '%@%.%'),
    data_inregistrare DATE DEFAULT SYSDATE
);

CREATE TABLE PLATFORMA

```

```

(
    cod_platforma NUMBER(3) constraint pkey_platforma PRIMARY KEY,
    nume VARCHAR2(30) constraint nume_platforma NOT NULL,
    data_lansare DATE,
    site VARCHAR2(50)
);

CREATE TABLE CONT
(
    cod_cont NUMBER(3) constraint pkey_cont PRIMARY KEY,
    cod_platforma NUMBER(3) constraint fkey_cont_platforma REFERENCES
PLATFORMA(cod_platforma),
    nume VARCHAR2(30) constraint nume_cont NOT NULL,
    parola VARCHAR2(30) constraint parola_cont NOT NULL
);

CREATE TABLE JOC_VIDEO
(
    cod_joc NUMBER(7) constraint pkey_joc_video PRIMARY KEY,
    nume VARCHAR2(50) constraint nume_joc_video NOT NULL,
    data_lansare DATE,
    durata NUMBER(5, 1),
    tip VARCHAR2(4) constraint tip_joc_video CHECK (tip IN ('baza', 'dlc'))
);

CREATE TABLE DLC
(
    cod_joc NUMBER(7) constraint pkey_dlc REFERENCES JOC_VIDEO(cod_joc),
    cod_joc_baza NUMBER(7) constraint fkey_joc_dlc REFERENCES JOC_VIDEO(cod_joc),
    constraint dlc_valid CHECK (cod_joc != cod_joc_baza)
);

CREATE TABLE RECENZIE
(
    cod_utilizator NUMBER(7) constraint fkey_recenzie_cod_utilizator REFERENCES
UTILIZATOR(cod_utilizator),
    cod_joc NUMBER(7) constraint fkey_recenzie_cod_joc REFERENCES JOC_VIDEO(cod_joc),
    continut VARCHAR2(2000),
    scor NUMBER(1) constraint scor_valid CHECK(scor BETWEEN 1 AND 5),
    data_postare DATE DEFAULT SYSDATE,
    constraint pkey_recenzie PRIMARY KEY(cod_utilizator, cod_joc)
);

CREATE TABLE COMENTARIU
(
    cod_comentariu NUMBER(9) constraint pkey_comentariu PRIMARY KEY,
    cod_utilizator_recenzie NUMBER(7),
    cod_joc NUMBER(7),
    cod_utilizator NUMBER(7) constraint fkey_comentariu_cod_utilizator REFERENCES
UTILIZATOR(cod_utilizator),
    continut VARCHAR2(1000) constraint continut_comentariu NOT NULL,
    data_postare DATE DEFAULT SYSDATE,
    constraint fkey_comentariu_recenzie FOREIGN KEY(cod_utilizator_recenzie, cod_joc)

```

```

REFERENCES RECENZIE(cod_utilizator, cod_joc)
);

CREATE TABLE CATEGORIE
(
    cod_categorie NUMBER(3) constraint pkey_categorie PRIMARY KEY,
    nume VARCHAR2(30) constraint nume_categorie NOT NULL
);

CREATE TABLE DEZVOLTATOR
(
    cod_dezvoltator NUMBER(5) constraint pkey_dezvoltator PRIMARY KEY,
    nume VARCHAR2(30) constraint nume_dezvoltator NOT NULL,
    site VARCHAR2(50),
    data_infiintare DATE
);

CREATE TABLE EDITOR
(
    cod_editor NUMBER(5) constraint pkey_editor PRIMARY KEY,
    nume VARCHAR2(30) constraint nume_editor NOT NULL,
    site VARCHAR2(50),
    data_infiintare DATE
);

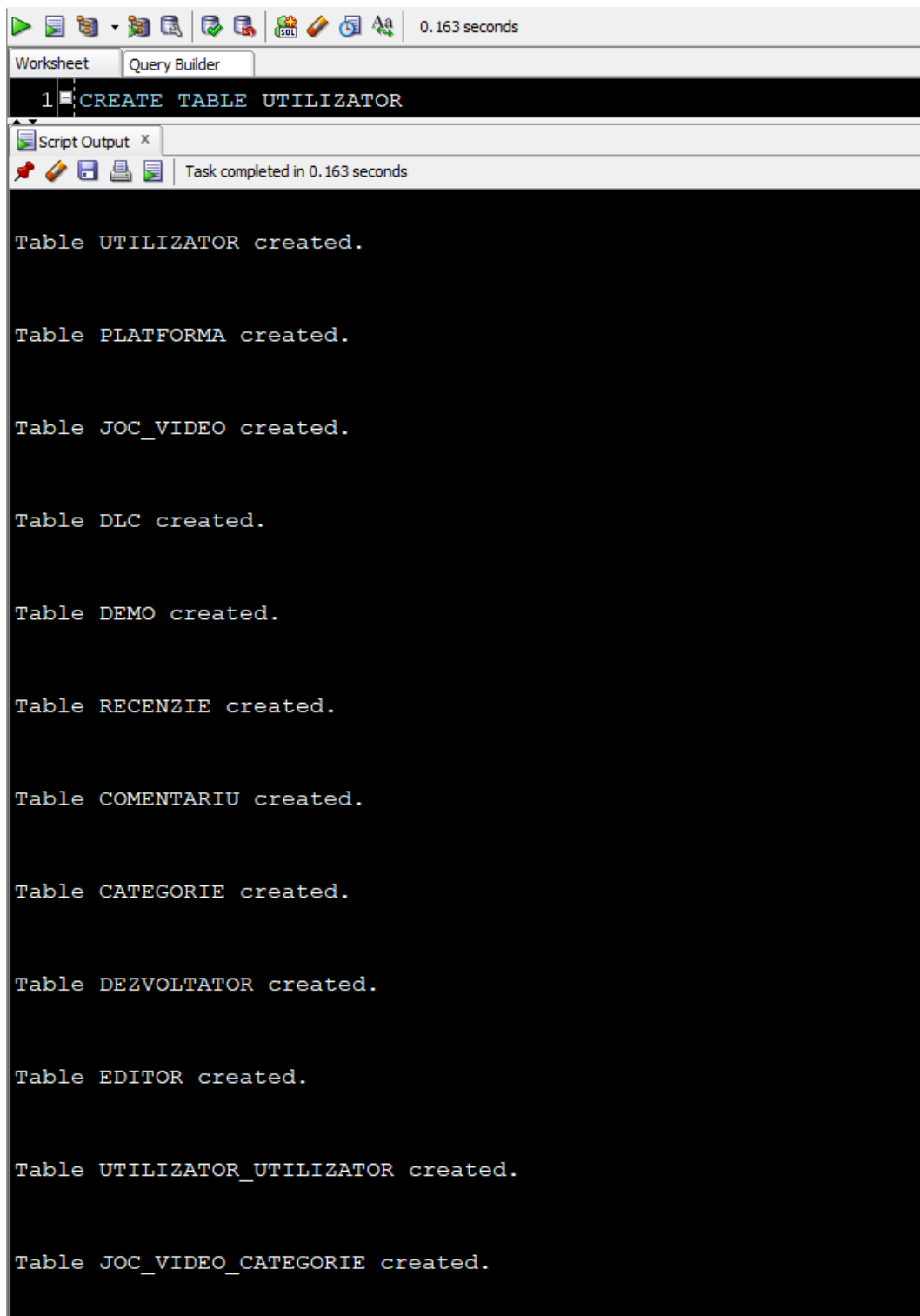
CREATE TABLE UTILIZATOR_UTILIZATOR
(
    cod_utilizator NUMBER(7) constraint fkey_urmarire_utilizator1 REFERENCES
UTILIZATOR(cod_utilizator),
    cod_utilizator_urmarit NUMBER(7) constraint fkey_urmarire_utilizator2 REFERENCES
UTILIZATOR(cod_utilizator),
    constraint urmarire_valid CHECK(cod_utilizator != cod_utilizator_urmarit),
    constraint pkey_urmarire PRIMARY KEY(cod_utilizator, cod_utilizator_urmarit)
);

CREATE TABLE JOC_VIDEO_CATEGORIE
(
    cod_joc NUMBER(7) constraint fkey_continut_joc REFERENCES JOC_VIDEO(cod_joc),
    cod_categorie NUMBER(3) constraint fkey_continut_categorie REFERENCES
CATEGORIE(cod_categorie),
    constraint pkey_continut PRIMARY KEY(cod_joc, cod_categorie)
);

CREATE TABLE UTILIZATOR_JOC_VIDEO_CONT
(
    cod_utilizator NUMBER(7) constraint fkey_detine_utilizator REFERENCES
UTILIZATOR(cod_utilizator),
    cod_joc NUMBER(7) constraint fkey_detine_joc REFERENCES JOC_VIDEO(cod_joc),
    cod_cont NUMBER(3) constraint fkey_detine_cont REFERENCES CONT(cod_cont),
    pret NUMBER(5, 2) constraint pret_joc NOT NULL,
    constraint pkey_detine PRIMARY KEY(cod_utilizator, cod_joc, cod_cont)
);

```

```
CREATE TABLE DEZVOLTATOR_EDITOR_JOC_VIDEO
(
    cod_dezvoltator NUMBER(5) constraint fkey_publica_dezvoltator REFERENCES
DEZVOLTATOR(cod_dezvoltator),
    cod_editor NUMBER(5) constraint fkey_publica_editor REFERENCES EDITOR(cod_editor),
    cod_joc NUMBER(7) constraint fkey_publica_joc REFERENCES JOC_VIDEO(cod_joc),
    constraint pkey_publica PRIMARY KEY(cod_dezvoltator, cod_editor, cod_joc)
);
```



Exercitiul 5

Cerinta: Adaugati informatii coerente in tabelele create (minim 5 inregistrari pentru fiecare entitate independenta; minim 10 inregistrari pentru tabela asociativa).

Rezolvare:

```
-- CREATE SEQUENCE
CREATE SEQUENCE secv_utilizator
INCREMENT BY 1
START WITH 1
MAXVALUE 9999999
NOCYCLE;

CREATE SEQUENCE secv_platforma
INCREMENT BY 1
START WITH 1
MAXVALUE 999
NOCYCLE;

CREATE SEQUENCE secv_cont
INCREMENT BY 1
START WITH 1
MAXVALUE 9999
NOCYCLE;

CREATE SEQUENCE secv_joc_video
INCREMENT BY 1
START WITH 1
MAXVALUE 9999999
NOCYCLE;

CREATE SEQUENCE secv_comentariu
INCREMENT BY 1
START WITH 1
MAXVALUE 9999999
NOCYCLE;

CREATE SEQUENCE secv_categorie
INCREMENT BY 1
START WITH 1
MAXVALUE 999
NOCYCLE;

CREATE SEQUENCE secv_dezvoltator
INCREMENT BY 1
START WITH 1
MAXVALUE 99999
NOCYCLE;

CREATE SEQUENCE secv_editor
```



```

INCREMENT BY 1
START WITH 1
MAXVALUE 99999
NOCYCLE;

-- UTILIZATOR
INSERT INTO UTILIZATOR(cod_utilizator, nume, prenume, parola, email, data_inregistrare)
VALUES (secv_utilizator.NEXTVAL, 'Neculae', 'Andrei', 'parola123', 'andrei.fabian188@gmail.com', '01-JAN-2020');

INSERT INTO UTILIZATOR(cod_utilizator, nume, prenume, parola, email)
VALUES (secv_utilizator.NEXTVAL, 'Buzatu', 'Giulian', '321alorap', 'buzatu.giulian@gmail.com');

INSERT INTO UTILIZATOR(cod_utilizator, nume, prenume, parola, email)
VALUES (secv_utilizator.NEXTVAL, 'Ilie', 'Dumitru', 'parola321', 'ilie.dumitru12@yahoo.com');

INSERT INTO UTILIZATOR(cod_utilizator, nume, prenume, parola, email, data_inregistrare)
VALUES (secv_utilizator.NEXTVAL, 'Popescu', 'Stefan', '123alorap', 'stefan-popescu@s.unibuc.ro', '05-OCT-2021');

INSERT INTO UTILIZATOR(cod_utilizator, nume, prenume, parola, email)
VALUES (secv_utilizator.NEXTVAL, 'Grigore', 'Vlad', '1234567', 'vlad.grigore7@yahoo.com');

-- PLATFORMA
INSERT INTO PLATFORMA
VALUES (secv_platforma.NEXTVAL, 'Steam', '12-SEP-2003', 'https://store.steampowered.com/');

INSERT INTO PLATFORMA
VALUES (secv_platforma.NEXTVAL, 'Epic Games', '04-DEC-2018', 'https://www.epicgames.com/store/en-US/');

INSERT INTO PLATFORMA
VALUES (secv_platforma.NEXTVAL, 'Xbox', '01-AUG-2019', 'https://www.xbox.com/en-US/');

INSERT INTO PLATFORMA
VALUES (secv_platforma.NEXTVAL, 'Battle.net', '31-DEC-1996', 'https://us.shop.battle.net/en-us');

INSERT INTO PLATFORMA
VALUES (secv_platforma.NEXTVAL, 'Origin', '03-JUN-2011', 'https://www.origin.com/');

-- CONT
INSERT INTO CONT
VALUES (secv_cont.NEXTVAL, 1, 'n_andrei13', 'Andrei13');

INSERT INTO CONT
VALUES (secv_cont.NEXTVAL, 2, 'andrei137', 'Andrei13');

INSERT INTO CONT
VALUES (secv_cont.NEXTVAL, 5, 'Andrei_13', 'fabian125');

INSERT INTO CONT
VALUES (secv_cont.NEXTVAL, 1, 'b_giulian', 'buzatu7');

INSERT INTO CONT
VALUES (secv_cont.NEXTVAL, 4, 'BuzGiu', 'Giulian_17');

```

```

INSERT INTO CONT
VALUES (secv_cont.NEXTVAL, 2, 'the_winner', 'sunt_mitica');

INSERT INTO CONT
VALUES (secv_cont.NEXTVAL, 3, 'The_Winner', 'winner62');

INSERT INTO CONT
VALUES (secv_cont.NEXTVAL, 1, 'vlad_grigore', 'gri123');

INSERT INTO CONT
VALUES (secv_cont.NEXTVAL, 3, 'G_Vlad', 'gri123');

INSERT INTO CONT
VALUES (secv_cont.NEXTVAL, 1, 'pop_stef', 'stefan97');

INSERT INTO CONT
VALUES (secv_cont.NEXTVAL, 4, 'Horhe', 'Stefan_2342');

-- JOC_VIDEO
INSERT INTO JOC_VIDEO
VALUES (secv_joc_video.NEXTVAL, 'Life is Strange 2', '27-SEP-2018', '16', 'baza');

INSERT INTO JOC_VIDEO
VALUES (secv_joc_video.NEXTVAL, 'Dead Space Remake', '27-JAN-2023', '11', 'baza');

INSERT INTO JOC_VIDEO
VALUES (secv_joc_video.NEXTVAL, 'Alan Wake', '14-MAY-2010', '11', 'baza');

INSERT INTO JOC_VIDEO
VALUES (secv_joc_video.NEXTVAL, 'Alan Wake The Signal', '12-OCT-2010', '1.5', 'dlc');

INSERT INTO JOC_VIDEO
VALUES (secv_joc_video.NEXTVAL, 'Alan Wake The Writer', '12-NOV-2010', '1.5', 'dlc');

INSERT INTO JOC_VIDEO
VALUES (secv_joc_video.NEXTVAL, 'Assassin"s Creed Syndicate', '23-OCT-2015', '18.5', 'baza');

INSERT INTO JOC_VIDEO
VALUES (secv_joc_video.NEXTVAL, 'Assassin"s Creed Syndicate Jack the Ripper', '15-DEC-2015', '3', 'dlc');

INSERT INTO JOC_VIDEO
VALUES (secv_joc_video.NEXTVAL, 'Assassin"s Creed Syndicate The Last Maharaja', '01-MAR-2016', '2.5', 'dlc');

INSERT INTO JOC_VIDEO
VALUES (secv_joc_video.NEXTVAL, 'Assassin"s Creed Syndicate The Dreadful Crimes', '11-APR-2016', '3.5', 'dlc');

INSERT INTO JOC_VIDEO
VALUES (secv_joc_video.NEXTVAL, 'Tell Me Why', '17-AUG-2020', '9.5', 'baza');

INSERT INTO JOC_VIDEO
VALUES (secv_joc_video.NEXTVAL, 'World of Warcraft', '23-NOV-2004', '250', 'baza');

```

```

INSERT INTO JOC_VIDEO
VALUES (secv_joc_video.NEXTVAL, 'Need For Speed Unbound', '29-NOV-2022', '23.5', 'baza');

INSERT INTO JOC_VIDEO
VALUES (secv_joc_video.NEXTVAL, 'Pronty', '19-NOV-2021', '7.5', 'baza');

-- DLC
INSERT INTO DLC
VALUES (4, 3);

INSERT INTO DLC
VALUES (5, 3);

INSERT INTO DLC
VALUES (7, 6);

INSERT INTO DLC
VALUES (8, 6);

INSERT INTO DLC
VALUES (9, 6);

-- RECENZIE
INSERT INTO RECENZIE(cod_utilizator, cod_joc, continut, scor)
VALUES (1, 2, 'Bun jocul, dar nu e pentru mine.', 3);

INSERT INTO RECENZIE(cod_utilizator, cod_joc, continut, scor, data_postare)
VALUES (4, 3, 'Mi-a placut foarte mult, recomand!', 5, '09-JAN-2023');

INSERT INTO RECENZIE(cod_utilizator, cod_joc, continut, scor)
VALUES (3, 6, 'Acest joc este o dezamagire, nu va pierdeti timpul si banii pe el', 1);

INSERT INTO RECENZIE(cod_utilizator, cod_joc, continut, scor)
VALUES (2, 10, 'Am pierdut prea mult timp in acest joc, mi-am facut foarte multi nervi, 10/10 recomand', 5);

INSERT INTO RECENZIE(cod_utilizator, cod_joc, continut, scor, data_postare)
VALUES (3, 13, 'Jocul este foarte bun, dar este doar pentru persoanele mai rafinate', 4, '01-JUN-2023');

INSERT INTO RECENZIE(cod_utilizator, cod_joc, continut, scor, data_postare)
VALUES (1, 13, 'Un joc excelent, abia astept sa se lanseze un dlc', 5, '17-AUG-2020');

-- COMENTARIU
INSERT INTO COMENTARIU(cod_comentariu, cod_utilizator_recenzie, cod_joc, cod_utilizator, continut)
VALUES (secv_comentariu.NEXTVAL, 1, 2, 2, 'Si mie mi s-a parut bun jocul, 100% il recomand mai departe');

INSERT INTO COMENTARIU(cod_comentariu, cod_utilizator_recenzie, cod_joc, cod_utilizator, continut)
VALUES (secv_comentariu.NEXTVAL, 1, 2, 3, 'Nu inteleg de ce nu ti-a placut, mie mi s-a parut un joc foarte bun');

INSERT INTO COMENTARIU(cod_comentariu, cod_utilizator_recenzie, cod_joc, cod_utilizator, continut)

```

```

VALUES (secv_comentariu.NEXTVAL, 4, 3, 3, 'Personal nu am gasit ceva care sa ma atraga la acest joc, mi s-a parut
prea plictisitor');

INSERT INTO COMENTARIU(cod_comentariu, cod_utilizator_recenzie, cod_joc, cod_utilizator, continut)
VALUES (secv_comentariu.NEXTVAL, 3, 6, 1, 'Mie nu mi s-a parut o dezamagire, ba din contra, il consider un joc foarte
bun, desi inteleg de ce ar putea dezamagi unele persoane');

INSERT INTO COMENTARIU(cod_comentariu, cod_utilizator_recenzie, cod_joc, cod_utilizator, continut)
VALUES (secv_comentariu.NEXTVAL, 2, 10, 5, 'Si eu am pierdut foarte mult timp in acest joc, nu am simtit efectiv cum
trec orele! Foarte buna treaba din partea developerilor!');

INSERT INTO COMENTARIU(cod_comentariu, cod_utilizator_recenzie, cod_joc, cod_utilizator, continut)
VALUES (secv_comentariu.NEXTVAL, 3, 13, 2, 'Nu ma consider o persoana "rafinata" si totusi nu mi s-a parut ca jocul
ar fi prea slab, dar clar nu este de nota 10');

-- CATEGORIE
INSERT INTO CATEGORIE
VALUES (secv_categorie.NEXTVAL, 'Actiune');

INSERT INTO CATEGORIE
VALUES (secv_categorie.NEXTVAL, 'Aventura');

INSERT INTO CATEGORIE
VALUES (secv_categorie.NEXTVAL, 'Science-fiction');

INSERT INTO CATEGORIE
VALUES (secv_categorie.NEXTVAL, 'Horror');

INSERT INTO CATEGORIE
VALUES (secv_categorie.NEXTVAL, 'Thriller');

INSERT INTO CATEGORIE
VALUES (secv_categorie.NEXTVAL, 'Drama');

INSERT INTO CATEGORIE
VALUES (secv_categorie.NEXTVAL, 'MMORPG');

INSERT INTO CATEGORIE
VALUES (secv_categorie.NEXTVAL, 'Curse');

INSERT INTO CATEGORIE
VALUES (secv_categorie.NEXTVAL, 'Metroidvania');

-- DEZVOLTATOR
INSERT INTO DEZVOLTATOR
VALUES (secv_dezvoltator.NEXTVAL, 'DONTNOD Entertainment', 'https://dont-nod.com/en/', '01-MAY-2008');

INSERT INTO DEZVOLTATOR
VALUES (secv_dezvoltator.NEXTVAL, 'Motive', 'https://www.ea.com/ea-studios/motive', '13-JULY-2015');

INSERT INTO DEZVOLTATOR

```

```

VALUES (secv_dezvoltator.NEXTVAL, 'Remedy Entertainment', 'https://www.remedygames.com/', '18-AUG-1995');

INSERT INTO DEZVOLTATOR
VALUES (secv_dezvoltator.NEXTVAL, 'Ubisoft Quebec', 'https://quebec.ubisoft.com/en/', '27-JUN-2005');

INSERT INTO DEZVOLTATOR
VALUES (secv_dezvoltator.NEXTVAL, 'Blizzard Entertainment', 'https://www.blizzard.com/en-us/', '08-FEB-1991');

INSERT INTO DEZVOLTATOR
VALUES (secv_dezvoltator.NEXTVAL, 'Criterion Games', 'https://www.ea.com/ea-studios/criterion-games', '01-JAN-1996');

INSERT INTO DEZVOLTATOR(cod_dezvoltator, nume, site)
VALUES (secv_dezvoltator.NEXTVAL, '18Light Game', 'https://18light.cc/en/');

INSERT INTO DEZVOLTATOR(cod_dezvoltator, nume)
VALUES (secv_dezvoltator.NEXTVAL, 'FunZone Games');

-- EDITOR
INSERT INTO EDITOR
VALUES (secv_editor.NEXTVAL, 'Square Enix', 'https://square-enix-games.com/en_US/home', '01-APR-2003');

INSERT INTO EDITOR
VALUES (secv_editor.NEXTVAL, 'Electronic Arts', 'https://www.ea.com/', '27-MAY-1982');

INSERT INTO EDITOR
VALUES (secv_editor.NEXTVAL, 'Remedy Entertainment', 'https://www.remedygames.com/', '18-AUG-1995');

INSERT INTO EDITOR
VALUES (secv_editor.NEXTVAL, 'Ubisoft', 'https://www.ubisoft.com/en-us/', '28-MAR-1986');

INSERT INTO EDITOR
VALUES (secv_editor.NEXTVAL, 'Xbox Game Studios', 'https://www.xbox.com/en-US/xbox-game-studios', '21-MAR-2000');

INSERT INTO EDITOR
VALUES (secv_editor.NEXTVAL, 'Blizzard Entertainment', 'https://www.blizzard.com/en-us/', '08-FEB-1991');

INSERT INTO EDITOR(cod_editor, nume, site)
VALUES (secv_editor.NEXTVAL, '18Light Game', 'https://18light.cc/en/');

-- UTILIZATOR_UTILIZATOR
INSERT INTO UTILIZATOR_UTILIZATOR
VALUES (1, 2);

INSERT INTO UTILIZATOR_UTILIZATOR
VALUES (1, 3);

INSERT INTO UTILIZATOR_UTILIZATOR
VALUES (1, 5);

```

```
INSERT INTO UTILIZATOR_UTILIZATOR  
VALUES (2, 1);
```

```
INSERT INTO UTILIZATOR_UTILIZATOR  
VALUES (2, 3);
```

```
INSERT INTO UTILIZATOR_UTILIZATOR  
VALUES (2, 4);
```

```
INSERT INTO UTILIZATOR_UTILIZATOR  
VALUES (3, 1);
```

```
INSERT INTO UTILIZATOR_UTILIZATOR  
VALUES (3, 2);
```

```
INSERT INTO UTILIZATOR_UTILIZATOR  
VALUES (3, 5);
```

```
INSERT INTO UTILIZATOR_UTILIZATOR  
VALUES (4, 2);
```

```
INSERT INTO UTILIZATOR_UTILIZATOR  
VALUES (5, 1);
```

```
INSERT INTO UTILIZATOR_UTILIZATOR  
VALUES (5, 4);
```

```
-- JOC_VIDEO_CATEGORIE
```

```
-- Aduagam categoriile manual la jocurile de baza
```

```
INSERT INTO JOC_VIDEO_CATEGORIE  
VALUES (1, 2);
```

```
INSERT INTO JOC_VIDEO_CATEGORIE  
VALUES (1, 6);
```

```
INSERT INTO JOC_VIDEO_CATEGORIE  
VALUES (2, 1);
```

```
INSERT INTO JOC_VIDEO_CATEGORIE  
VALUES (2, 2);
```

```
INSERT INTO JOC_VIDEO_CATEGORIE  
VALUES (2, 3);
```

```
INSERT INTO JOC_VIDEO_CATEGORIE  
VALUES (2, 4);
```

```
INSERT INTO JOC_VIDEO_CATEGORIE  
VALUES (3, 1);
```

```
INSERT INTO JOC_VIDEO_CATEGORIE  
VALUES (3, 2);
```

```
INSERT INTO JOC_VIDEO_CATEGORIE  
VALUES (3, 5);
```

```
INSERT INTO JOC_VIDEO_CATEGORIE  
VALUES (3, 6);
```

```
INSERT INTO JOC_VIDEO_CATEGORIE  
VALUES (6, 1);
```

```
INSERT INTO JOC_VIDEO_CATEGORIE  
VALUES (6, 2);
```

```
INSERT INTO JOC_VIDEO_CATEGORIE  
VALUES (10, 2);
```

```
INSERT INTO JOC_VIDEO_CATEGORIE  
VALUES (10, 6);
```

```
INSERT INTO JOC_VIDEO_CATEGORIE  
VALUES (11, 7);
```

```
INSERT INTO JOC_VIDEO_CATEGORIE  
VALUES (12, 8);
```

```
INSERT INTO JOC_VIDEO_CATEGORIE  
VALUES (13, 9);
```

```
-- Adaugam aceleasi categorii de la jocul de baza la dlc folosind o cerere
```

```
INSERT INTO JOC_VIDEO_CATEGORIE  
(  
    SELECT d.cod_joc, jvc.cod_categorie  
    FROM JOC_VIDEO jv  
    JOIN DLC d ON (d.cod_joc_baza = jv.cod_joc)  
    JOIN JOC_VIDEO_CATEGORIE jvc ON (d.cod_joc_baza = jvc.cod_joc)  
);
```

```
-- UTILIZATOR_JOC_VIDEO_CONT
```

```
INSERT INTO UTILIZATOR_JOC_VIDEO_CONT  
VALUES (2, 1, 4, '29.99');
```

```
INSERT INTO UTILIZATOR_JOC_VIDEO_CONT  
VALUES (5, 2, 8, '19.99');
```

```
INSERT INTO UTILIZATOR_JOC_VIDEO_CONT  
VALUES (4, 3, 10, '59.99');
```

```
INSERT INTO UTILIZATOR_JOC_VIDEO_CONT  
VALUES (4, 4, 11, '0');
```

```
INSERT INTO UTILIZATOR_JOC_VIDEO_CONT  
VALUES (1, 6, 2, '24.99');
```

```
INSERT INTO UTILIZATOR_JOC_VIDEO_CONT  
VALUES (1, 7, 2, '5.99');
```

```
INSERT INTO UTILIZATOR_JOC_VIDEO_CONT  
VALUES (1, 8, 2, '5.99');
```

```
INSERT INTO UTILIZATOR_JOC_VIDEO_CONT  
VALUES (1, 9, 2, '5.99');
```

```
INSERT INTO UTILIZATOR_JOC_VIDEO_CONT  
VALUES (3, 6, 7, '19.99');
```

```
INSERT INTO UTILIZATOR_JOC_VIDEO_CONT  
VALUES (1, 10, 2, '114.99');
```

```
INSERT INTO UTILIZATOR_JOC_VIDEO_CONT  
VALUES (1, 12, 1, '39.99');
```

```
INSERT INTO UTILIZATOR_JOC_VIDEO_CONT  
VALUES (1, 13, 1, '9.99');
```

```
INSERT INTO UTILIZATOR_JOC_VIDEO_CONT  
VALUES (3, 13, 7, '14.99');
```

```
INSERT INTO UTILIZATOR_JOC_VIDEO_CONT  
VALUES (5, 10, 9, '0');
```

```
INSERT INTO UTILIZATOR_JOC_VIDEO_CONT  
VALUES (2, 10, 5, '129.99');
```

```
INSERT INTO UTILIZATOR_JOC_VIDEO_CONT  
VALUES (4, 11, 11, '0');
```

```
INSERT INTO UTILIZATOR_JOC_VIDEO_CONT  
VALUES (1, 2, 3, '24.99');
```

```
-- DEZVOLTATOR_EDITOR_JOC_VIDEO
```

```
-- Aduagam dezvoltatori si editori manual la jocurile de baza
```

```
INSERT INTO DEZVOLTATOR_EDITOR_JOC_VIDEO  
VALUES (1, 1, 1);
```

```
INSERT INTO DEZVOLTATOR_EDITOR_JOC_VIDEO  
VALUES (2, 2, 2);
```

```
INSERT INTO DEZVOLTATOR_EDITOR_JOC_VIDEO  
VALUES (3, 3, 3);
```

```
INSERT INTO DEZVOLTATOR_EDITOR_JOC_VIDEO  
VALUES (4, 4, 6);
```

```
INSERT INTO DEZVOLTATOR_EDITOR_JOC_VIDEO
```



```
VALUES (1, 5, 10);
```

```
INSERT INTO DEZVOLTATOR_EDITOR_JOC_VIDEO  
VALUES (5, 6, 11);
```

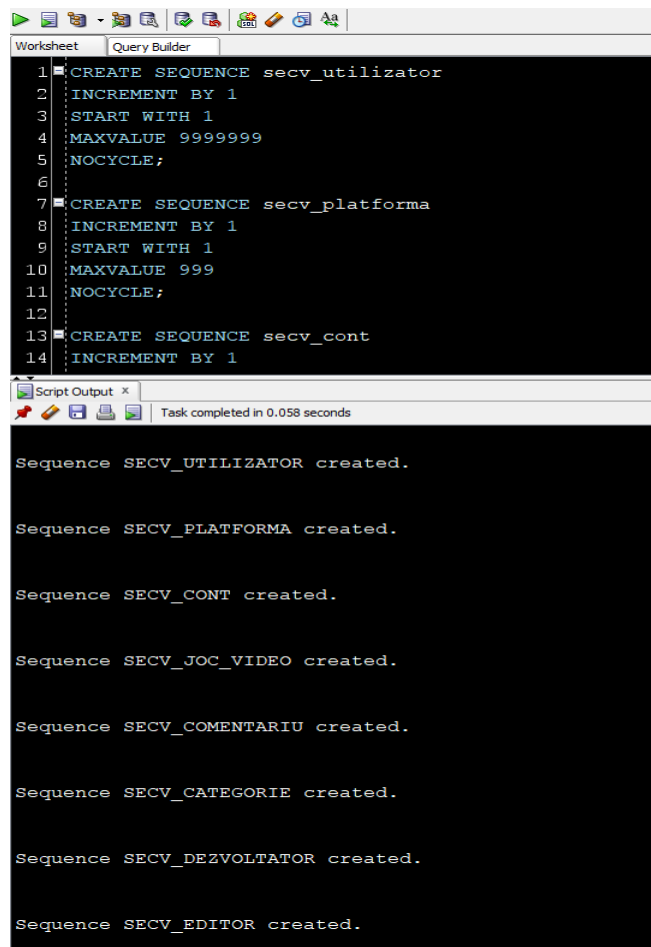
```
INSERT INTO DEZVOLTATOR_EDITOR_JOC_VIDEO  
VALUES (6, 2, 12);
```

```
INSERT INTO DEZVOLTATOR_EDITOR_JOC_VIDEO  
VALUES (7, 7, 13);
```

```
INSERT INTO DEZVOLTATOR_EDITOR_JOC_VIDEO  
VALUES (8, 7, 13);
```

-- Adaugam aceiasi dezvoltatori si aceiasi editori de la jocul de baza la dlc folosind o cerere

```
INSERT INTO DEZVOLTATOR_EDITOR_JOC_VIDEO  
(  
    SELECT dejv.cod_dezvoltator, dejv.cod_editor, d.cod_joc  
    FROM JOC_VIDEO jv  
    JOIN DLC d ON (d.cod_joc_baza = jv.cod_joc)  
    JOIN DEZVOLTATOR_EDITOR_JOC_VIDEO dejv ON (d.cod_joc_baza = dejv.cod_joc)  
);
```



The screenshot shows a SQL script execution window with two tabs: 'Worksheet' and 'Query Builder'. The 'Worksheet' tab is active, displaying a script with 14 lines of SQL code. The script creates three sequences: 'secv_utilizator', 'secv_platforma', and 'secv_cont'. The 'Script Output' window below shows the results of the execution, indicating that each sequence was successfully created.

```
1 CREATE SEQUENCE secv_utilizator  
2 INCREMENT BY 1  
3 START WITH 1  
4 MAXVALUE 9999999  
5 NOCYCLE;  
6  
7 CREATE SEQUENCE secv_platforma  
8 INCREMENT BY 1  
9 START WITH 1  
10 MAXVALUE 999  
11 NOCYCLE;  
12  
13 CREATE SEQUENCE secv_cont  
14 INCREMENT BY 1
```

Script Output x
Task completed in 0.058 seconds

```
Sequence SECV_UTILIZATOR created.  
  
Sequence SECV_PLATFORMA created.  
  
Sequence SECV_CONT created.  
  
Sequence SECV_JOC_VIDEO created.  
  
Sequence SECV_COMENTARIU created.  
  
Sequence SECV_CATEGORIE created.  
  
Sequence SECV_DEZVOLTATOR created.  
  
Sequence SECV_EDITOR created.
```

</

Worksheet Query Builder

1 `SELECT * FROM CONT;`

Query Result x
All Rows Fetched: 11 in 0.004 seconds

	COD_CONT	COD_PLATFORMA	NUME	PAROLA
1	1	1	n_andrei13	Andrei13
2	2	2	andrei137	Andrei13
3	3	5	Andrei_13	fabian125
4	4	1	b_giulian	buzatu7
5	5	4	BuzGiu	Giulian_17
6	6	2	the_winner	sunt_mitica
7	7	3	The_Winner	winner62
8	8	1	vlad_grigore	gri123
9	9	3	G_Vlad	gri123
10	10	1	pop_stef	stefan97
11	11	4	Horhe	Stefan_2342

Worksheet				
1 <code>SELECT * FROM COMENTARIU;</code>				
Query Result x				
All Rows Fetched: 6 in 0.001 seconds				
COD_COMENTARIU	COD_UTILIZATOR_RECENZIE	COD_JOC	COD_UTILIZATOR	CONTINUT
1	7	1	2	2 Si mie mi s-a parut bun jocul, 100% il recomand mai departe
2	8	1	2	3 Nu inteleg de ce nu ti-a placut, mie mi s-a parut un joc foarte bun
3	9	4	3	3 Personal nu am gasit ceva care sa ma atraga la acest joc, mi s-a parut prea plictisitor
4	10	3	6	1 Mie nu mi s-a parut o dezamagire, ba din contra, il consider un joc foarte bun, desi inteleg de ce ar p
5	11	2	10	5 Si eu am pierdut foarte mult timp in acest joc, nu am simtit efectiv cum trec orele! Foarte buna treaba
6	12	3	13	2 Nu ma consider o persoana 'rafinata' si totusi nu mi s-a parut ca jocul ar fi prea slab, dar clar nu es

Worksheet				
1 <code>SELECT * FROM CATEGORIE;</code>				
Query Result x				
All Rows Fetched: 9 in 0.004 seconds				
COD_CATEGORIE	NUME			
1	1 Actiune			
2	2 Aventura			
3	3 Science-fiction			
4	4 Horror			
5	5 Thriller			
6	6 Drama			
7	7 MMORPG			
8	8 Curse			
9	9 Metroidvania			

Worksheet				
1 <code>SELECT * FROM DEZVOLTATOR;</code>				
Query Result x				
All Rows Fetched: 8 in 0.007 seconds				
COD_DEZVOLTATOR	NUME	SITE	DATA_INFIINTARE	
1	1 DONTNOD Entertainment	https://dont-nod.com/en/	01-MAY-08	
2	2 Motive	https://www.ea.com/ea-studios/motive	13-JUL-15	
3	3 Remy Entertainment	https://www.remedygames.com/	18-AUG-95	
4	4 Ubisoft Quebec	https://quebec.ubisoft.com/en/	27-JUN-05	
5	5 Blizzard Entertainment	https://www.blizzard.com/en-us/	08-FEB-91	
6	6 Criterion Games	https://www.ea.com/ea-studios/criterion-games	01-JAN-96	
7	7 18Light Game	https://18light.cc/en/	(null)	
8	8 FunZone Games	(null)	(null)	

Worksheet

Query Builder

1

SELECT * FROM UTILIZATOR_UTILIZATOR;

Query Result x

All Rows Fetched: 12 in 0.004 seconds

	↕ COD_UTILIZATOR	↕ COD_UTILIZATOR_URMARIT
1	1	2
2	1	3
3	1	5
4	2	1
5	2	3
6	2	4
7	3	1
8	3	2
9	3	5
10	4	2
11	5	1
12	5	4

Worksheet

Query Builder

1

SELECT * FROM UTILIZATOR_JOC_VIDEO_CONT;

Query Result x

All Rows Fetched: 17 in 0.004 seconds

	COD_UTILIZATOR	COD_JOC	COD_CONT	PRET
1	2	1	4	29.99
2	5	2	8	19.99
3	4	3	10	59.99
4	4	4	11	0
5	1	6	2	24.99
6	1	7	2	5.99
7	1	8	2	5.99
8	1	9	2	5.99
9	3	6	7	19.99
10	1	10	2	114.99
11	1	12	1	39.99
12	1	13	1	9.99
13	3	13	7	14.99
14	5	10	9	0
15	2	10	5	129.99
16	4	11	11	0
17	1	2	3	24.99

Worksheet

Query Builder

1

SELECT * FROM DEZVOLTATOR_EDITOR_JOC_VIDEO;

Query Result x

All Rows Fetched: 14 in 0.005 seconds

	COD_DEZVOLTATOR	COD_EDITOR	COD_JOC
1	1	1	1
2	1	5	10
3	2	2	2
4	3	3	3
5	3	3	4
6	3	3	5
7	4	4	6
8	4	4	7
9	4	4	8
10	4	4	9
11	5	6	11
12	6	2	12
13	7	7	13
14	8	7	13

Exercitiul 6

Cerinta: Formulati in limbaj natural o problema pe care sa o rezolvati folosind un subprogram stocat independent care sa utilizeze toate cele 3 tipuri de colectii studiate. Apelati subprogramul.

Rezolvare: Definiti un subprogram stocat independent care primeste un nume de utilizator ca parametru si afiseaza numele conturilor de Steam, Epic Games si Xbox ale acestuia, toate jocurile pe care le detine si toate recenziile lasate de acesta, folosind cate un tip de date diferit pentru fiecare. In cazul in care nu exista utilizator cu numele respectiv, se va afisa un mesaj de eroare. In cazul in care exista mai multi utilizatori cu acelasi nume, se vor afisa informatiile pentru fiecare.

```
CREATE OR REPLACE PROCEDURE info
(
  v_nume utilizator.nume%TYPE DEFAULT 'Neculae'
)
IS
  TYPE pair IS RECORD
  (
    platform platforma.nume%TYPE,
    username cont.nume%TYPE
  );
  TYPE vector IS VARRAY(3) OF pair;
  TYPE tablou_indexat IS TABLE OF joc_video.nume%TYPE INDEX BY PLS_INTEGER;
  TYPE tablou_imbricat IS TABLE OF recenzie.continut%TYPE;

  v_accounts vector := vector();
  v_games tablou_indexat;
  v_reviews tablou_imbricat := tablou_imbricat();
  v_nr_utilizator NUMBER;
BEGIN
  SELECT COUNT(*)
  INTO v_nr_utilizator
  FROM utilizator
  WHERE INITCAP(utilizator.nume) = INITCAP(v_nume);

  IF v_nr_utilizator = 0 THEN
    DBMS_OUTPUT.PUT_LINE('Nu exista utilizator cu numele ' || v_nume);
    RETURN;
  END IF;

  IF v_nr_utilizator > 1 THEN
    DBMS_OUTPUT.PUT_LINE('Exista mai multi utilizatori cu numele ' || v_nume);
    RETURN;
  END IF;

  SELECT DISTINCT p.nume, c.nume
  BULK COLLECT INTO v_accounts
  FROM cont c
  JOIN utilizator_joc_video_cont ujvc ON c.cod_cont = ujvc.cod_cont
```



```

JOIN platforma p ON c.cod_platforma = p.cod_platforma
JOIN utilizator u ON u.jvc.cod_utilizator = u.cod_utilizator
WHERE INITCAP(u.ume) = INITCAP(v_ume) AND INITCAP(p.ume) IN ('Steam', 'Epic Games', 'Xbox');

DBMS_OUTPUT.PUT_LINE('-----');
IF v_accounts.COUNT = 0 THEN
    DBMS_OUTPUT.PUT_LINE('Nu exista conturi asociate utilizatorului ' || v_ume);
    DBMS_OUTPUT.PUT_LINE('-----');
ELSE
    DBMS_OUTPUT.PUT_LINE('Conturi asociate utilizatorului ' || v_ume);
    DBMS_OUTPUT.PUT_LINE('-----');
    FOR i IN 1..v_accounts.COUNT LOOP
        DBMS_OUTPUT.PUT_LINE(v_accounts(i).platform || ':' || v_accounts(i).username);
    END LOOP;
END IF;

SELECT jv.ume
BULK COLLECT INTO v_games
FROM joc_video jv
JOIN utilizator_joc_video_cont ujc ON jv.cod_joc = ujc.cod_joc
JOIN utilizator u ON u.jvc.cod_utilizator = u.cod_utilizator
WHERE INITCAP(u.ume) = INITCAP(v_ume);

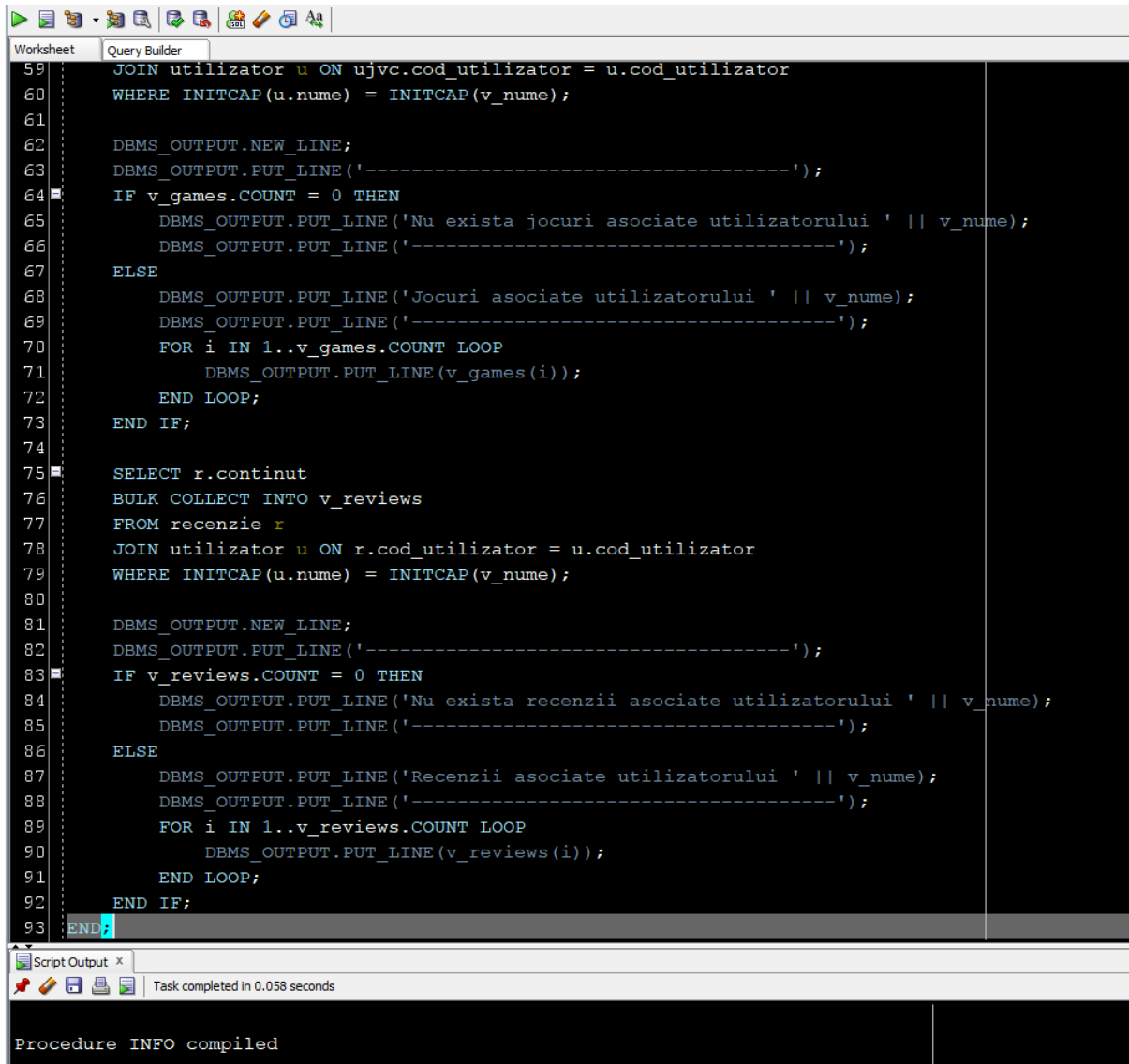
DBMS_OUTPUT.NEW_LINE;
DBMS_OUTPUT.PUT_LINE('-----');
IF v_games.COUNT = 0 THEN
    DBMS_OUTPUT.PUT_LINE('Nu exista jocuri asociate utilizatorului ' || v_ume);
    DBMS_OUTPUT.PUT_LINE('-----');
ELSE
    DBMS_OUTPUT.PUT_LINE('Jocuri asociate utilizatorului ' || v_ume);
    DBMS_OUTPUT.PUT_LINE('-----');
    FOR i IN 1..v_games.COUNT LOOP
        DBMS_OUTPUT.PUT_LINE(v_games(i));
    END LOOP;
END IF;

SELECT r.continut
BULK COLLECT INTO v_reviews
FROM recenzie r
JOIN utilizator u ON r.cod_utilizator = u.cod_utilizator
WHERE INITCAP(u.ume) = INITCAP(v_ume);

DBMS_OUTPUT.NEW_LINE;
DBMS_OUTPUT.PUT_LINE('-----');
IF v_reviews.COUNT = 0 THEN
    DBMS_OUTPUT.PUT_LINE('Nu exista recenzii asociate utilizatorului ' || v_ume);
    DBMS_OUTPUT.PUT_LINE('-----');
ELSE
    DBMS_OUTPUT.PUT_LINE('Recenzii asociate utilizatorului ' || v_ume);
    DBMS_OUTPUT.PUT_LINE('-----');
    FOR i IN 1..v_reviews.COUNT LOOP
        DBMS_OUTPUT.PUT_LINE(v_reviews(i));
    END LOOP;

```

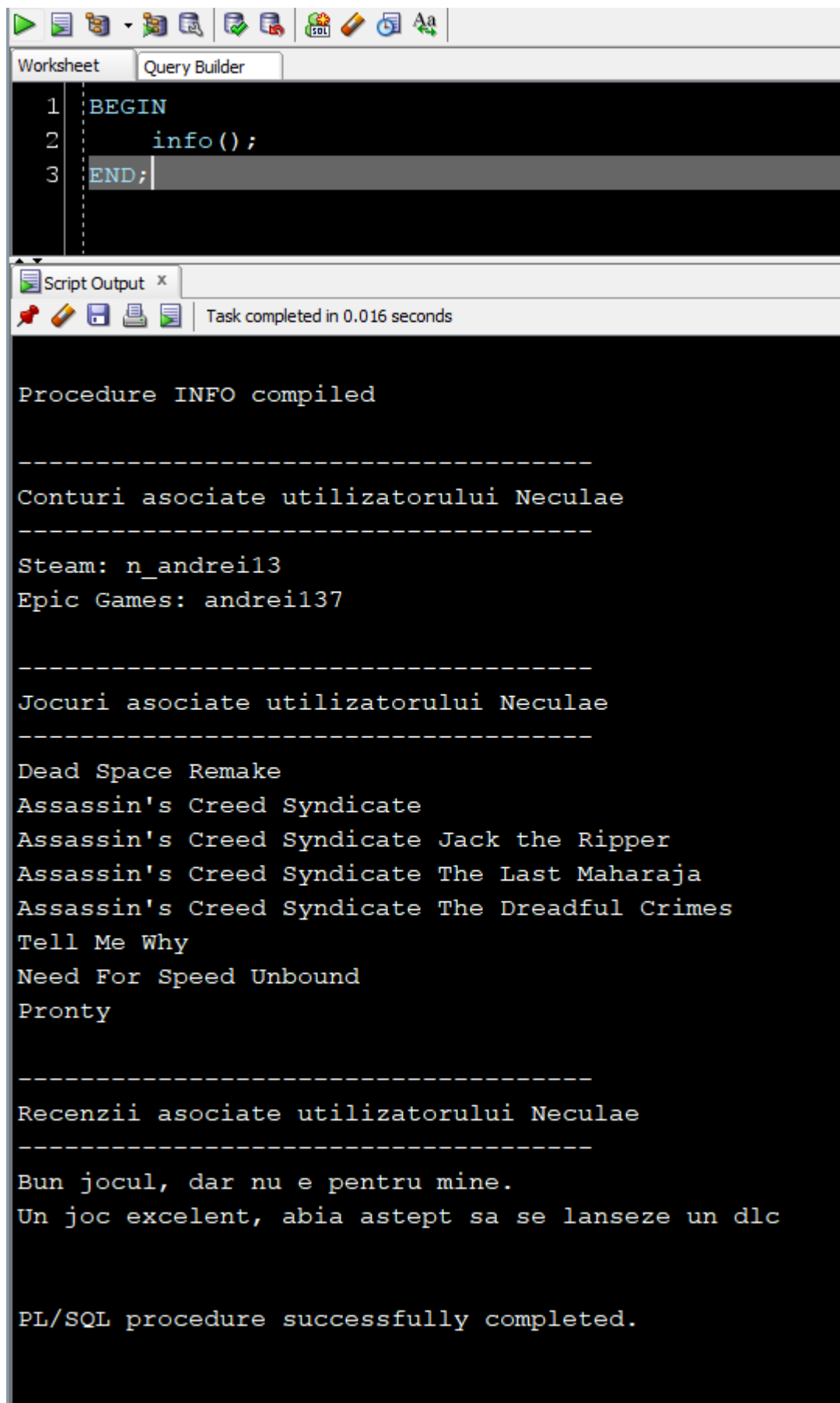
```
END IF;  
END;
```



```
59 JOIN utilizator u ON u.jvc.cod_utilizator = u.cod_utilizator  
60 WHERE INITCAP(u.nume) = INITCAP(v_nume);  
61  
62 DBMS_OUTPUT.NEW_LINE;  
63 DBMS_OUTPUT.PUT_LINE('-----');  
64 IF v_games.COUNT = 0 THEN  
65     DBMS_OUTPUT.PUT_LINE('Nu exista jocuri asociate utilizatorului ' || v_nume);  
66     DBMS_OUTPUT.PUT_LINE('-----');  
67 ELSE  
68     DBMS_OUTPUT.PUT_LINE('Jocuri asociate utilizatorului ' || v_nume);  
69     DBMS_OUTPUT.PUT_LINE('-----');  
70     FOR i IN 1..v_games.COUNT LOOP  
71         DBMS_OUTPUT.PUT_LINE(v_games(i));  
72     END LOOP;  
73 END IF;  
74  
75 SELECT r.continut  
76 BULK COLLECT INTO v_reviews  
77 FROM recenzie r  
78 JOIN utilizator u ON r.cod_utilizator = u.cod_utilizator  
79 WHERE INITCAP(u.nume) = INITCAP(v_nume);  
80  
81 DBMS_OUTPUT.NEW_LINE;  
82 DBMS_OUTPUT.PUT_LINE('-----');  
83 IF v_reviews.COUNT = 0 THEN  
84     DBMS_OUTPUT.PUT_LINE('Nu exista recenzii asociate utilizatorului ' || v_nume);  
85     DBMS_OUTPUT.PUT_LINE('-----');  
86 ELSE  
87     DBMS_OUTPUT.PUT_LINE('Recenzii asociate utilizatorului ' || v_nume);  
88     DBMS_OUTPUT.PUT_LINE('-----');  
89     FOR i IN 1..v_reviews.COUNT LOOP  
90         DBMS_OUTPUT.PUT_LINE(v_reviews(i));  
91     END LOOP;  
92 END IF;  
93 END;
```

Script Output x
Task completed in 0.058 seconds

Procedure INFO compiled



The screenshot shows a SQL query editor window with a toolbar at the top. Below the toolbar are two tabs: 'Worksheet' and 'Query Builder'. The 'Query Builder' tab is active, displaying a SQL script with line numbers 1, 2, and 3. The script is:
1 BEGIN
2 info();
3 END;
Below the query editor is a 'Script Output' window. It has a toolbar with icons for running, saving, and printing. The output text is as follows:

```
Task completed in 0.016 seconds

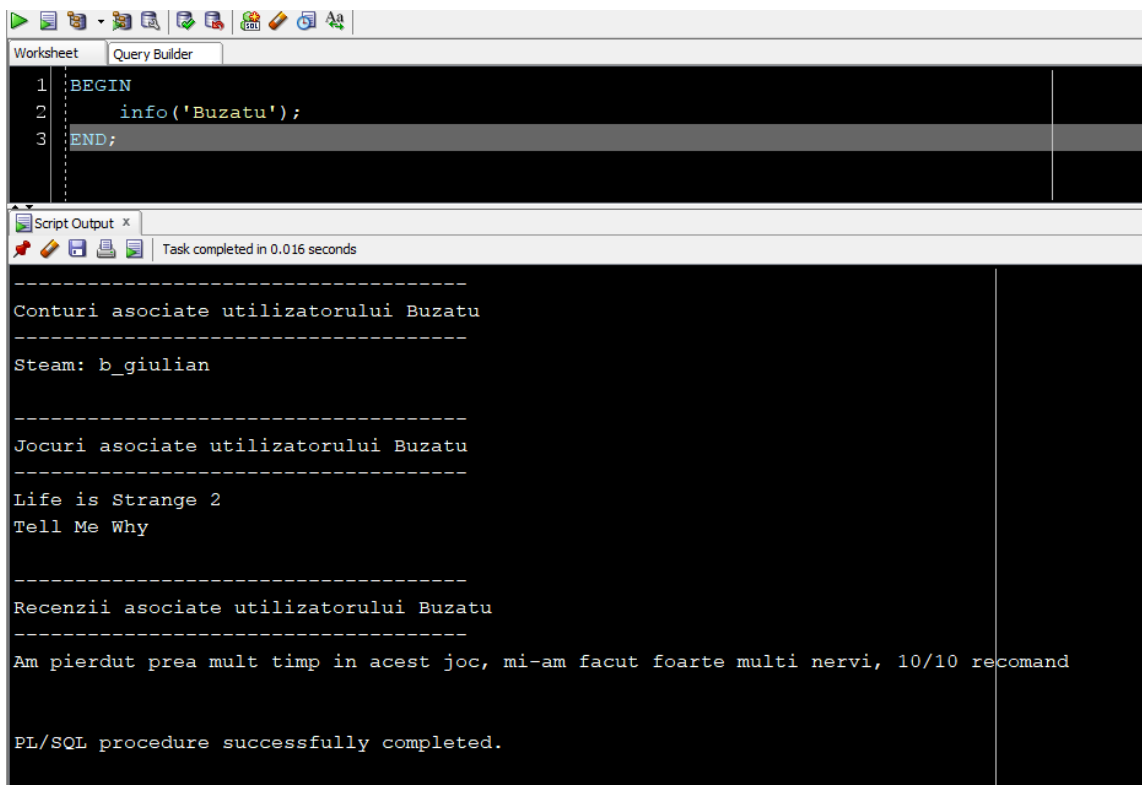
Procedure INFO compiled

-----
Conturi asociate utilizatorului Neculae
-----
Steam: n_andrei13
Epic Games: andrei137

-----
Jocuri asociate utilizatorului Neculae
-----
Dead Space Remake
Assassin's Creed Syndicate
Assassin's Creed Syndicate Jack the Ripper
Assassin's Creed Syndicate The Last Maharaja
Assassin's Creed Syndicate The Dreadful Crimes
Tell Me Why
Need For Speed Unbound
Pronty

-----
Recenzii asociate utilizatorului Neculae
-----
Bun jocul, dar nu e pentru mine.
Un joc excelent, abia astept sa se lanseze un dlc

PL/SQL procedure successfully completed.
```



The screenshot shows the SQL Developer interface with a 'Worksheet' tab. The SQL script in the editor is as follows:

```
1 BEGIN
2   info('Buzatu');
3 END;
```

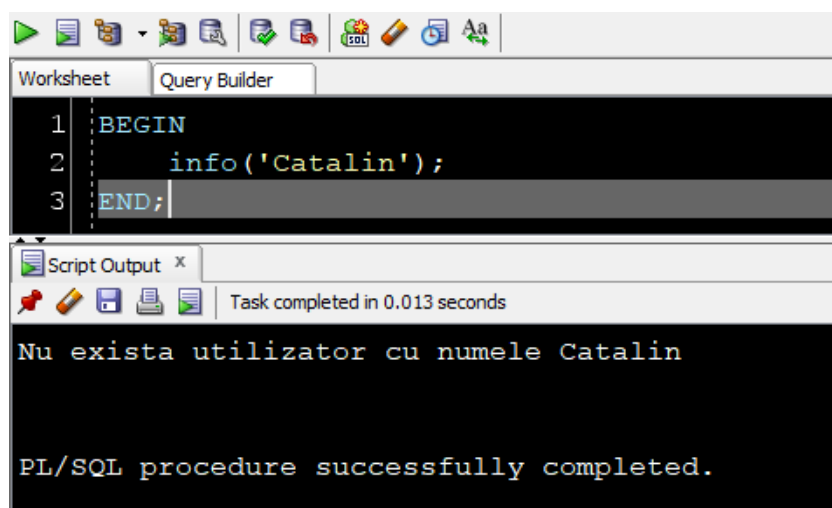
The 'Script Output' window below shows the results of the procedure execution, which took 0.016 seconds. The output is as follows:

```
-----
Conturi asociate utilizatorului Buzatu
-----
Steam: b_giulian

-----
Jocuri asociate utilizatorului Buzatu
-----
Life is Strange 2
Tell Me Why

-----
Recenzii asociate utilizatorului Buzatu
-----
Am pierdut prea mult timp in acest joc, mi-am facut foarte multi nervi, 10/10 recomand

PL/SQL procedure successfully completed.
```



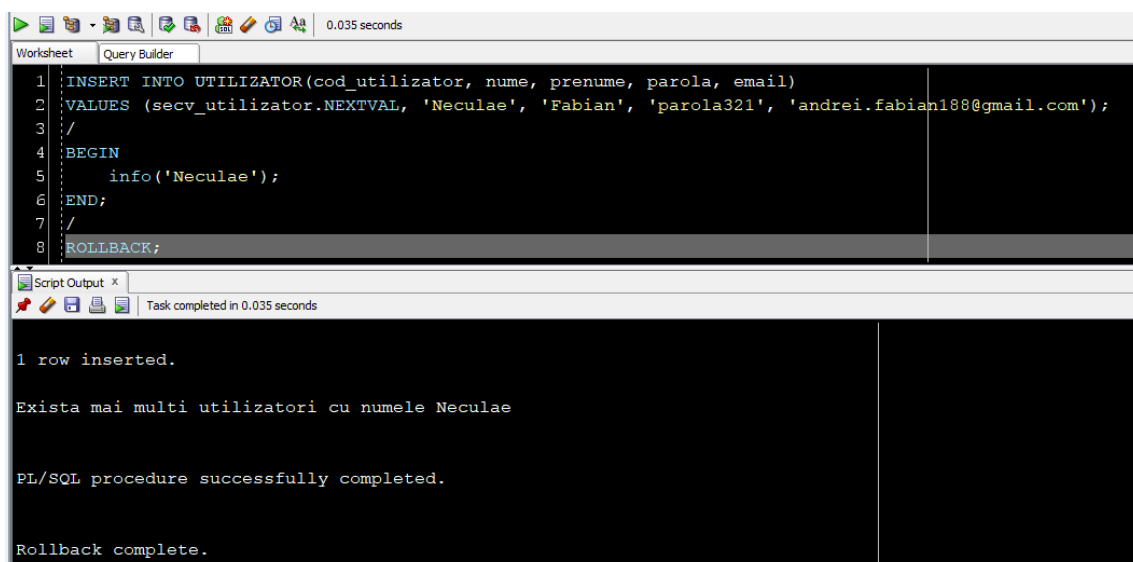
The screenshot shows the SQL Developer interface with a 'Worksheet' tab. The SQL script in the editor is as follows:

```
1 BEGIN
2   info('Catalin');
3 END;
```

The 'Script Output' window below shows the results of the procedure execution, which took 0.013 seconds. The output is as follows:

```
Nu exista utilizator cu numele Catalin

PL/SQL procedure successfully completed.
```



The screenshot shows the SQL Developer interface with a 'Worksheet' tab. The SQL script in the editor is as follows:

```
1 INSERT INTO UTILIZATOR(cod_utilizator, nume, prenume, parola, email)
2 VALUES (secd_utilizator.NEXTVAL, 'Neculae', 'Fabian', 'parola321', 'andrei.fabian188@gmail.com');
3 /
4 BEGIN
5   info('Neculae');
6 END;
7 /
8 ROLLBACK;
```

The 'Script Output' window below shows the results of the procedure execution, which took 0.035 seconds. The output is as follows:

```
1 row inserted.

Exista mai multi utilizatori cu numele Neculae

PL/SQL procedure successfully completed.

Rollback complete.
```

Exercitiul 7

Cerinta: Formulati in limbaj natural o problema pe care sa o rezolvati folosind un subprogram stocat independent care sa utilizeze 2 tipuri diferite de cursoare studiate, unul dintre acestea fiind cursor parametrizat, dependent de celalalt cursor. Apelati subprogramul.

Rezolvare: Definiti un subprogram stocat independent care primeste o cerere si doua litere ca parametrii. Daca cererea este 1 se vor parcurge toate categoriile care incep cu literele date, daca este 2 se vor parcurge toate categoriile ordonate crescator dupa nume, si daca este 3 se vor parcurge categoriile care incep cu literele date, in ordine descrescatoare. Pentru fiecare categorie, se vor afisa toate jocurile ce apartin acesteia, in ordinea crescatoare a datei de lansare, sau un mesaj corespunzator in cazul in care nu exista jocuri in categoria respectiva.

```
CREATE OR REPLACE PROCEDURE games
(
  v_cerere NUMBER DEFAULT 1,
  v_init1 VARCHAR2 DEFAULT 'A',
  v_init2 VARCHAR2 DEFAULT 'M'
)
IS
  TYPE cursor_dinamic IS REF CURSOR RETURN categorie%ROWTYPE;
  categ cursor_dinamic;
  CURSOR jocuri(v_categ categorie.cod_categorie%TYPE) IS
    SELECT jv.numa, data_lansare
    FROM joc_video jv
    JOIN joc_video_categorie jvc ON jv.cod_joc = jvc.cod_joc
    JOIN categorie c ON jvc.cod_categorie = c.cod_categorie
    WHERE c.cod_categorie = v_categ
    ORDER BY data_lansare;
  c categorie%ROWTYPE;
  j_numa joc_video.numa%TYPE;
  j_data joc_video.data_lansare%TYPE;
BEGIN
  IF v_cerere = 1 THEN
    OPEN categ FOR SELECT *
      FROM categorie
      WHERE INITCAP(numa) LIKE INITCAP(v_init1) || '%' OR INITCAP(numa) LIKE INITCAP(v_init2) ||
        '%';

    ELSIF v_cerere = 2 THEN
      OPEN categ FOR SELECT *
        FROM categorie
        ORDER BY nume;

    ELSIF v_cerere = 3 THEN
      OPEN categ FOR SELECT *
        FROM categorie
        WHERE INITCAP(numa) LIKE INITCAP(v_init1) || '%' OR INITCAP(numa) LIKE INITCAP(v_init2) ||
```

'%'

ORDER BY nume **DESC**;

END IF;

LOOP

FETCH categ **INTO** c;

EXIT WHEN categ%**NOTFOUND**;

DBMS_OUTPUT.PUT_LINE('-----');

DBMS_OUTPUT.PUT_LINE('Categorie: ' || c.nume);

DBMS_OUTPUT.PUT_LINE('-----');

OPEN jocuri(c.cod_categorie);

LOOP

FETCH jocuri **INTO** j_nume, j_data;

EXIT WHEN jocuri%**NOTFOUND**;

DBMS_OUTPUT.PUT_LINE(j_nume || ' lansat pe data de ' || j_data);

END LOOP;

IF jocuri%**ROWCOUNT** = 0 **THEN**

DBMS_OUTPUT.PUT_LINE('Nu exista jocuri in aceasta categorie');

END IF;

CLOSE jocuri;

DBMS_OUTPUT.NEW_LINE;

END LOOP;

CLOSE categ;

END;

The screenshot shows a database query editor with a 'Worksheet' tab. The code is a PL/SQL procedure named 'GAMES'. It starts with a conditional block 'IF v_cerere = 1 THEN' which opens a cursor 'categ' and selects from 'categorie' where the name matches 'v_init1' or 'v_init2'. It then prints the category name. If 'v_cerere = 2', it selects from 'categorie' ordered by name. If 'v_cerere = 3', it selects from 'categorie' ordered by name descending. After the conditional block, it enters a 'LOOP' where it fetches rows from 'categ'. For each row, it opens a cursor 'jocuri' and fetches rows from 'jocuri' ordered by date. It prints the game name and date. If no games are found for a category, it prints a message. Finally, it closes the 'jocuri' cursor and prints a new line. The procedure ends with 'END;'. The status bar at the bottom indicates 'Task completed in 0.035 seconds' and 'Procedure GAMES compiled'.

```
21 IF v_cerere = 1 THEN
22   OPEN categ FOR SELECT *
23   FROM categorie
24   WHERE INITCAP(nume) LIKE INITCAP(v_init1) || '%' OR INITCAP(nume) LIKE INITCAP(v_init2) || '%';
25
26 ELSIF v_cerere = 2 THEN
27   OPEN categ FOR SELECT *
28   FROM categorie
29   ORDER BY nume;
30
31 ELSIF v_cerere = 3 THEN
32   OPEN categ FOR SELECT *
33   FROM categorie
34   WHERE INITCAP(nume) LIKE INITCAP(v_init1) || '%' OR INITCAP(nume) LIKE INITCAP(v_init2) || '%'
35   ORDER BY nume DESC;
36
37 END IF;
38 LOOP
39   FETCH categ INTO c;
40   EXIT WHEN categ%NOTFOUND;
41   DBMS_OUTPUT.PUT_LINE('-----');
42   DBMS_OUTPUT.PUT_LINE('Categorie: ' || c.nume);
43   DBMS_OUTPUT.PUT_LINE('-----');
44   OPEN jocuri(c.cod_categorie);
45   LOOP
46     FETCH jocuri INTO j_nume, j_data;
47     EXIT WHEN jocuri%NOTFOUND;
48     DBMS_OUTPUT.PUT_LINE(j_nume || ' lansat pe data de ' || j_data);
49   END LOOP;
50   IF jocuri%ROWCOUNT = 0 THEN
51     DBMS_OUTPUT.PUT_LINE('Nu exista jocuri in aceasta categorie');
52   END IF;
53   CLOSE jocuri;
54   DBMS_OUTPUT.NEW_LINE;
55 END LOOP;
56 CLOSE categ;
```

Script Output x
Task completed in 0.035 seconds
Procedure GAMES compiled

```

Worksheet  Query Builder
1 BEGIN
2   games();
3 END;

Script Output x
Task completed in 0.039 seconds

Categorie: Actiune
-----
Alan Wake lansat pe data de 14-MAY-10
Alan Wake The Signal lansat pe data de 12-OCT-10
Alan Wake The Writer lansat pe data de 12-NOV-10
Assassin's Creed Syndicate lansat pe data de 23-OCT-15
Assassin's Creed Syndicate Jack the Ripper lansat pe data de 15-DEC-15
Assassin's Creed Syndicate The Last Maharaja lansat pe data de 01-MAR-16
Assassin's Creed Syndicate The Dreadful Crimes lansat pe data de 11-APR-16
Dead Space Remake lansat pe data de 27-JAN-23

-----

Categorie: Aventura
-----
Alan Wake lansat pe data de 14-MAY-10
Alan Wake The Signal lansat pe data de 12-OCT-10
Alan Wake The Writer lansat pe data de 12-NOV-10
Assassin's Creed Syndicate lansat pe data de 23-OCT-15
Assassin's Creed Syndicate Jack the Ripper lansat pe data de 15-DEC-15
Assassin's Creed Syndicate The Last Maharaja lansat pe data de 01-MAR-16
Assassin's Creed Syndicate The Dreadful Crimes lansat pe data de 11-APR-16
Life is Strange 2 lansat pe data de 27-SEP-18
Tell Me Why lansat pe data de 17-AUG-20
Dead Space Remake lansat pe data de 27-JAN-23

-----

Categorie: MMORPG
-----
World of Warcraft lansat pe data de 23-NOV-04

-----

Categorie: Metroidvania
-----
Pronty lansat pe data de 19-NOV-21

```

```

Worksheet  Query Builder
1 BEGIN
2   games(2);
3 END;

Script Output x
Task completed in 0.027 seconds

Life is Strange 2 lansat pe data de 27-SEP-18
Tell Me Why lansat pe data de 17-AUG-20

-----

Categorie: Horror
-----
Dead Space Remake lansat pe data de 27-JAN-23

-----

Categorie: MMORPG
-----
World of Warcraft lansat pe data de 23-NOV-04

-----

Categorie: Metroidvania
-----
Pronty lansat pe data de 19-NOV-21

-----

Categorie: Science-fiction
-----
Dead Space Remake lansat pe data de 27-JAN-23

-----

Categorie: Thriller
-----
Alan Wake lansat pe data de 14-MAY-10
Alan Wake The Signal lansat pe data de 12-OCT-10
Alan Wake The Writer lansat pe data de 12-NOV-10

PL/SQL procedure successfully completed.

```

The screenshot shows the Oracle SQL Developer interface. The top pane, titled 'Worksheet', contains a PL/SQL script with three lines: `BEGIN`, `games(3, 'h', 't');`, and `END;`. The bottom pane, titled 'Script Output', shows the execution results. It displays the category 'Thriller' followed by three lines of data: 'Alan Wake lansat pe data de 14-MAY-10', 'Alan Wake The Signal lansat pe data de 12-OCT-10', and 'Alan Wake The Writer lansat pe data de 12-NOV-10'. Below this, it shows the category 'Horror' followed by one line of data: 'Dead Space Remake lansat pe data de 27-JAN-23'. At the bottom, it states 'PL/SQL procedure successfully completed.'.

```

1 BEGIN
2   games(3, 'h', 't');
3 END;

-----
Categorie: Thriller
-----
Alan Wake lansat pe data de 14-MAY-10
Alan Wake The Signal lansat pe data de 12-OCT-10
Alan Wake The Writer lansat pe data de 12-NOV-10

-----
Categorie: Horror
-----
Dead Space Remake lansat pe data de 27-JAN-23

PL/SQL procedure successfully completed.

```

Exercitiul 8

Cerinta: Formulati in limbaj natural o problema pe care sa o rezolvati folosind un subprogram stocat independent de tip functie care sa utilizeze intr-o singura comanda SQL 3 dintre tabelele definite. Definiti minim 2 exceptii proprii. Apelati subprogramul astfel incat sa evidentiati toate cazurile definite si tratate.

Rezolvare: Definiti un subprogram stocat independent de tip functie care primeste numele unui utilizator si numele unui joc ca parametri si afiseaza nota pe care utilizatorul a dat-o jocului respectiv. Tratatii cazurile in care nu exista numele utilizatorului sau al jocului, cazul in care exista mai multi utilizatori sau mai multe jocuri cu acelasi nume si cazul in care utilizatorul nu a lasat recenzie jocului respectiv (nu a dorit sa lase recenzie sau nu detine jocul).

```

CREATE OR REPLACE FUNCTION get_review_mark
(
  v_ume utilizator.nume%TYPE DEFAULT 'Grigore',
  v_joc joc_video.nume%TYPE DEFAULT 'Pronty'
) RETURN recenzie.scor%TYPE
IS
  v_scor NUMBER;
  v_nr_utilizator NUMBER;
  v_nr_joc NUMBER;
  v_nr_recenzie NUMBER;

  exception_no_user EXCEPTION;

```



```

PRAGMA EXCEPTION_INIT(exception_no_user, -20001);

exception_multiple_users EXCEPTION;
PRAGMA EXCEPTION_INIT(exception_multiple_users, -20002);

exception_no_game EXCEPTION;
PRAGMA EXCEPTION_INIT(exception_no_game, -20003);

exception_multiple_games EXCEPTION;
PRAGMA EXCEPTION_INIT(exception_multiple_games, -20004);

exception_no_review EXCEPTION;
PRAGMA EXCEPTION_INIT(exception_no_review, -20005);

```

BEGIN

```

SELECT COUNT(*)
INTO v_nr_utilizator
FROM utilizator
WHERE INITCAP(utilizator.ume) = INITCAP(v_ume);

IF v_nr_utilizator = 0 THEN
    RAISE exception_no_user;
END IF;

IF v_nr_utilizator > 1 then
    RAISE exception_multiple_users;
END IF;

SELECT COUNT(*)
INTO v_nr_joc
FROM joc_video
WHERE INITCAP(joc_video.ume) = INITCAP(v_joc);

IF v_nr_joc = 0 THEN
    RAISE exception_no_game;
END IF;

IF v_nr_joc > 1 then
    RAISE exception_multiple_games;
END IF;

SELECT COUNT(*)
INTO v_nr_recenzie
FROM recenzie
JOIN utilizator ON utilizator.cod_utilizator = recenzie.cod_utilizator
JOIN joc_video ON joc_video.cod_joc = recenzie.cod_joc
WHERE INITCAP(utilizator.ume) = INITCAP(v_ume) AND INITCAP(joc_video.ume) = INITCAP(v_joc);

IF v_nr_recenzie = 0 THEN
    RAISE exception_no_review;
END IF;

SELECT scor

```

```

INTO v_scor
FROM recenzie
JOIN utilizator ON utilizator.cod_utilizator = recenzie.cod_utilizator
JOIN joc_video ON joc_video.cod_joc = recenzie.cod_joc
WHERE INITCAP(utilizator.num) = INITCAP(v_num) AND INITCAP(joc_video.num) = INITCAP(v_joc);

RETURN v_scor;
EXCEPTION
WHEN exception_no_user THEN
    RAISE_APPLICATION_ERROR(-20001, 'Nu exista utilizator cu numele ' || v_num);
WHEN exception_multiple_users THEN
    RAISE_APPLICATION_ERROR(-20002, 'Exista mai multi utilizatori cu numele ' || v_num);
WHEN exception_no_game THEN
    RAISE_APPLICATION_ERROR(-20003, 'Nu exista joc cu numele ' || v_joc);
WHEN exception_multiple_games THEN
    RAISE_APPLICATION_ERROR(-20004, 'Exista mai multe jocuri cu numele ' || v_joc);
WHEN exception_no_review THEN
    RAISE_APPLICATION_ERROR(-20005, 'Nu exista recenzie pentru jocul ' || v_joc || ' de catre utilizatorul ' ||
v_num);
END;

```

```

50  IF v_exista_joc > 1 then
51      RAISE exception_multiple_games;
52  END IF;
53
54  SELECT COUNT(*)
55  INTO v_exista_recenzie
56  FROM recenzie
57  JOIN utilizator ON utilizator.cod_utilizator = recenzie.cod_utilizator
58  JOIN joc_video ON joc_video.cod_joc = recenzie.cod_joc
59  WHERE INITCAP(utilizator.num) = INITCAP(v_num) AND INITCAP(joc_video.num) = INITCAP(v_joc);
60
61  IF v_exista_recenzie = 0 THEN
62      RAISE exception_no_review;
63  END IF;
64
65  SELECT scor
66  INTO v_scor
67  FROM recenzie
68  JOIN utilizator ON utilizator.cod_utilizator = recenzie.cod_utilizator
69  JOIN joc_video ON joc_video.cod_joc = recenzie.cod_joc
70  WHERE INITCAP(utilizator.num) = INITCAP(v_num) AND INITCAP(joc_video.num) = INITCAP(v_joc);
71
72  RETURN v_scor;
73  EXCEPTION
74  WHEN exception_no_user THEN
75      RAISE_APPLICATION_ERROR(-20001, 'Nu exista utilizator cu numele ' || v_num);
76  WHEN exception_multiple_users THEN
77      RAISE_APPLICATION_ERROR(-20002, 'Exista mai multi utilizatori cu numele ' || v_num);
78  WHEN exception_no_game THEN
79      RAISE_APPLICATION_ERROR(-20003, 'Nu exista joc cu numele ' || v_joc);
80  WHEN exception_multiple_games THEN
81      RAISE_APPLICATION_ERROR(-20004, 'Exista mai multe jocuri cu numele ' || v_joc);
82  WHEN exception_no_review THEN
83      RAISE_APPLICATION_ERROR(-20005, 'Nu exista recenzie pentru jocul ' || v_joc || ' de catre utilizatorul ' || v_num);
84  END;

```

Script Output x

Task completed in 0.045 seconds

Function GET_REVIEW_MARK compiled

Worksheet Query Builder

```
1 BEGIN
2 DBMS_OUTPUT.PUT_LINE('Scor: ' || get_review_mark('Neculae', 'Dead Space Remake') || '/5');
3 END;
```

Script Output x

Task completed in 0.023 seconds

Scor: 3/5

PL/SQL procedure successfully completed.

Worksheet Query Builder

```
1 BEGIN
2 DBMS_OUTPUT.PUT_LINE('Scor: ' || get_review_mark() || '/5');
3 END;
```

Script Output x

Task completed in 0.037 seconds

Function GET_REVIEW_MARK compiled

Error starting at line : 1 in command -

```
BEGIN
  DBMS_OUTPUT.PUT_LINE('Scor: ' || get_review_mark() || '/5');
END;
```

Error report -

ORA-20005: Nu exista recenzie pentru jocul Pronty de catre utilizatorul Grigore

ORA-06512: at "C##ANDREI.GET_REVIEW_MARK", line 46

ORA-06512: at line 2

Worksheet Query Builder

```
1 BEGIN
2 DBMS_OUTPUT.PUT_LINE('Scor: ' || get_review_mark('Fabian') || '/5');
3 END;
```

Script Output x

Task completed in 0.037 seconds

Error starting at line : 1 in command -

```
BEGIN
  DBMS_OUTPUT.PUT_LINE('Scor: ' || get_review_mark('Fabian') || '/5');
END;
```

Error report -

ORA-20001: Nu exista utilizator cu numele Fabian

ORA-06512: at "C##ANDREI.GET_REVIEW_MARK", line 18

ORA-06512: at line 2

Worksheet Query Builder

```
1 BEGIN
2 DBMS_OUTPUT.PUT_LINE('Scor: ' || get_review_mark('Neculae', 'GTA V') || '/5');
3 END;
```

Script Output x

Task completed in 0.02 seconds

Error starting at line : 1 in command -

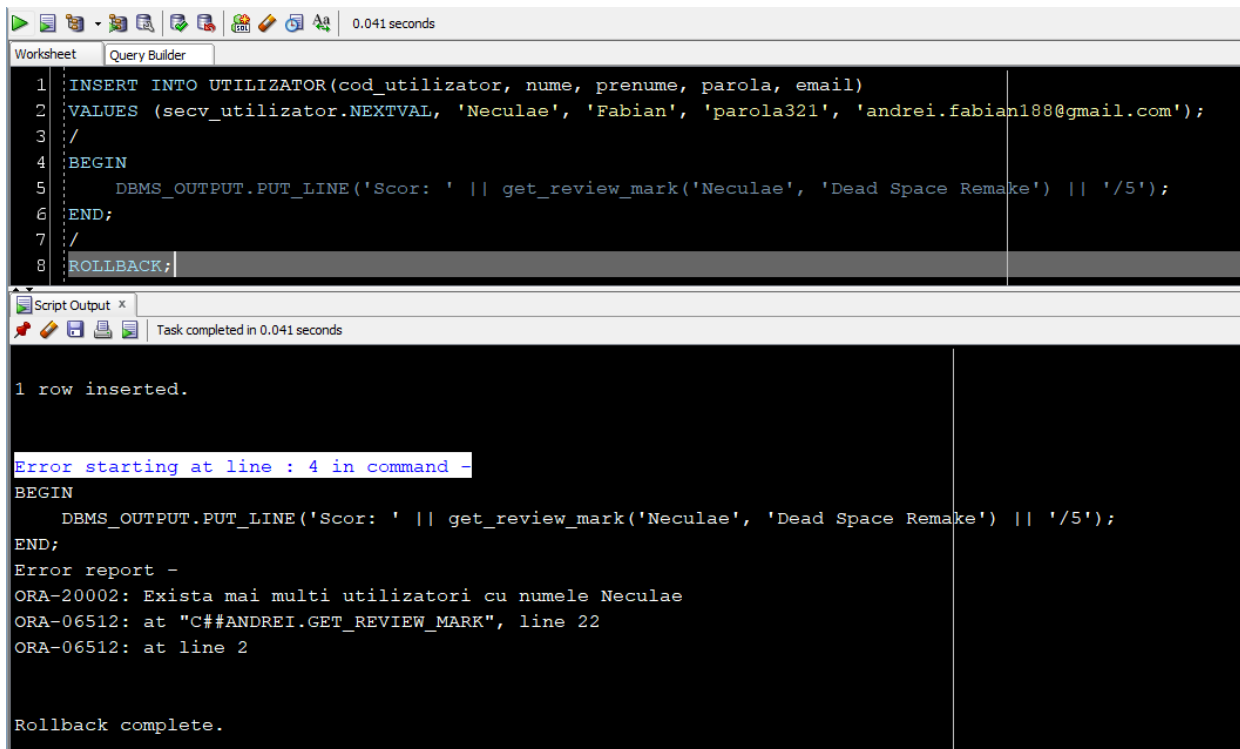
```
BEGIN
  DBMS_OUTPUT.PUT_LINE('Scor: ' || get_review_mark('Neculae', 'GTA V') || '/5');
END;
```

Error report -

ORA-20003: Nu exista joc cu numele GTA V

ORA-06512: at "C##ANDREI.GET_REVIEW_MARK", line 31

ORA-06512: at line 2



The screenshot shows the SQL Developer interface. The top toolbar indicates a duration of 0.041 seconds. The 'Worksheet' tab is active, displaying a SQL script with the following content:

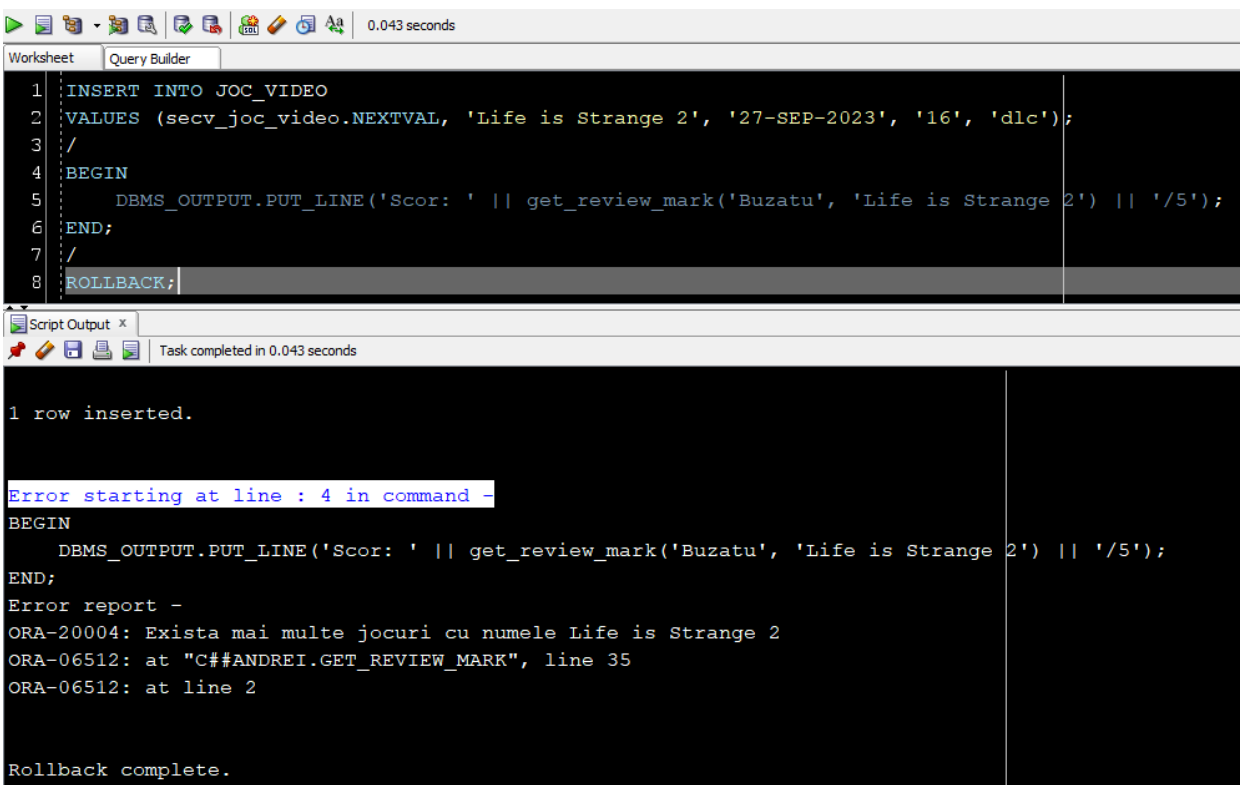
```
1 INSERT INTO UTILIZATOR(cod_utilizator, nume, prenume, parola, email)
2 VALUES (secv_utilizator.NEXTVAL, 'Neculae', 'Fabian', 'parola321', 'andrei.fabian198@gmail.com');
3 /
4 BEGIN
5     DBMS_OUTPUT.PUT_LINE('Scor: ' || get_review_mark('Neculae', 'Dead Space Remake') || '/5');
6 END;
7 /
8 ROLLBACK;
```

The 'Script Output' window below shows the execution results:

```
1 row inserted.

Error starting at line : 4 in command -
BEGIN
    DBMS_OUTPUT.PUT_LINE('Scor: ' || get_review_mark('Neculae', 'Dead Space Remake') || '/5');
END;
Error report -
ORA-20002: Exista mai multi utilizatori cu numele Neculae
ORA-06512: at "C##ANDREI.GET_REVIEW_MARK", line 22
ORA-06512: at line 2

Rollback complete.
```



The screenshot shows the SQL Developer interface. The top toolbar indicates a duration of 0.043 seconds. The 'Worksheet' tab is active, displaying a SQL script with the following content:

```
1 INSERT INTO JOC_VIDEO
2 VALUES (secv_joc_video.NEXTVAL, 'Life is Strange 2', '27-SEP-2023', '16', 'dlc');
3 /
4 BEGIN
5     DBMS_OUTPUT.PUT_LINE('Scor: ' || get_review_mark('Buzatu', 'Life is Strange 2') || '/5');
6 END;
7 /
8 ROLLBACK;
```

The 'Script Output' window below shows the execution results:

```
1 row inserted.

Error starting at line : 4 in command -
BEGIN
    DBMS_OUTPUT.PUT_LINE('Scor: ' || get_review_mark('Buzatu', 'Life is Strange 2') || '/5');
END;
Error report -
ORA-20004: Exista mai multe jocuri cu numele Life is Strange 2
ORA-06512: at "C##ANDREI.GET_REVIEW_MARK", line 35
ORA-06512: at line 2

Rollback complete.
```

Exercitiul 9

Cerinta: Formulati in limbaj natural o problema pe care sa o rezolvati folosind un subprogram stocat independent de tip procedura care sa utilizeze intr-o singura comanda SQL 5 dintre tabelele definite. Tratati toate exceptiile care pot aparea, incluzand exceptiile NO_DATA_FOUND și TOO_MANY_ROWS. Apelati subprogramul astfel incat sa evidentiati toate cazurile tratate.

Rezolvare: Definiti un subprogram stocat independent de tip procedura care primeste un nume de dezvoltator ca parametru si afiseaza utilizatorul care detine cele mai multe jocuri de la acesta. Tratati cazurile in care nu exista dezvoltator cu numele dat, in care exista mai multi dezvoltatori cu numele dat, in care nu exista utilizator (nu detine nimeni joc de la dezvoltatorul dat) sau in care exista mai multi utilizatori.

```
CREATE OR REPLACE PROCEDURE find_user
(
  v_dezvoltator dezvoltator.nume%TYPE DEFAULT 'FunZone Games'
)
IS
  v_nr_dezvoltator NUMBER;
  v_max NUMBER;
  v_utilizator VARCHAR2(128);

  exception_no_developer EXCEPTION;
  PRAGMA EXCEPTION_INIT(exception_no_developer, -20001);

  exception_multiple_developers EXCEPTION;
  PRAGMA EXCEPTION_INIT(exception_multiple_developers, -20002);

BEGIN
  SELECT COUNT(*)
  INTO v_nr_dezvoltator
  FROM dezvoltator
  WHERE INITCAP(dezvoltator.nume) = INITCAP(v_dezvoltator);

  IF v_nr_dezvoltator = 0 THEN
    RAISE exception_no_developer;
  END IF;

  IF v_nr_dezvoltator > 1 THEN
    RAISE exception_multiple_developers;
  END IF;

  SELECT MAX(nr_jocuri)
  INTO v_max
  FROM
  (
    SELECT COUNT(*) AS nr_jocuri
    FROM joc_video jv
    JOIN dezvoltator_editor_joc_video dejv ON jv.cod_joc = dejv.cod_joc
```

```

JOIN dezvoltator d ON dejv.cod_dezvoltator = d.cod_dezvoltator
WHERE INITCAP(d.num) = INITCAP(v_dezvoltator)
GROUP BY d.num)
);

SELECT num || ' ' || prenume
INTO v_utilizator
FROM
(
    SELECT u.num, u.prenume, COUNT(*) AS nr_jocuri
    FROM joc_video jv
    JOIN dezvoltator_editor_joc_video dejv ON jv.cod_joc = dejv.cod_joc
    JOIN dezvoltator d ON dejv.cod_dezvoltator = d.cod_dezvoltator
    JOIN utilizator_joc_video_cont ujvc ON jv.cod_joc = ujvc.cod_joc
    JOIN utilizator u ON ujvc.cod_utilizator = u.cod_utilizator
    WHERE INITCAP(d.num) = INITCAP(v_dezvoltator)
    GROUP BY u.num, u.prenume
    HAVING COUNT(*) = v_max
);

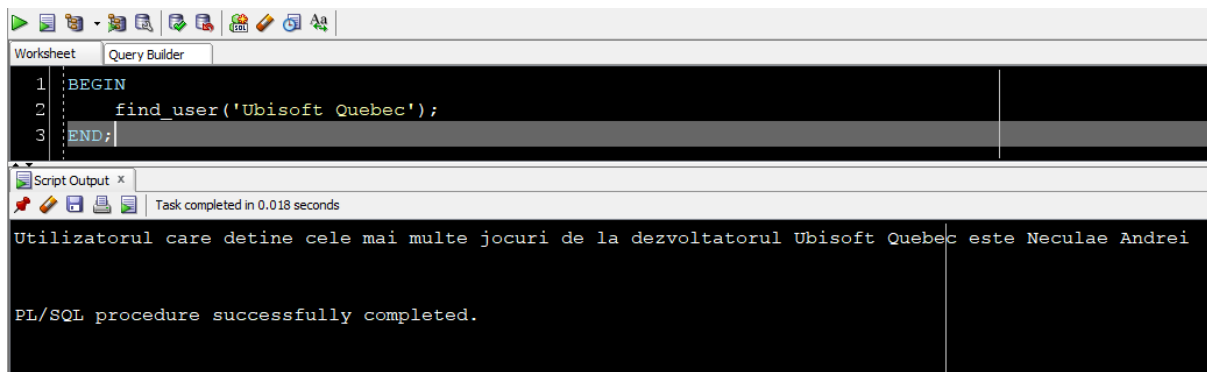
DBMS_OUTPUT.PUT_LINE('Utilizatorul care detine cele mai multe jocuri de la dezvoltatorul ' ||
v_dezvoltator || ' este ' || v_utilizator);
EXCEPTION
    WHEN exception_no_developer THEN
        RAISE_APPLICATION_ERROR(-20001, 'Nu exista dezvoltator cu numele ' || v_dezvoltator);
    WHEN exception_multiple_developers THEN
        RAISE_APPLICATION_ERROR(-20002, 'Exista mai multi dezvoltatori cu numele ' || v_dezvoltator);
    WHEN NO_DATA_FOUND THEN
        RAISE_APPLICATION_ERROR(-20003, 'Nu exista utilizator care detine jocuri de la dezvoltatorul ' ||
v_dezvoltator);
    WHEN TOO_MANY_ROWS THEN
        RAISE_APPLICATION_ERROR(-20004, 'Exista mai multi utilizatori care detin numarul maxim de jocuri
de la dezvoltatorul ' || v_dezvoltator);
END;
```

```

34 SELECT COUNT(*) AS nr_jocuri
35 FROM joc_video jv
36 JOIN dezvoltator_editor_joc_video dejv ON jv.cod_joc = dejv.cod_joc
37 JOIN dezvoltator d ON dejv.cod_dezvoltator = d.cod_dezvoltator
38 WHERE INITCAP(d.num) = INITCAP(v_dezvoltator)
39 GROUP BY d.num
40 );
41
42 SELECT num || ' ' || prenume
43 INTO v_utilizator
44 FROM
45 (
46     SELECT u.num, u.prenume, COUNT(*) AS nr_jocuri
47     FROM joc_video jv
48     JOIN dezvoltator_editor_joc_video dejv ON jv.cod_joc = dejv.cod_joc
49     JOIN dezvoltator d ON dejv.cod_dezvoltator = d.cod_dezvoltator
50     JOIN utilizator_joc_video_cont ujvc ON jv.cod_joc = ujvc.cod_joc
51     JOIN utilizator u ON ujvc.cod_utilizator = u.cod_utilizator
52     WHERE INITCAP(d.num) = INITCAP(v_dezvoltator)
53     GROUP BY u.num, u.prenume
54     HAVING COUNT(*) = v_max
55 );
56
57 DBMS_OUTPUT.PUT_LINE('Utilizatorul care detine cele mai multe jocuri de la dezvoltatorul ' || v_dezvoltator || ' este ' || v_utilizator);
58
59 EXCEPTION
60     WHEN exception_no_developer THEN
61         RAISE_APPLICATION_ERROR(-20001, 'Nu exista dezvoltator cu numele ' || v_dezvoltator);
62     WHEN exception_multiple_developers THEN
63         RAISE_APPLICATION_ERROR(-20002, 'Exista mai multi dezvoltatori cu numele ' || v_dezvoltator);
64     WHEN NO_DATA_FOUND THEN
65         RAISE_APPLICATION_ERROR(-20003, 'Nu exista utilizator care detine jocuri de la dezvoltatorul ' || v_dezvoltator);
66     WHEN TOO_MANY_ROWS THEN
67         RAISE_APPLICATION_ERROR(-20004, 'Exista mai multi utilizatori care detin numarul maxim de jocuri de la dezvoltatorul ' || v_dezvoltator);
68
69 END;
```

Task completed in 0.031 seconds

Procedure FIND_USER compiled

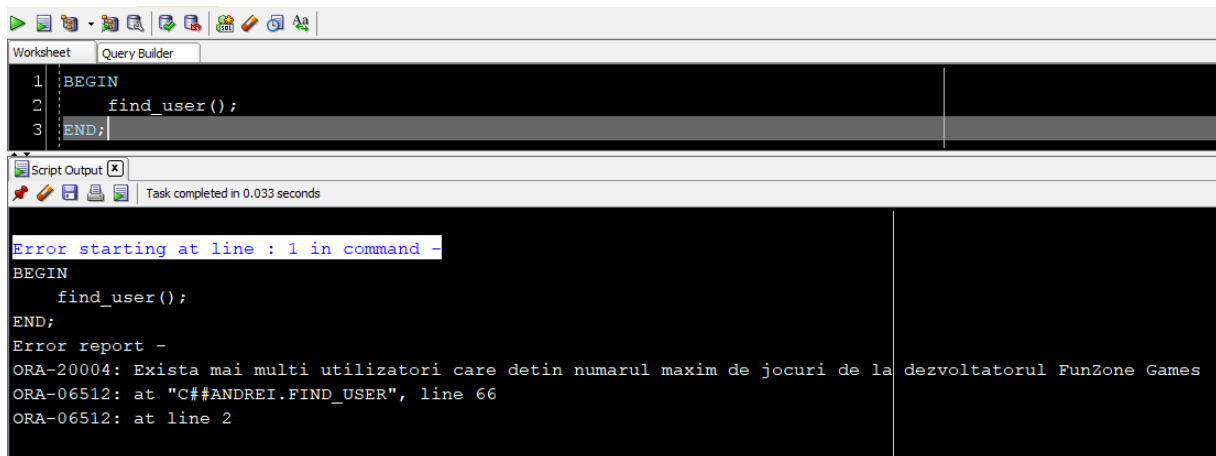


The screenshot shows the SQL Developer interface with the 'Query Builder' tab active. The SQL script in the editor consists of three lines: `1 BEGIN`, `2 find_user('Ubisoft Quebec');`, and `3 END;`. Below the editor, the 'Script Output' window displays the results of the execution. It shows the text 'Utilizatorul care detine cele mai multe jocuri de la dezvoltatorul Ubisoft Quebec este Neculae Andrei' and a confirmation message 'PL/SQL procedure successfully completed.'.

```
1 BEGIN
2   find_user('Ubisoft Quebec');
3 END;
```

Utilizatorul care detine cele mai multe jocuri de la dezvoltatorul Ubisoft Quebec este Neculae Andrei

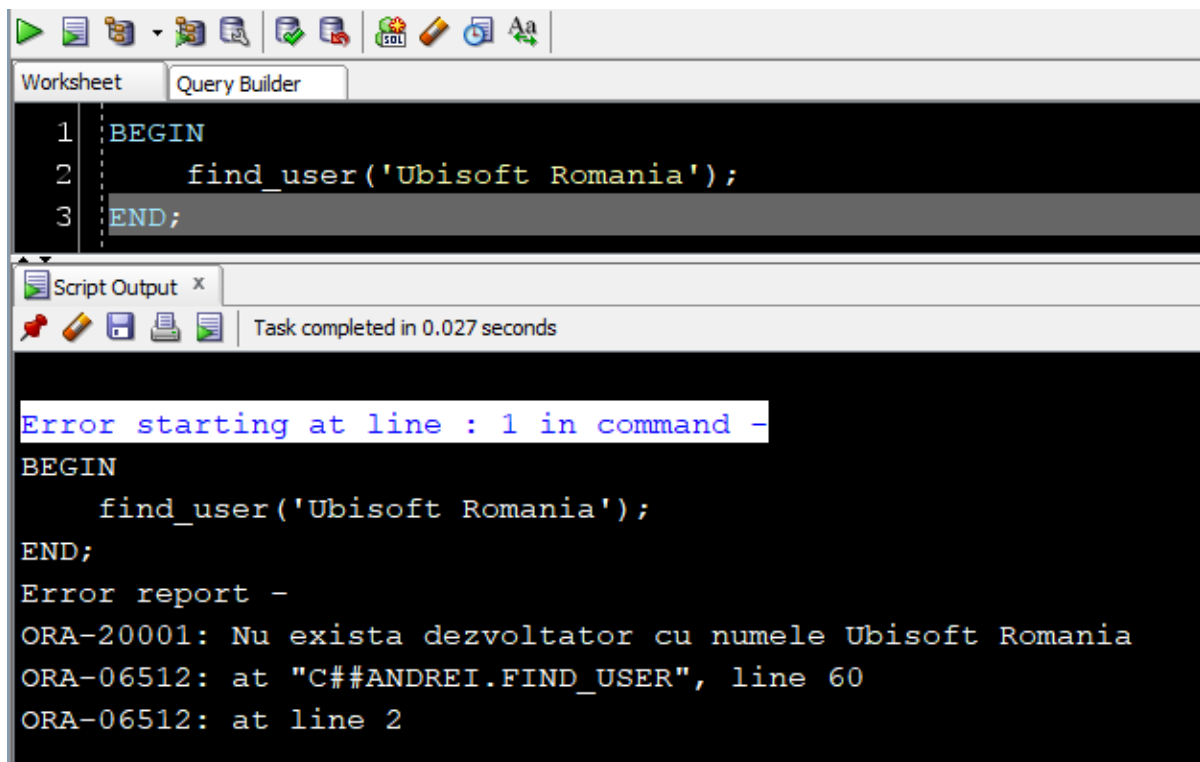
PL/SQL procedure successfully completed.



The screenshot shows the SQL Developer interface with the 'Query Builder' tab active. The SQL script in the editor consists of three lines: `1 BEGIN`, `2 find_user();`, and `3 END;`. Below the editor, the 'Script Output' window displays an error message: 'Error starting at line : 1 in command - BEGIN find_user(); END;'. The error report indicates 'ORA-20004: Exista mai multi utilizatori care detin numarul maxim de jocuri de la dezvoltatorul FunZone Games' and 'ORA-06512: at "C##ANDREI.FIND_USER", line 66'.

```
1 BEGIN
2   find_user();
3 END;
```

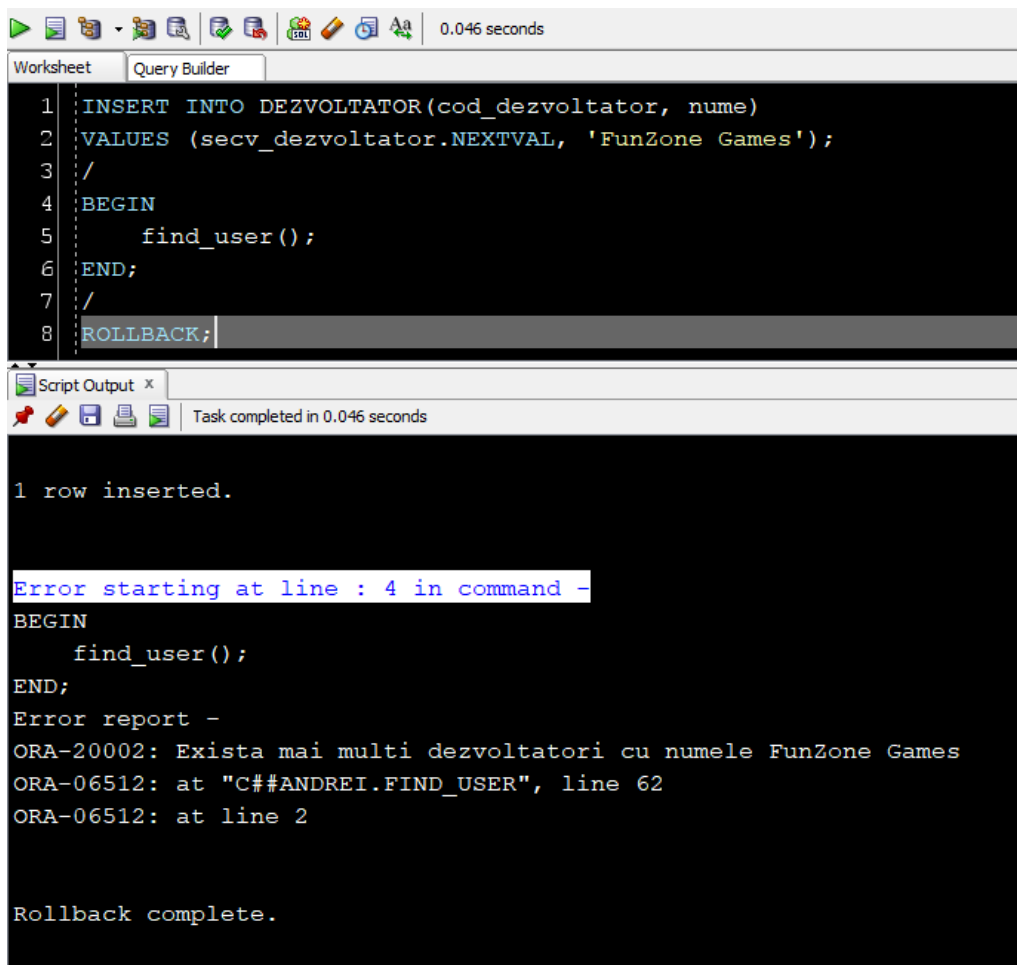
Error starting at line : 1 in command -
BEGIN
 find_user();
END;
Error report -
ORA-20004: Exista mai multi utilizatori care detin numarul maxim de jocuri de la dezvoltatorul FunZone Games
ORA-06512: at "C##ANDREI.FIND_USER", line 66
ORA-06512: at line 2



The screenshot shows the SQL Developer interface with the 'Query Builder' tab active. The SQL script in the editor consists of three lines: `1 BEGIN`, `2 find_user('Ubisoft Romania');`, and `3 END;`. Below the editor, the 'Script Output' window displays an error message: 'Error starting at line : 1 in command - BEGIN find_user('Ubisoft Romania'); END;'. The error report indicates 'ORA-20001: Nu exista dezvoltator cu numele Ubisoft Romania' and 'ORA-06512: at "C##ANDREI.FIND_USER", line 60'.

```
1 BEGIN
2   find_user('Ubisoft Romania');
3 END;
```

Error starting at line : 1 in command -
BEGIN
 find_user('Ubisoft Romania');
END;
Error report -
ORA-20001: Nu exista dezvoltator cu numele Ubisoft Romania
ORA-06512: at "C##ANDREI.FIND_USER", line 60
ORA-06512: at line 2



The screenshot shows the SQL Developer interface with a script in the 'Query Builder' tab. The script is as follows:

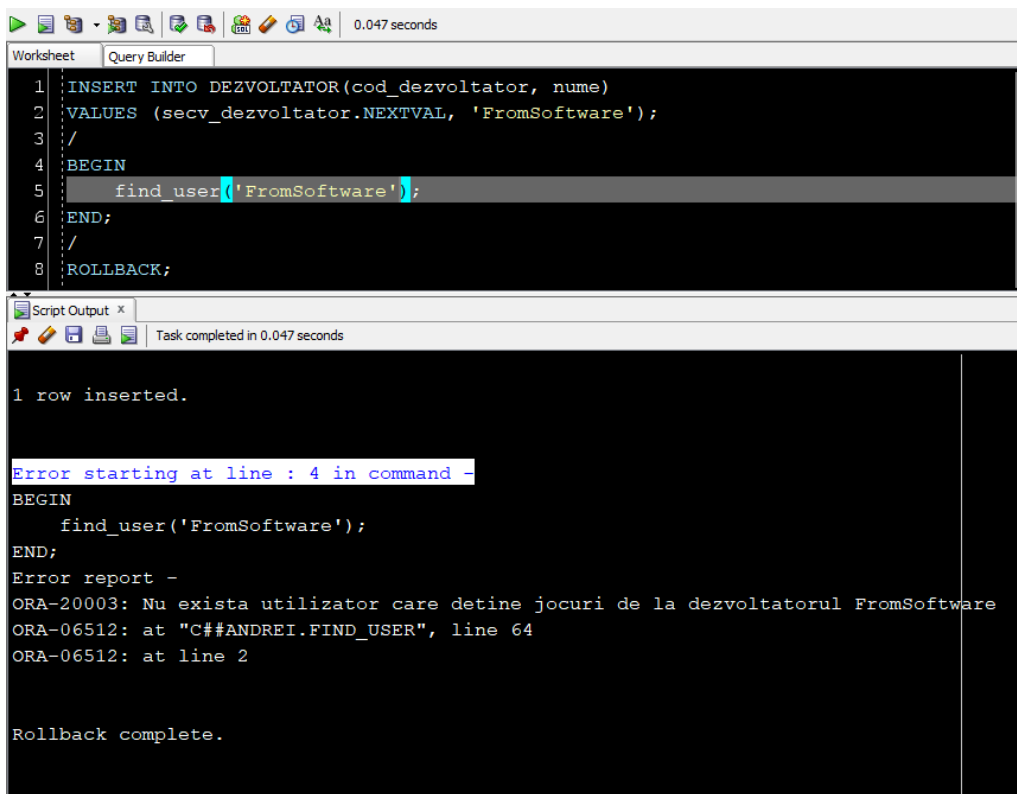
```
1 INSERT INTO DEZVOLTATOR(cod_dezvoltator, nume)
2 VALUES (secv_dezvoltator.NEXTVAL, 'FunZone Games');
3 /
4 BEGIN
5     find_user();
6 END;
7 /
8 ROLLBACK;
```

The 'Script Output' window below shows the execution results:

```
1 row inserted.

Error starting at line : 4 in command -
BEGIN
    find_user();
END;
Error report -
ORA-20002: Exista mai multi dezvoltatori cu numele FunZone Games
ORA-06512: at "C##ANDREI.FIND_USER", line 62
ORA-06512: at line 2

Rollback complete.
```



The screenshot shows the SQL Developer interface with a script in the 'Query Builder' tab. The script is as follows:

```
1 INSERT INTO DEZVOLTATOR(cod_dezvoltator, nume)
2 VALUES (secv_dezvoltator.NEXTVAL, 'FromSoftware');
3 /
4 BEGIN
5     find_user('FromSoftware');
6 END;
7 /
8 ROLLBACK;
```

The 'Script Output' window below shows the execution results:

```
1 row inserted.

Error starting at line : 4 in command -
BEGIN
    find_user('FromSoftware');
END;
Error report -
ORA-20003: Nu exista utilizator care detine jocuri de la dezvoltatorul FromSoftware
ORA-06512: at "C##ANDREI.FIND_USER", line 64
ORA-06512: at line 2

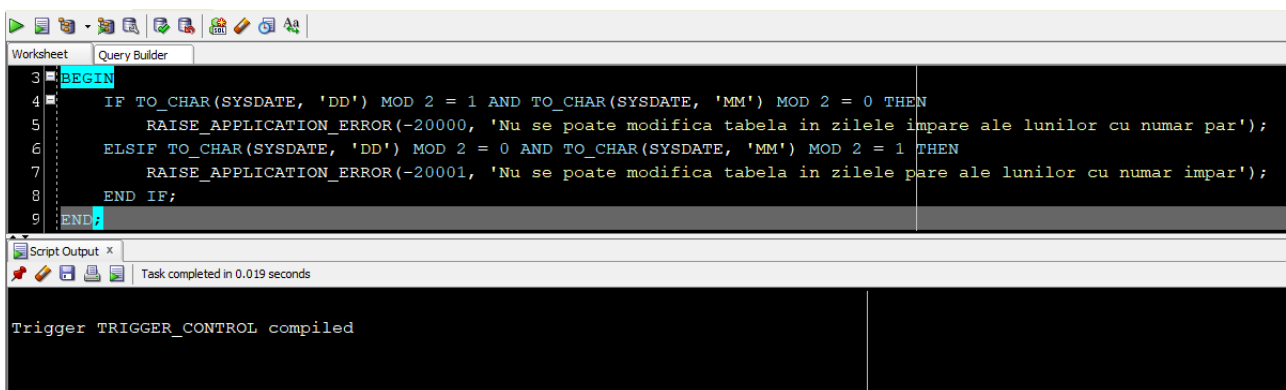
Rollback complete.
```


Exercitiul 10

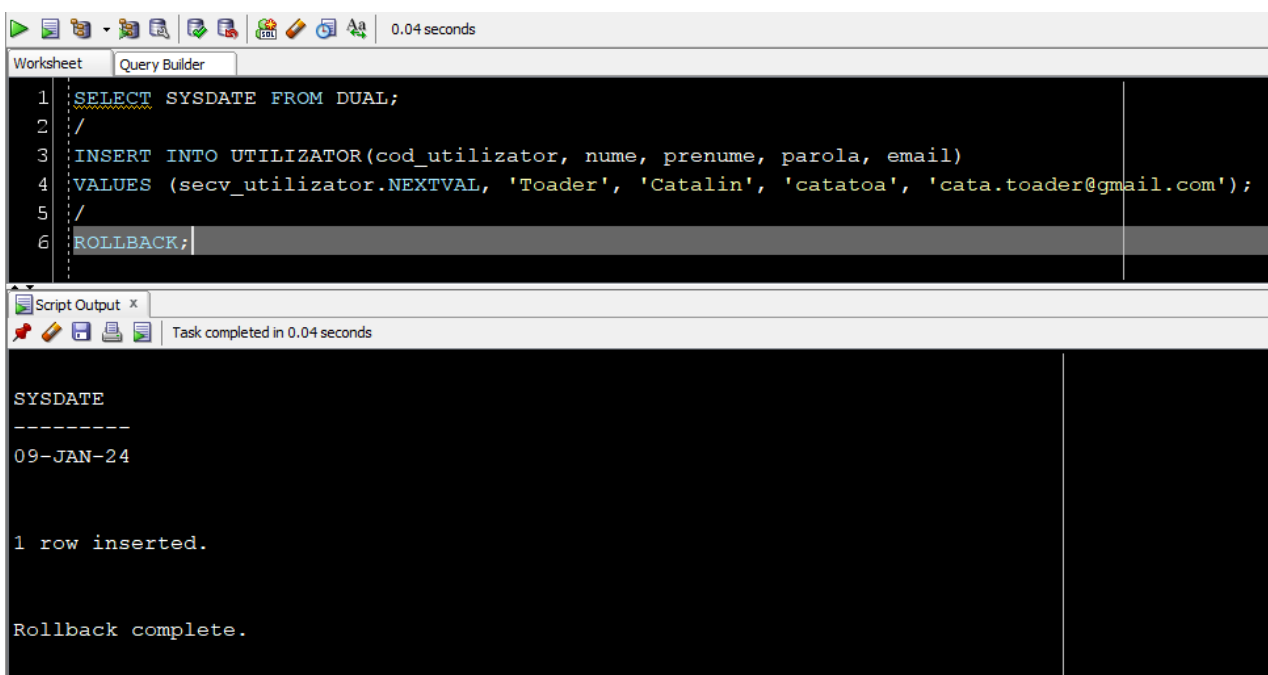
Cerinta: Definiti un trigger de tip LMD la nivel de comanda. Declansati trigger-ul.

Rezolvare: Definiti un trigger care blocheaza lucrul asupra tabeli utilizator atat in zilele impare ale lunilor pare, cat si in zilele pare ale lunilor impare.

```
CREATE OR REPLACE TRIGGER trigger_control
BEFORE INSERT OR UPDATE OR DELETE ON UTILIZATOR
BEGIN
  IF TO_CHAR(SYSDATE, 'DD') MOD 2 = 1 AND TO_CHAR(SYSDATE, 'MM') MOD 2 = 0 THEN
    RAISE_APPLICATION_ERROR(-20000, 'Nu se poate modifica tabela in zilele impare ale lunilor pare');
  ELSIF TO_CHAR(SYSDATE, 'DD') MOD 2 = 0 AND TO_CHAR(SYSDATE, 'MM') MOD 2 = 1 THEN
    RAISE_APPLICATION_ERROR(-20001, 'Nu se poate modifica tabela in zilele pare ale lunilor impare');
  END IF;
END;
```



The screenshot shows the SQL Developer interface. The top toolbar includes icons for running, saving, and other database operations. Below the toolbar, there are tabs for 'Worksheet' and 'Query Builder'. The main area displays the trigger code from the previous block. Below the code editor, the 'Script Output' window is open, showing the message 'Trigger TRIGGER_CONTROL compiled' and 'Task completed in 0.019 seconds'.



The screenshot shows the SQL Developer interface with a test query. The top toolbar includes icons for running, saving, and other database operations. Below the toolbar, there are tabs for 'Worksheet' and 'Query Builder'. The main area displays the following SQL code:

```
1 SELECT SYSDATE FROM DUAL;
2 /
3 INSERT INTO UTILIZATOR(cod_utilizator, nume, prenume, parola, email)
4 VALUES (secd_utilizator.NEXTVAL, 'Toader', 'Catalin', 'catatoa', 'cata.toader@gmail.com');
5 /
6 ROLLBACK;
```

Below the code editor, the 'Script Output' window is open, showing the output of the query: 'SYSDATE', '09-JAN-24', '1 row inserted.', and 'Rollback complete.' The window also shows 'Task completed in 0.04 seconds'.

0.104 seconds

Worksheet Query Builder

```
1 SELECT SYSDATE FROM DUAL;
2 /
3 INSERT INTO UTILIZATOR(cod_utilizator, nume, prenume, parola, email)
4 VALUES (secv_utilizator.NEXTVAL, 'Toader', 'Catalin', 'catatoa', 'cata.toader@gmail.com');
5 /
6 ROLLBACK;
```

Script Output x Task completed in 0.104 seconds

SYSDATE

29-DEC-23

Error starting at line : 3 in command -
INSERT INTO UTILIZATOR(cod_utilizator, nume, prenume, parola, email)
VALUES (secv_utilizator.NEXTVAL, 'Toader', 'Catalin', 'catatoa', 'cata.toader@gmail.com')
Error at Command Line : 4 Column : 9

Error report -
SQL Error: ORA-20000: Nu se poate modifica tabela in zilele impare ale lunilor cu numar par
ORA-06512: at "C##ANDREI.TRIGGER_CONTROL", line 3
ORA-04088: error during execution of trigger 'C##ANDREI.TRIGGER_CONTROL'
20000. 00000 - "%s"
*Cause: The stored procedure 'raise_application_error'
was called which causes this error to be generated.
*Action: Correct the problem as described in the error message or contact
the application administrator or DBA for more information.

Rollback complete.

0.097 seconds

Worksheet Query Builder

```
1 SELECT SYSDATE FROM DUAL;
2 /
3 INSERT INTO UTILIZATOR(cod_utilizator, nume, prenume, parola, email)
4 VALUES (secv_utilizator.NEXTVAL, 'Toader', 'Catalin', 'catatoa', 'cata.toader@gmail.com');
5 /
6 ROLLBACK;
```

Script Output x Task completed in 0.097 seconds

SYSDATE

04-JAN-24

Error starting at line : 3 in command -
INSERT INTO UTILIZATOR(cod_utilizator, nume, prenume, parola, email)
VALUES (secv_utilizator.NEXTVAL, 'Toader', 'Catalin', 'catatoa', 'cata.toader@gmail.com')
Error at Command Line : 3 Column : 13

Error report -
SQL Error: ORA-20001: Nu se poate modifica tabela in zilele pare ale lunilor cu numar impar
ORA-06512: at "C##ANDREI.TRIGGER_CONTROL", line 5
ORA-04088: error during execution of trigger 'C##ANDREI.TRIGGER_CONTROL'

Rollback complete.

Exercitiul 11

Cerinta: Definiti un trigger de tip LMD la nivel de linie. Declansati trigger-ul.

Rezolvare: Definiti un trigger care, la stergerea unui joc din tabela joc_video, sterge atat toate dlc-urile acestuia, cat si toate instantele in care apar acestea (i.e. recenzii, comentarii si tabelele many-to-many)

```
CREATE OR REPLACE TRIGGER delete_game_trigger
FOR DELETE ON joc_video
COMPOUND TRIGGER
  TYPE tablou_imbricat IS TABLE OF joc_video.cod_joc%TYPE;
  game_ids tablou_imbricat := tablou_imbricat();
  v_exista NUMBER;

  BEFORE EACH ROW IS
  BEGIN
    DELETE FROM comentariu
    WHERE cod_joc = :OLD.cod_joc;

    DELETE FROM recenzie
    WHERE cod_joc = :OLD.cod_joc;

    DELETE FROM utilizator_joc_video_cont
    WHERE cod_joc = :OLD.cod_joc;

    DELETE FROM dezvoltator_editor_joc_video
    WHERE cod_joc = :OLD.cod_joc;

    DELETE FROM joc_video_categorii
    WHERE cod_joc = :OLD.cod_joc;

    SELECT cod_joc
    BULK COLLECT INTO game_ids
    FROM dlc
    WHERE cod_joc_baza = :OLD.cod_joc;

    FOR i IN 1..game_ids.COUNT LOOP
      DELETE FROM comentariu
      WHERE cod_joc = game_ids(i);

      DELETE FROM recenzie
      WHERE cod_joc = game_ids(i);

      DELETE FROM utilizator_joc_video_cont
      WHERE cod_joc = game_ids(i);

      DELETE FROM dezvoltator_editor_joc_video
      WHERE cod_joc = game_ids(i);

      DELETE FROM joc_video_categorii
```

```

WHERE cod_joc = game_ids(l);

DELETE FROM dlc
WHERE cod_joc = game_ids(l);
END LOOP;
END BEFORE EACH ROW;

AFTER STATEMENT IS
BEGIN
SELECT cod_joc
BULK COLLECT INTO game_ids
FROM joc_video
WHERE tip = 'dlc';

FOR l IN 1..game_ids.COUNT LOOP
SELECT COUNT(*)
INTO v_exista
FROM dlc
WHERE cod_joc = game_ids(l);

IF v_exista = 0 THEN
DELETE FROM comentariu
WHERE cod_joc = game_ids(l);

DELETE FROM recenzie
WHERE cod_joc = game_ids(l);

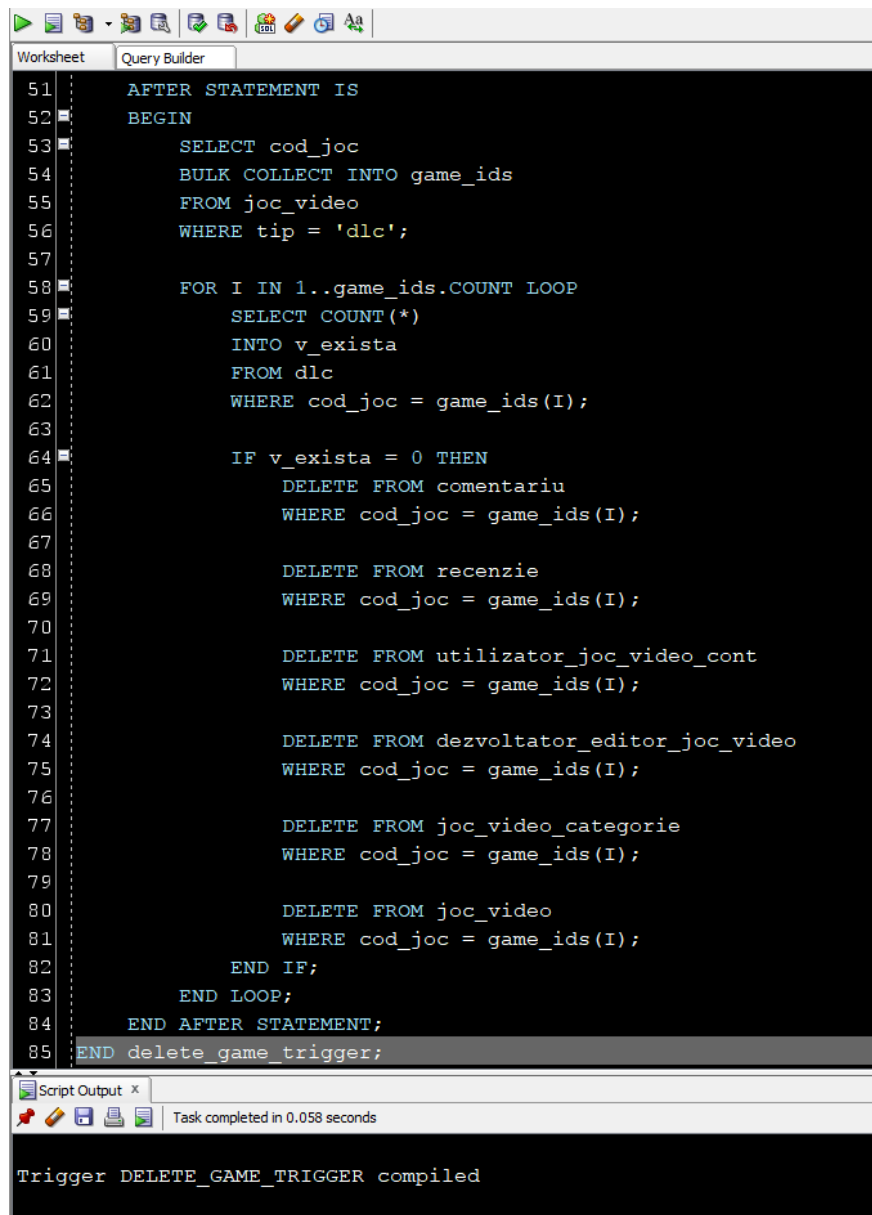
DELETE FROM utilizator_joc_video_cont
WHERE cod_joc = game_ids(l);

DELETE FROM dezvoltator_editor_joc_video
WHERE cod_joc = game_ids(l);

DELETE FROM joc_video_categorie
WHERE cod_joc = game_ids(l);

DELETE FROM joc_video
WHERE cod_joc = game_ids(l);
END IF;
END LOOP;
END AFTER STATEMENT;
END delete_game_trigger;

```



The screenshot shows a SQL Query Builder window with a script for a trigger named `delete_game_trigger`. The script is written in PL/SQL and is designed to delete data from several tables when a game is deleted. The tables involved are `comentariu`, `recenzie`, `utilizator_joc_video_cont`, `dezvoltator_editor_joc_video`, `joc_video_categorie`, and `joc_video`. The script uses a `BULK COLLECT INTO` statement to fetch game IDs from the `joc_video` table where the tip is 'dlc'. It then loops through these IDs, checking for the existence of related records in the other tables and deleting them if they exist.

```
51 AFTER STATEMENT IS
52 BEGIN
53     SELECT cod_joc
54     BULK COLLECT INTO game_ids
55     FROM joc_video
56     WHERE tip = 'dlc';
57
58     FOR I IN 1..game_ids.COUNT LOOP
59         SELECT COUNT(*)
60         INTO v_exista
61         FROM dlc
62         WHERE cod_joc = game_ids(I);
63
64         IF v_exista = 0 THEN
65             DELETE FROM comentariu
66             WHERE cod_joc = game_ids(I);
67
68             DELETE FROM recenzie
69             WHERE cod_joc = game_ids(I);
70
71             DELETE FROM utilizator_joc_video_cont
72             WHERE cod_joc = game_ids(I);
73
74             DELETE FROM dezvoltator_editor_joc_video
75             WHERE cod_joc = game_ids(I);
76
77             DELETE FROM joc_video_categorie
78             WHERE cod_joc = game_ids(I);
79
80             DELETE FROM joc_video
81             WHERE cod_joc = game_ids(I);
82         END IF;
83     END LOOP;
84 END AFTER STATEMENT;
85 END delete_game_trigger;
```

Below the script, the Script Output window shows the message: "Task completed in 0.058 seconds" and "Trigger DELETE_GAME_TRIGGER compiled".

[Datele initiale, inainte de delete](#)

Datele dupa delete

0.053 seconds

Worksheet Query Builder

```

1 DELETE FROM joc_video
2 WHERE INITCAP(nume) = INITCAP('Assassin's Creed Syndicate');
3 /
4 SELECT * FROM joc_video;
5 SELECT * FROM dlc;

```

Script Output x Task completed in 0.053 seconds

1 row deleted.

COD_JOC	NUME	DATA_LANS	DURATA	TIP
1	Life is Strange 2	27-SEP-18	16	baza
2	Dead Space Remake	27-JAN-23	11	baza
3	Alan Wake	14-MAY-10	11	baza
4	Alan Wake The Signal	12-OCT-10	1.5	dlc
5	Alan Wake The Writer	12-NOV-10	1.5	dlc
10	Tell Me Why	17-AUG-20	9.5	baza
11	World of Warcraft	23-NOV-04	250	baza
12	Need For Speed Unbound	29-NOV-22	23.5	baza
13	Pronty	19-NOV-21	7.5	baza

9 rows selected.

COD_JOC	COD_JOC_BAZA
4	3
5	3

Worksheet Query Builder

```

1 SELECT * FROM RECENZIE;

```

Query Result x All Rows Fetched: 5 in 0.002 seconds

COD_UTILIZATOR	COD_JOC	CONTINUT	SCOR	DATA_POSTARE
1	1	2 Bun jocul, dar nu e pentru mine.	3	08-JAN-24
2	4	3 Mi-a placut foarte mult, recomand!	5	09-JAN-23
3	2	10 Am pierdut prea mult timp in acest joc, mi-am facut foarte multi nervi, 10/10 recomand	5	08-JAN-24
4	3	13 Jocul este foarte bun, dar este doar pentru persoanele mai rafinate	4	01-JUN-23
5	1	13 Un joc excelent, abia astept sa se lanseze un dlc	5	17-AUG-20

Worksheet Query Builder

```

1 SELECT * FROM COMENTARIU;

```

Query Result x All Rows Fetched: 5 in 0.003 seconds

COD_COMENTARIU	COD_UTILIZATOR_RECENZIE	COD_JOC	COD_UTILIZATOR	CONTINUT
1	7	1	2	2 Si mie mi s-a parut bun jocul, 100% il recomand mai departe
2	8	1	2	3 Nu inteleg de ce nu ti-a placut, mie mi s-a parut un joc foarte bun
3	9	4	3	3 Personal nu am gasit ceva care sa ma atraga la acest joc, mi s-a parut prea plictisitor
4	11	2	10	5 Si eu am pierdut foarte mult timp in acest joc, nu am simtit efectiv cum trec orele! Foarte buna tr
5	12	3	13	2 Nu ma consider o persoana 'rafinata' si totusi nu mi s-a parut ca jocul ar fi prea slab, dar clar n

Exercitiul 12

Cerinta: Definiti un trigger de tip LDD. Declansati trigger-ul.

Rezolvare: Definiti un trigger care adauga intr-o tabela de log-uri toate actiunile de alter, create si drop care au loc, tabelul manipulat si timestamp-ul.

```

CREATE SEQUENCE secv_log
INCREMENT BY 1
START WITH 1
MAXVALUE 99999
NOCYCLE;
/
CREATE TABLE LOGS
(
  cod_log NUMBER(5) constraint pkey_log PRIMARY KEY,
  message VARCHAR2(128),
  timestamp DATE
);

```



```

/
CREATE OR REPLACE TRIGGER log_trigger
  BEFORE ALTER OR DROP OR CREATE ON SCHEMA
DECLARE
  v_message VARCHAR2(128);
BEGIN
  v_message := 'Table ' || ora_dict_obj_name || ' was ' || ora_sysevent;
  IF (ora_sysevent = 'ALTER') THEN
    v_message := v_message || 'ED';
  ELSIF (ora_sysevent = 'DROP') THEN
    v_message := v_message || 'PED';
  ELSE
    v_message := v_message || 'D';
  END IF;
  INSERT INTO logs
  VALUES (secv_log.NEXTVAL, v_message, SYSDATE);
END;

```

The screenshot shows the SQL Developer interface with the 'Query Builder' tab selected. The SQL editor contains the following code:

```

1 CREATE SEQUENCE secv_log
2 INCREMENT BY 1
3 START WITH 1
4 MAXVALUE 99999
5 NOCYCLE;
6 /

```

Below the editor, the 'Script Output' window shows the message: 'Sequence SECV_LOG created.' and indicates that the task was completed in 0.017 seconds.

The screenshot shows the SQL Developer interface with the 'Query Builder' tab selected. The SQL editor contains the following code:

```

7 CREATE TABLE LOGS
8 (
9   cod_log NUMBER(5) constraint pkey_log PRIMARY KEY,
10  message VARCHAR2(128),
11  timestamp DATE
12 );
13 /

```

Below the editor, the 'Script Output' window shows the message: 'Table LOGS created.' and indicates that the task was completed in 0.036 seconds.

The screenshot shows the SQL Developer interface with the 'Query Builder' tab active. The SQL script in the editor is as follows:

```

14 CREATE OR REPLACE TRIGGER log_trigger
15     BEFORE ALTER OR DROP OR CREATE ON SCHEMA
16 DECLARE
17     v_message VARCHAR2(128);
18 BEGIN
19     v_message := 'Table ' || ora_dict_obj_name || ' was ' || ora_sysevent;
20     IF (ora_sysevent = 'ALTER') THEN
21         v_message := v_message || 'ED';
22     ELSIF (ora_sysevent = 'DROP') THEN
23         v_message := v_message || 'PED';
24     ELSE
25         v_message := v_message || 'D';
26     END IF;
27     INSERT INTO logs
28     VALUES (secv_log.NEXTVAL, v_message, SYSDATE);
29 END;

```

Below the editor, the 'Script Output' window shows the message: "Task completed in 0.043 seconds" and "Trigger LOG_TRIGGER compiled".

The screenshot shows the SQL Developer interface with the 'Query Builder' tab active. The SQL script in the editor is as follows:

```

1 CREATE TABLE TEST
2 (
3     cod NUMBER
4 );
5 /
6 ALTER TABLE TEST ADD (denumire VARCHAR2(128));
7 /
8 DROP TABLE TEST;

```

Below the editor, the 'Script Output' window shows the messages: "Task completed in 0.063 seconds", "Table TEST created.", "Table TEST altered.", and "Table TEST dropped.".

The screenshot shows the SQL Developer interface with the 'Query Result' window active. The SQL query in the editor is:

```

1 SELECT message, TO_CHAR(timestamp, 'DD-MON-YYYY HH24:MI:SS') AS timestamp
2 FROM logs;

```

The 'Query Result' window shows the following data:

MESSAGE	TIMESTAMP
1 Table TEST was CREATED	11-JAN-2024 10:31:04
2 Table TEST was ALTERED	11-JAN-2024 10:31:04
3 Table TEST was DROPPED	11-JAN-2024 10:31:04

Below the table, the status bar indicates: "All Rows Fetched: 3 in 0.005 seconds".

Exercitiul 13

Cerinta: Definiti un pachet care sa contina toate obiectele definite in cadrul proiectului.

Rezolvare:

```
CREATE OR REPLACE PACKAGE package_13 AS
  PROCEDURE info(v_nume utilizator.nume%TYPE DEFAULT 'Neculae');
  PROCEDURE games(v_init1 VARCHAR2 DEFAULT 'A', v_init2 VARCHAR2 DEFAULT 'M');
  FUNCTION get_review_mark(v_nume utilizator.nume%TYPE DEFAULT 'Grigore', v_joc
joc_video.nume%TYPE DEFAULT 'Pronty') RETURN recenzie.scor%TYPE;
  PROCEDURE find_user(v_dezvoltator dezvoltator.nume%TYPE DEFAULT 'FunZone Games');
END package_13;
/
CREATE OR REPLACE PACKAGE BODY package_13 AS
  PROCEDURE info
  (
    v_nume utilizator.nume%TYPE DEFAULT 'Neculae'
  )
  IS
    TYPE pair IS RECORD
    (
      platform platforma.nume%TYPE,
      username cont.nume%TYPE
    );
    TYPE vector IS VARRAY(3) OF pair;
    TYPE tablou_indexat IS TABLE OF joc_video.nume%TYPE INDEX BY PLS_INTEGER;
    TYPE tablou_imbricat IS TABLE OF recenzie.continut%TYPE;

    v_accounts vector := vector();
    v_games tablou_indexat;
    v_reviews tablou_imbricat := tablou_imbricat();
    v_exista NUMBER;
  BEGIN
    SELECT COUNT(*)
    INTO v_exista
    FROM utilizator
    WHERE INITCAP(utilizator.nume) = INITCAP(v_nume);

    IF v_exista = 0 THEN
      DBMS_OUTPUT.PUT_LINE('Nu exista utilizator cu numele ' || v_nume);
      RETURN;
    END IF;

    IF v_exista > 1 THEN
      DBMS_OUTPUT.PUT_LINE('Exista mai multi utilizatori cu numele ' || v_nume);
      RETURN;
    END IF;

    SELECT DISTINCT p.nume, c.nume
    BULK COLLECT INTO v_accounts
```

```

FROM cont c
JOIN utilizator_joc_video_cont ujvc ON c.cod_cont = ujvc.cod_cont
JOIN platforma p ON c.cod_platforma = p.cod_platforma
JOIN utilizator u ON ujvc.cod_utilizator = u.cod_utilizator
WHERE INITCAP(u.ume) = INITCAP(v_ume) AND INITCAP(p.ume) IN ('Steam', 'Epic Games', 'Xbox');

DBMS_OUTPUT.PUT_LINE('-----');
IF v_accounts.COUNT = 0 THEN
    DBMS_OUTPUT.PUT_LINE('Nu exista conturi asociate utilizatorului ' || v_ume);
    DBMS_OUTPUT.PUT_LINE('-----');
ELSE
    DBMS_OUTPUT.PUT_LINE('Conturi asociate utilizatorului ' || v_ume);
    DBMS_OUTPUT.PUT_LINE('-----');
    FOR i IN 1..v_accounts.COUNT LOOP
        DBMS_OUTPUT.PUT_LINE(v_accounts(i).platform || ': ' || v_accounts(i).username);
    END LOOP;
END IF;

SELECT jv.ume
BULK COLLECT INTO v_games
FROM joc_video jv
JOIN utilizator_joc_video_cont ujvc ON jv.cod_joc = ujvc.cod_joc
JOIN utilizator u ON ujvc.cod_utilizator = u.cod_utilizator
WHERE INITCAP(u.ume) = INITCAP(v_ume);

DBMS_OUTPUT.NEW_LINE;
DBMS_OUTPUT.PUT_LINE('-----');
IF v_games.COUNT = 0 THEN
    DBMS_OUTPUT.PUT_LINE('Nu exista jocuri asociate utilizatorului ' || v_ume);
    DBMS_OUTPUT.PUT_LINE('-----');
ELSE
    DBMS_OUTPUT.PUT_LINE('Jocuri asociate utilizatorului ' || v_ume);
    DBMS_OUTPUT.PUT_LINE('-----');
    FOR i IN 1..v_games.COUNT LOOP
        DBMS_OUTPUT.PUT_LINE(v_games(i));
    END LOOP;
END IF;

SELECT r.continut
BULK COLLECT INTO v_reviews
FROM recenzie r
JOIN utilizator u ON r.cod_utilizator = u.cod_utilizator
WHERE INITCAP(u.ume) = INITCAP(v_ume);

DBMS_OUTPUT.NEW_LINE;
DBMS_OUTPUT.PUT_LINE('-----');
IF v_reviews.COUNT = 0 THEN
    DBMS_OUTPUT.PUT_LINE('Nu exista recenzii asociate utilizatorului ' || v_ume);
    DBMS_OUTPUT.PUT_LINE('-----');
ELSE
    DBMS_OUTPUT.PUT_LINE('Recenzii asociate utilizatorului ' || v_ume);
    DBMS_OUTPUT.PUT_LINE('-----');
    FOR i IN 1..v_reviews.COUNT LOOP

```

```

        DBMS_OUTPUT.PUT_LINE(v_reviews(i));
    END LOOP;
END IF;
END;

PROCEDURE games
(
    v_init1 VARCHAR2 DEFAULT 'A',
    v_init2 VARCHAR2 DEFAULT 'M'
)
IS
    TYPE tip_cursor IS REF CURSOR RETURN categorie%ROWTYPE;
    categ tip_cursor;
    CURSOR jocuri(v_categ categorie.cod_categorie%TYPE) IS
        SELECT jv.num, data_lansare
        FROM joc_video jv
        JOIN joc_video_categorie jvc ON jv.cod_joc = jvc.cod_joc
        JOIN categorie c ON jvc.cod_categorie = c.cod_categorie
        WHERE c.cod_categorie = v_categ
        ORDER BY data_lansare;
    c categorie%ROWTYPE;
    j_num, j_data joc_video.num%TYPE;
    j_data joc_video.data_lansare%TYPE;
BEGIN
    OPEN categ FOR
        SELECT *
        FROM categorie
        WHERE INITCAP(num) LIKE INITCAP(v_init1) || '%' OR INITCAP(num) LIKE INITCAP(v_init2) || '%';
    LOOP
        FETCH categ INTO c;
        EXIT WHEN categ%NOTFOUND;
        DBMS_OUTPUT.PUT_LINE('-----');
        DBMS_OUTPUT.PUT_LINE('Categorie: ' || c.num);
        DBMS_OUTPUT.PUT_LINE('-----');
        OPEN jocuri(c.cod_categorie);
        LOOP
            FETCH jocuri INTO j_num, j_data;
            EXIT WHEN jocuri%NOTFOUND;
            DBMS_OUTPUT.PUT_LINE(j_num || ' lansat pe data de ' || j_data);
        END LOOP;
        IF jocuri%ROWCOUNT = 0 THEN
            DBMS_OUTPUT.PUT_LINE('Nu exista jocuri in aceasta categorie');
        END IF;
        CLOSE jocuri;
        DBMS_OUTPUT.NEW_LINE;
    END LOOP;
    CLOSE categ;
END;

FUNCTION get_review_mark
(
    v_num utilizator.num%TYPE DEFAULT 'Grigore',
    v_joc joc_video.num%TYPE DEFAULT 'Pronty'

```

```

) RETURN recenzie.scor%TYPE
IS
    v_scor NUMBER;
    v_exista_utilizator NUMBER;
    v_exista_joc NUMBER;
    v_exista_recenzie NUMBER;
BEGIN
    SELECT COUNT(*)
    INTO v_exista_utilizator
    FROM utilizator
    WHERE INITCAP(utilizator.nume) = INITCAP(v_nume);

    IF v_exista_utilizator = 0 THEN
        RAISE_APPLICATION_ERROR(-20001, 'Nu exista utilizator cu numele ' || v_nume);
    END IF;

    IF v_exista_utilizator > 1 then
        RAISE_APPLICATION_ERROR(-20002, 'Exista mai multi utilizatori cu numele ' || v_nume);
    END IF;

    SELECT COUNT(*)
    INTO v_exista_joc
    FROM joc_video
    WHERE INITCAP(joc_video.nume) = INITCAP(v_joc);

    IF v_exista_joc = 0 THEN
        RAISE_APPLICATION_ERROR(-20003, 'Nu exista joc cu numele ' || v_joc);
    END IF;

    IF v_exista_joc > 1 then
        RAISE_APPLICATION_ERROR(-20004, 'Exista mai multe jocuri cu numele ' || v_joc);
    END IF;

    SELECT COUNT(*)
    INTO v_exista_recenzie
    FROM recenzie
    JOIN utilizator ON utilizator.cod_utilizator = recenzie.cod_utilizator
    JOIN joc_video ON joc_video.cod_joc = recenzie.cod_joc
    WHERE INITCAP(utilizator.nume) = INITCAP(v_nume) AND INITCAP(joc_video.nume) = INITCAP(v_joc);

    IF v_exista_recenzie = 0 THEN
        RAISE_APPLICATION_ERROR(-20005, 'Nu exista recenzie pentru jocul ' || v_joc || ' de catre
        utilizatorul ' || v_nume);
    END IF;

    SELECT scor
    INTO v_scor
    FROM recenzie
    JOIN utilizator ON utilizator.cod_utilizator = recenzie.cod_utilizator
    JOIN joc_video ON joc_video.cod_joc = recenzie.cod_joc
    WHERE INITCAP(utilizator.nume) = INITCAP(v_nume) AND INITCAP(joc_video.nume) = INITCAP(v_joc);

    RETURN v_scor;

```

```

END;

PROCEDURE find_user
(
    v_dezvoltator dezvoltator.nume%TYPE DEFAULT 'FunZone Games'
)
IS
    v_exista NUMBER;
    v_max NUMBER;
    v_utilizator VARCHAR2(128);
BEGIN
    SELECT COUNT(*)
    INTO v_exista
    FROM dezvoltator
    WHERE INITCAP(dezvoltator.nume) = INITCAP(v_dezvoltator);

    IF v_exista = 0 THEN
        RAISE_APPLICATION_ERROR(-20001, 'Nu exista dezvoltator cu numele ' || v_dezvoltator);
    END IF;

    IF v_exista > 1 THEN
        RAISE_APPLICATION_ERROR(-20002, 'Exista mai multi dezvoltator cu numele ' || v_dezvoltator);
    END IF;

    SELECT MAX(nr_jocuri)
    INTO v_max
    FROM
    (
        SELECT COUNT(*) AS nr_jocuri
        FROM joc_video jv
        JOIN dezvoltator_editor_joc_video dejv ON jv.cod_joc = dejv.cod_joc
        JOIN dezvoltator d ON dejv.cod_dezvoltator = d.cod_dezvoltator
        WHERE INITCAP(d.nume) = INITCAP(v_dezvoltator)
        GROUP BY d.nume
    );

    SELECT nume || ' ' || prenume
    INTO v_utilizator
    FROM
    (
        SELECT u.nume, u.prenume, COUNT(*) AS nr_jocuri
        FROM joc_video jv
        JOIN dezvoltator_editor_joc_video dejv ON jv.cod_joc = dejv.cod_joc
        JOIN dezvoltator d ON dejv.cod_dezvoltator = d.cod_dezvoltator
        JOIN utilizator_joc_video_cont ujvc ON jv.cod_joc = ujvc.cod_joc
        JOIN utilizator u ON ujvc.cod_utilizator = u.cod_utilizator
        WHERE INITCAP(d.nume) = INITCAP(v_dezvoltator)
        GROUP BY u.nume, u.prenume
        HAVING COUNT(*) = v_max
    );

    DBMS_OUTPUT.PUT_LINE('Utilizatorul care detine cele mai multe jocuri de la dezvoltatorul ' ||
v_dezvoltator || ' este ' || v_utilizator);

```

EXCEPTION

WHEN NO_DATA_FOUND THEN

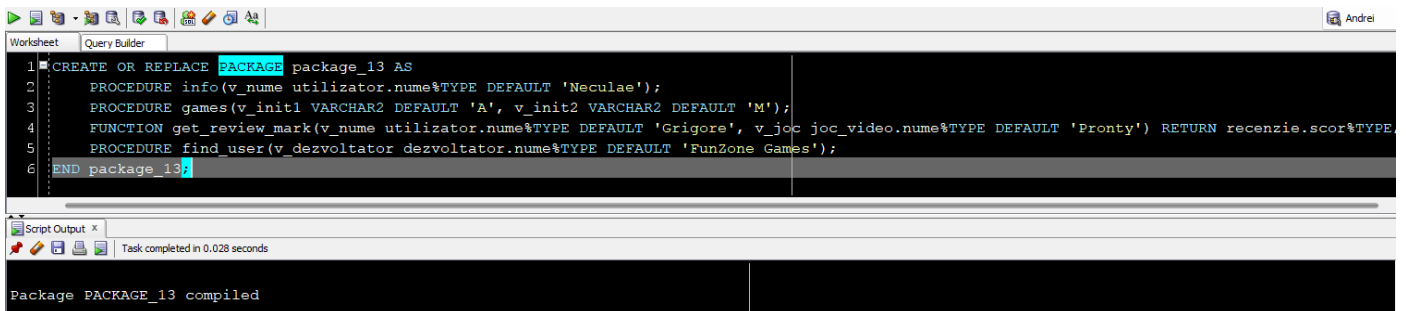
```
DBMS_OUTPUT.PUT_LINE('Nu exista utilizator care detine jocuri de la dezvoltatorul ' ||  
v_dezvoltator);
```

WHEN TOO_MANY_ROWS THEN

```
DBMS_OUTPUT.PUT_LINE('Exista mai multi utilizatori care detin numarul maxim de jocuri de la  
dezvoltatorul ' || v_dezvoltator);
```

END;

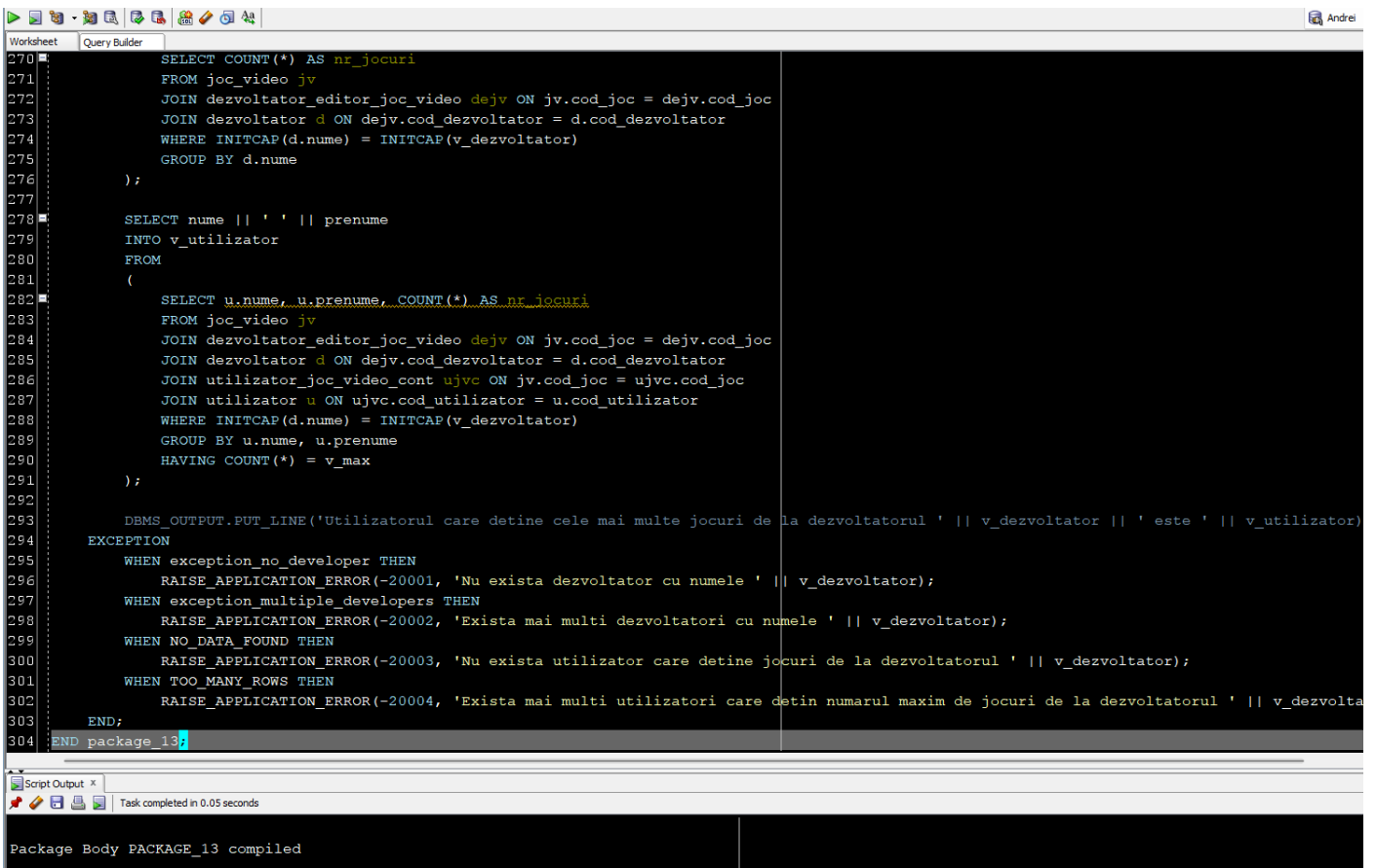
END package_13;



The screenshot shows the SQL Developer interface. The 'Query Builder' tab is active, displaying the following SQL code:

```
1 CREATE OR REPLACE PACKAGE package_13 AS  
2   PROCEDURE info(v_nume utilizator.nume%TYPE DEFAULT 'Neculae');  
3   PROCEDURE games(v_init1 VARCHAR2 DEFAULT 'A', v_init2 VARCHAR2 DEFAULT 'M');  
4   FUNCTION get_review_mark(v_nume utilizator.nume%TYPE DEFAULT 'Grigore', v_joc joc_video.nume%TYPE DEFAULT 'Pronty') RETURN recenzie.scor%TYPE;  
5   PROCEDURE find_user(v_dezvoltator dezvoltator.nume%TYPE DEFAULT 'FunZone Games');  
6 END package_13;
```

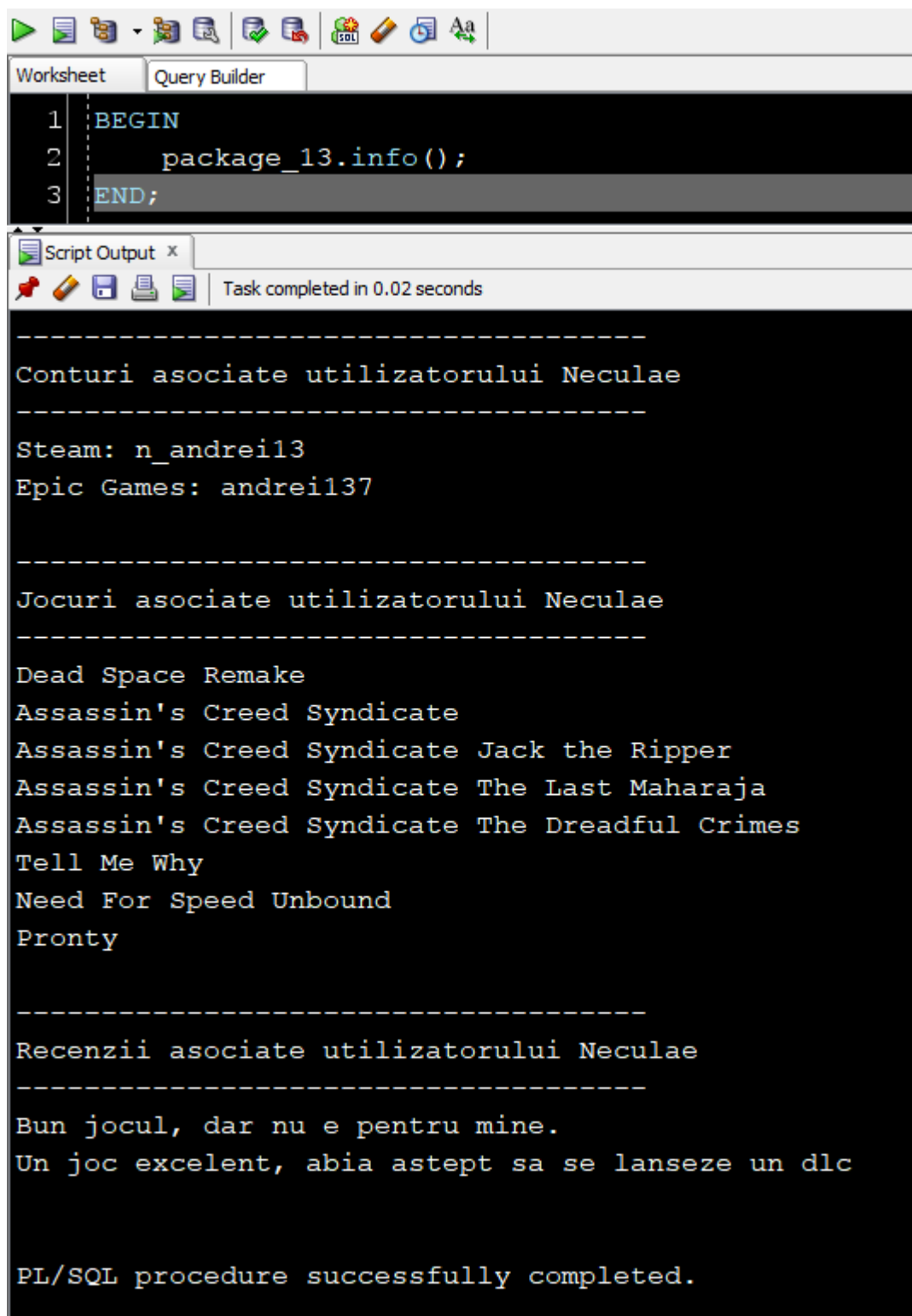
The 'Script Output' tab is also visible, showing the message: 'Task completed in 0.028 seconds' and 'Package PACKAGE_13 compiled'.



The screenshot shows the SQL Developer interface with a more complex SQL script in the 'Query Builder' tab:

```
270 SELECT COUNT(*) AS nr_jocuri  
271 FROM joc_video jv  
272 JOIN dezvoltator_editor_joc_video dejv ON jv.cod_joc = dejv.cod_joc  
273 JOIN dezvoltator d ON dejv.cod_dezvoltator = d.cod_dezvoltator  
274 WHERE INITCAP(d.nume) = INITCAP(v_dezvoltator)  
275 GROUP BY d.nume  
276 );  
277  
278 SELECT nume || ' ' || prenume  
279 INTO v_utilizator  
280 FROM  
281 (  
282   SELECT u.nume, u.prenume, COUNT(*) AS nr_jocuri  
283   FROM joc_video jv  
284   JOIN dezvoltator_editor_joc_video dejv ON jv.cod_joc = dejv.cod_joc  
285   JOIN dezvoltator d ON dejv.cod_dezvoltator = d.cod_dezvoltator  
286   JOIN utilizator_joc_video_cont ujvc ON jv.cod_joc = ujvc.cod_joc  
287   JOIN utilizator u ON ujvc.cod_utilizator = u.cod_utilizator  
288   WHERE INITCAP(d.nume) = INITCAP(v_dezvoltator)  
289   GROUP BY u.nume, u.prenume  
290   HAVING COUNT(*) = v_max  
291 );  
292  
293 DBMS_OUTPUT.PUT_LINE('Utilizatorul care detine cele mai multe jocuri de la dezvoltatorul ' || v_dezvoltator || ' este ' || v_utilizator);  
294 EXCEPTION  
295 WHEN exception_no_developer THEN  
296   RAISE_APPLICATION_ERROR(-20001, 'Nu exista dezvoltator cu numele ' || v_dezvoltator);  
297 WHEN exception_multiple_developers THEN  
298   RAISE_APPLICATION_ERROR(-20002, 'Exista mai multi dezvoltatori cu numele ' || v_dezvoltator);  
299 WHEN NO_DATA_FOUND THEN  
300   RAISE_APPLICATION_ERROR(-20003, 'Nu exista utilizator care detine jocuri de la dezvoltatorul ' || v_dezvoltator);  
301 WHEN TOO_MANY_ROWS THEN  
302   RAISE_APPLICATION_ERROR(-20004, 'Exista mai multi utilizatori care detin numarul maxim de jocuri de la dezvoltatorul ' || v_dezvolta  
303 END;  
304 END package_13;
```

The 'Script Output' tab shows the message: 'Task completed in 0.05 seconds' and 'Package Body PACKAGE_13 compiled'.



The screenshot shows a SQL query editor window with a toolbar at the top. Below the toolbar are two tabs: 'Worksheet' and 'Query Builder'. The 'Worksheet' tab is active, displaying a SQL script with three lines: '1 BEGIN', '2 package_13.info();', and '3 END;'. Below the script editor is a 'Script Output' window. It has a toolbar with icons for pin, edit, save, print, and a status bar that says 'Task completed in 0.02 seconds'. The output window contains the following text: a separator line, 'Conturi asociate utilizatorului Neculae', another separator line, 'Steam: n_andrei13', 'Epic Games: andrei137', a third separator line, 'Jocuri asociate utilizatorului Neculae', a fourth separator line, a list of game titles ('Dead Space Remake', 'Assassin's Creed Syndicate', 'Assassin's Creed Syndicate Jack the Ripper', 'Assassin's Creed Syndicate The Last Maharaja', 'Assassin's Creed Syndicate The Dreadful Crimes', 'Tell Me Why', 'Need For Speed Unbound', 'Pronty'), a fifth separator line, 'Recenzii asociate utilizatorului Neculae', a sixth separator line, two lines of user feedback ('Bun jocul, dar nu e pentru mine.', 'Un joc excelent, abia astept sa se lanseze un dlc'), and finally 'PL/SQL procedure successfully completed.'

```
1 BEGIN
2     package_13.info();
3 END;
```

Script Output x
Task completed in 0.02 seconds

Conturi asociate utilizatorului Neculae

Steam: n_andrei13
Epic Games: andrei137

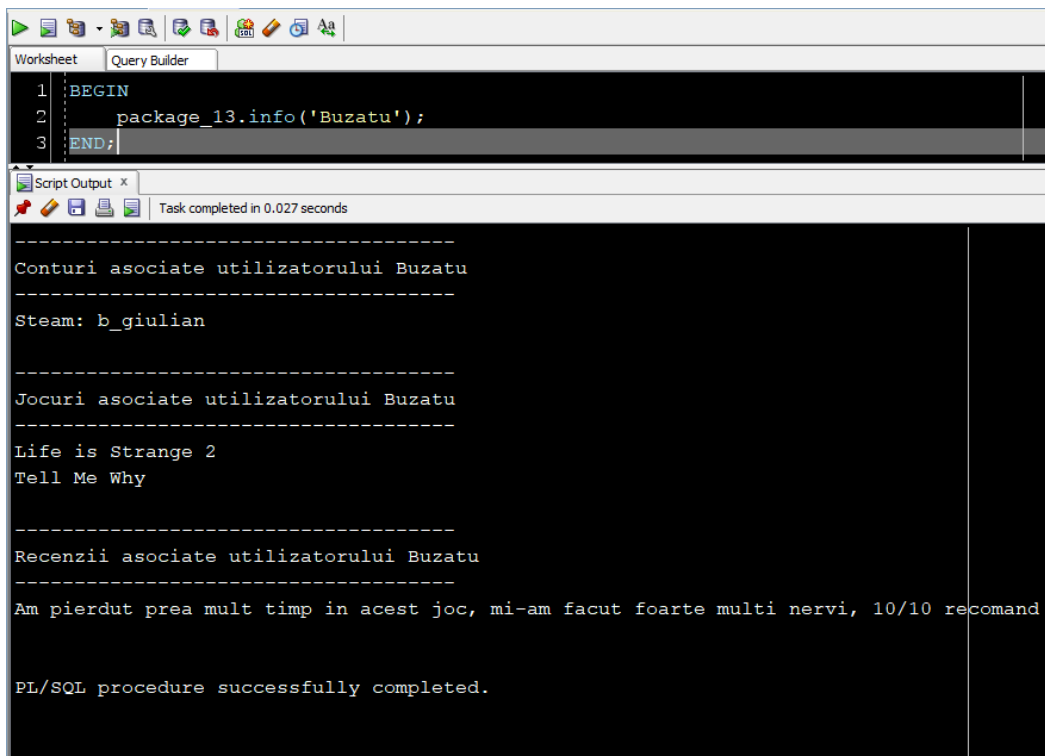
Jocuri asociate utilizatorului Neculae

Dead Space Remake
Assassin's Creed Syndicate
Assassin's Creed Syndicate Jack the Ripper
Assassin's Creed Syndicate The Last Maharaja
Assassin's Creed Syndicate The Dreadful Crimes
Tell Me Why
Need For Speed Unbound
Pronty

Recenzii asociate utilizatorului Neculae

Bun jocul, dar nu e pentru mine.
Un joc excelent, abia astept sa se lanseze un dlc

PL/SQL procedure successfully completed.



The screenshot shows the SQL Developer interface with the 'Query Builder' tab active. The SQL editor contains a PL/SQL block that calls the `package_13.info` procedure with the parameter 'Buzatu'. The 'Script Output' window below shows the execution results, which include the user's associated accounts, games, and reviews.

```
1 BEGIN
2   package_13.info('Buzatu');
3 END;
```

Task completed in 0.027 seconds

Conturi asociate utilizatorului Buzatu

Steam: b_giulian

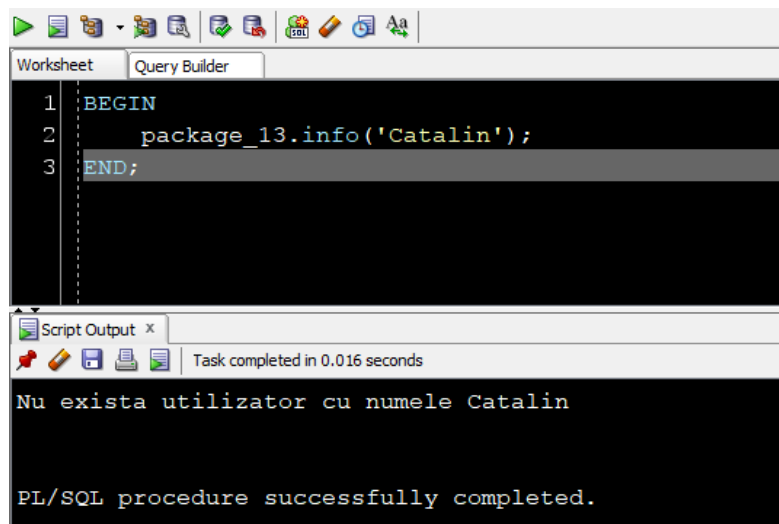
Jocuri asociate utilizatorului Buzatu

Life is Strange 2
Tell Me Why

Recenzii asociate utilizatorului Buzatu

Am pierdut prea mult timp in acest joc, mi-am facut foarte multi nervi, 10/10 recomand

PL/SQL procedure successfully completed.



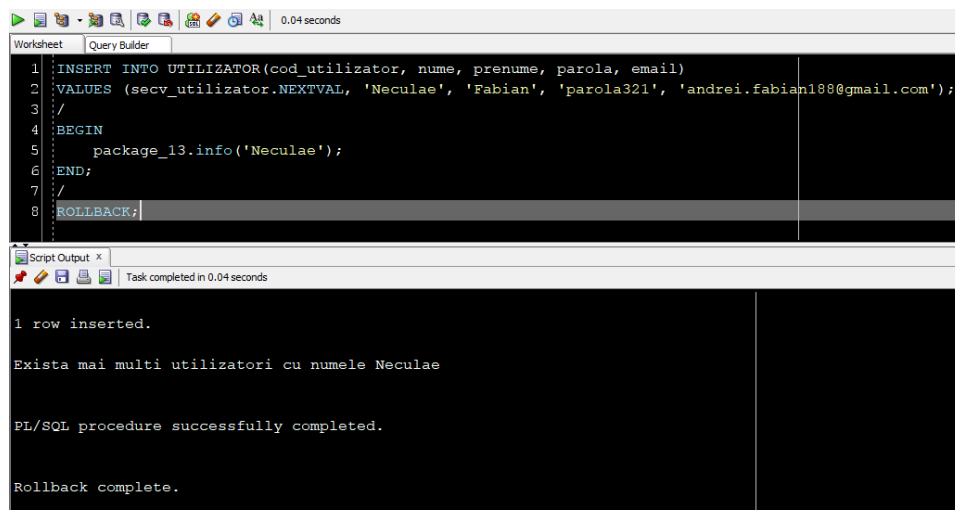
The screenshot shows the SQL Developer interface with the 'Query Builder' tab active. The SQL editor contains a PL/SQL block that calls the `package_13.info` procedure with the parameter 'Catalin'. The 'Script Output' window below shows the execution results, which indicate that no user with the name 'Catalin' exists.

```
1 BEGIN
2   package_13.info('Catalin');
3 END;
```

Task completed in 0.016 seconds

Nu exista utilizator cu numele Catalin

PL/SQL procedure successfully completed.



The screenshot shows the SQL Developer interface with the 'Query Builder' tab active. The SQL editor contains an `INSERT` statement followed by a PL/SQL block that calls the `package_13.info` procedure with the parameter 'Neculae'. The 'Script Output' window below shows the execution results, which include the insertion of a new user and the execution of the `info` procedure.

```
1 INSERT INTO UTILIZATOR(cod_utilizator, nume, prenume, parola, email)
2 VALUES (seqv_utilizator.NEXTVAL, 'Neculae', 'Fabian', 'parola321', 'andrei.fabian188@gmail.com');
3 /
4 BEGIN
5   package_13.info('Neculae');
6 END;
7 /
8 ROLLBACK;
```

Task completed in 0.04 seconds

1 row inserted.

Exista mai multi utilizatori cu numele Neculae

PL/SQL procedure successfully completed.

Rollback complete.

```

Worksheet  Query Builder
1 BEGIN
2 package_13.games();
3 END;

```

Script Output x Task completed in 0.017 seconds

```

Categorie: Actiune
-----
Alan Wake lansat pe data de 14-MAY-10
Alan Wake The Signal lansat pe data de 12-OCT-10
Alan Wake The Writer lansat pe data de 12-NOV-10
Assassin's Creed Syndicate lansat pe data de 23-OCT-15
Assassin's Creed Syndicate Jack the Ripper lansat pe data de 15-DEC-15
Assassin's Creed Syndicate The Last Maharaja lansat pe data de 01-MAR-16
Assassin's Creed Syndicate The Dreadful Crimes lansat pe data de 11-APR-16
Dead Space Remake lansat pe data de 27-JAN-23

-----
Categorie: Aventura
-----
Alan Wake lansat pe data de 14-MAY-10
Alan Wake The Signal lansat pe data de 12-OCT-10
Alan Wake The Writer lansat pe data de 12-NOV-10
Assassin's Creed Syndicate lansat pe data de 23-OCT-15
Assassin's Creed Syndicate Jack the Ripper lansat pe data de 15-DEC-15
Assassin's Creed Syndicate The Last Maharaja lansat pe data de 01-MAR-16
Assassin's Creed Syndicate The Dreadful Crimes lansat pe data de 11-APR-16
Life is Strange 2 lansat pe data de 27-SEP-18
Tell Me Why lansat pe data de 17-AUG-20
Dead Space Remake lansat pe data de 27-JAN-23

-----
Categorie: MMORPG
-----
World of Warcraft lansat pe data de 23-NOV-04

-----
Categorie: Metroidvania
-----
Pronty lansat pe data de 19-NOV-21

```

```

Worksheet  Query Builder
1 BEGIN
2 package_13.games(2);
3 END;

```

Script Output x Task completed in 0.016 seconds

```

Categorie: Drama
-----
Alan Wake lansat pe data de 14-MAY-10
Alan Wake The Signal lansat pe data de 12-OCT-10
Alan Wake The Writer lansat pe data de 12-NOV-10
Life is Strange 2 lansat pe data de 27-SEP-18
Tell Me Why lansat pe data de 17-AUG-20

-----
Categorie: Horror
-----
Dead Space Remake lansat pe data de 27-JAN-23

-----
Categorie: MMORPG
-----
World of Warcraft lansat pe data de 23-NOV-04

-----
Categorie: Metroidvania
-----
Pronty lansat pe data de 19-NOV-21

-----
Categorie: Science-fiction
-----
Dead Space Remake lansat pe data de 27-JAN-23

-----
Categorie: Thriller
-----
Alan Wake lansat pe data de 14-MAY-10
Alan Wake The Signal lansat pe data de 12-OCT-10
Alan Wake The Writer lansat pe data de 12-NOV-10

```

The screenshot shows the SQL Developer interface with the 'Query Builder' tab active. The SQL script in the editor consists of three lines: `BEGIN`, `package_13.games(3, 'h', 't');`, and `END;`. Below the editor, the 'Script Output' window displays the results of the procedure execution. It shows two categories of games: 'Thriller' and 'Horror'. Under 'Thriller', three games are listed with their release dates: 'Alan Wake' (14-MAY-10), 'Alan Wake The Signal' (12-OCT-10), and 'Alan Wake The Writer' (12-NOV-10). Under 'Horror', one game is listed: 'Dead Space Remake' (27-JAN-23). The output concludes with the message 'PL/SQL procedure successfully completed.'

```
1 BEGIN
2     package_13.games(3, 'h', 't');
3 END;
```

Script Output x Task completed in 0.018 seconds

Categorie: Thriller

Alan Wake lansat pe data de 14-MAY-10
Alan Wake The Signal lansat pe data de 12-OCT-10
Alan Wake The Writer lansat pe data de 12-NOV-10

Categorie: Horror

Dead Space Remake lansat pe data de 27-JAN-23

PL/SQL procedure successfully completed.

The screenshot shows the SQL Developer interface with the 'Query Builder' tab active. The SQL script in the editor consists of three lines: `BEGIN`, `DBMS_OUTPUT.PUT_LINE('Scor: ' || package_13.get_review_mark('Neculae', 'Dead Space Remake') || '/5');`, and `END;`. Below the editor, the 'Script Output' window displays the results of the procedure execution. It shows a single line of output: 'Scor: 3/5'. The output concludes with the message 'PL/SQL procedure successfully completed.'

```
1 BEGIN
2     DBMS_OUTPUT.PUT_LINE('Scor: ' || package_13.get_review_mark('Neculae', 'Dead Space Remake') || '/5');
3 END;
```

Script Output x Task completed in 0.04 seconds

Scor: 3/5

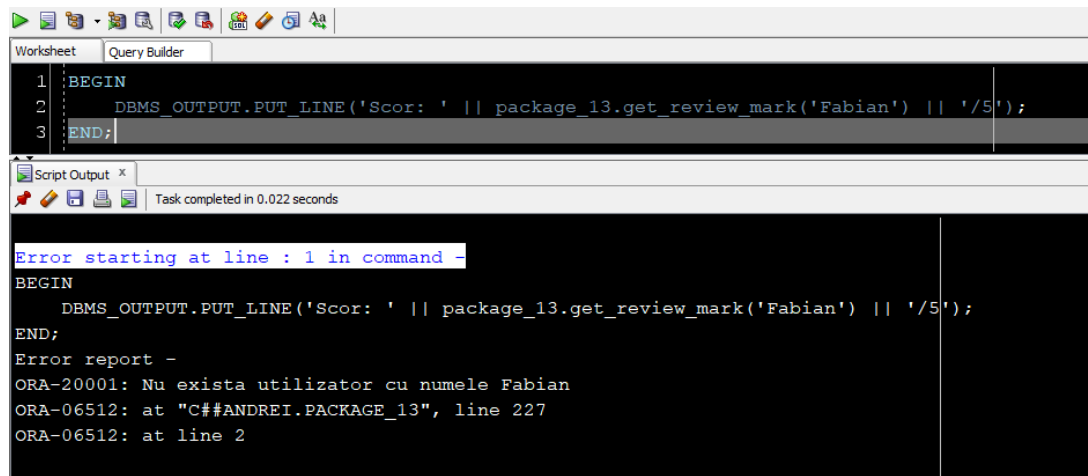
PL/SQL procedure successfully completed.

The screenshot shows the SQL Developer interface with the 'Query Builder' tab active. The SQL script in the editor consists of three lines: `BEGIN`, `DBMS_OUTPUT.PUT_LINE('Scor: ' || package_13.get_review_mark() || '/5');`, and `END;`. Below the editor, the 'Script Output' window displays an error message. The error starts at line 1 in the command and reports that there is no review for the game 'Pronty' by user 'Grigore'. The error details include the error number 'ORA-20005' and the location 'C##ANDREI.PACKAGE_13', line 235.

```
1 BEGIN
2     DBMS_OUTPUT.PUT_LINE('Scor: ' || package_13.get_review_mark() || '/5');
3 END;
```

Script Output x Task completed in 0.038 seconds

Error starting at line : 1 in command -
BEGIN
 DBMS_OUTPUT.PUT_LINE('Scor: ' || package_13.get_review_mark() || '/5');
END;
Error report -
ORA-20005: Nu exista recenzie pentru jocul Pronty de catre utilizatorul Grigore
ORA-06512: at "C##ANDREI.PACKAGE_13", line 235
ORA-06512: at line 2



Worksheet Query Builder

```
1 BEGIN
2     DBMS_OUTPUT.PUT_LINE('Scor: ' || package_13.get_review_mark('Fabian') || '/5');
3 END;
```

Script Output x Task completed in 0.022 seconds

Error starting at line : 1 in command -

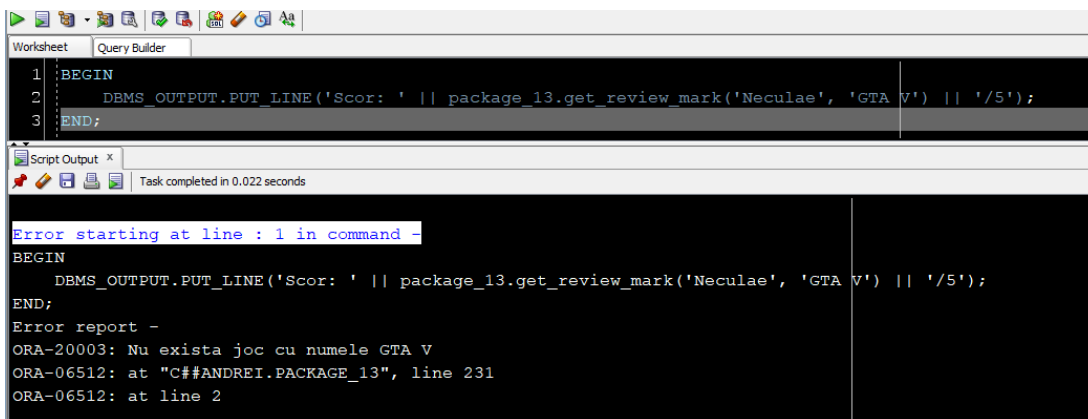
```
BEGIN
    DBMS_OUTPUT.PUT_LINE('Scor: ' || package_13.get_review_mark('Fabian') || '/5');
END;
```

Error report -

ORA-20001: Nu exista utilizator cu numele Fabian

ORA-06512: at "C##ANDREI.PACKAGE_13", line 227

ORA-06512: at line 2



Worksheet Query Builder

```
1 BEGIN
2     DBMS_OUTPUT.PUT_LINE('Scor: ' || package_13.get_review_mark('Neculae', 'GTA V') || '/5');
3 END;
```

Script Output x Task completed in 0.022 seconds

Error starting at line : 1 in command -

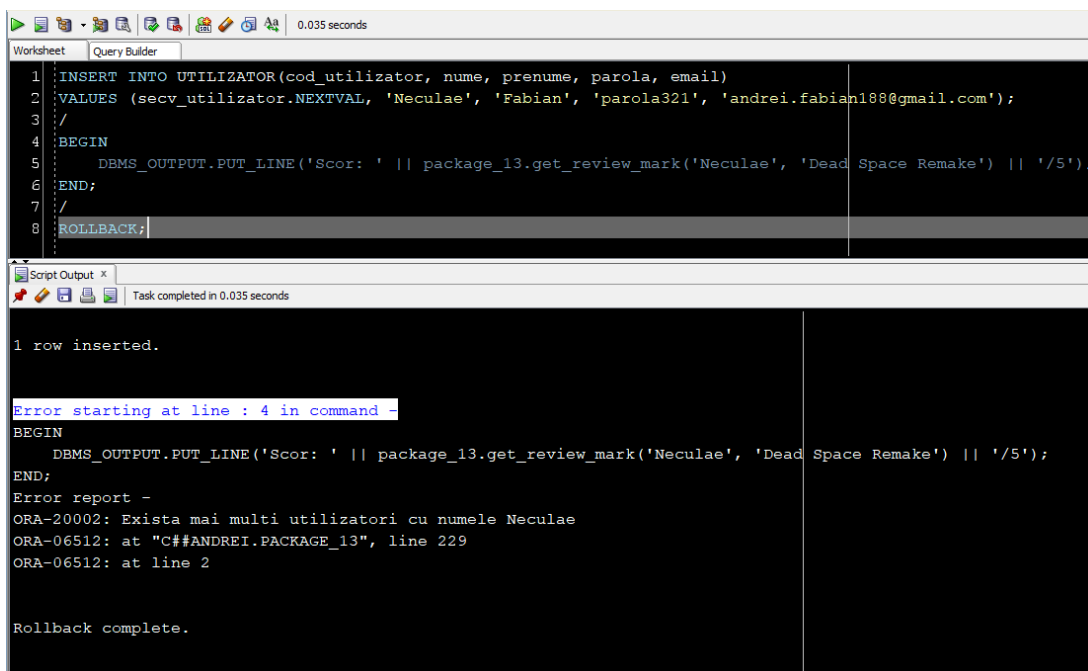
```
BEGIN
    DBMS_OUTPUT.PUT_LINE('Scor: ' || package_13.get_review_mark('Neculae', 'GTA V') || '/5');
END;
```

Error report -

ORA-20003: Nu exista joc cu numele GTA V

ORA-06512: at "C##ANDREI.PACKAGE_13", line 231

ORA-06512: at line 2



Worksheet Query Builder 0.035 seconds

```
1 INSERT INTO UTILIZATOR(cod_utilizator, nume, prenume, parola, email)
2 VALUES (secv_utilizator.NEXTVAL, 'Neculae', 'Fabian', 'parola321', 'andrei.fabian18@gmail.com');
3 /
4 BEGIN
5     DBMS_OUTPUT.PUT_LINE('Scor: ' || package_13.get_review_mark('Neculae', 'Dead Space Remake') || '/5');
6 END;
7 /
8 ROLLBACK;
```

Script Output x Task completed in 0.035 seconds

1 row inserted.

Error starting at line : 4 in command -

```
BEGIN
    DBMS_OUTPUT.PUT_LINE('Scor: ' || package_13.get_review_mark('Neculae', 'Dead Space Remake') || '/5');
END;
```

Error report -

ORA-20002: Exista mai multi utilizatori cu numele Neculae

ORA-06512: at "C##ANDREI.PACKAGE_13", line 229

ORA-06512: at line 2

Rollback complete.

```
Worksheet | Query Builder
1 :INSERT INTO JOC_VIDEO
2 :VALUES (secv_joc_video.NEXTVAL, 'Life is Strange 2', '27-SEP-2023', '16', 'dlc');
3 :/
4 :BEGIN
5 :    DBMS_OUTPUT.PUT_LINE('Scor: ' || package_13.get_review_mark('Buzatu', 'Life is Strange 2') || '/5');
6 :END;
7 :/
8 :ROLLBACK;
```

Script Output x | Task completed in 0.041 seconds

1 row inserted.

Error starting at line : 4 in command -

```
BEGIN
  DBMS_OUTPUT.PUT_LINE('Scor: ' || package_13.get_review_mark('Buzatu', 'Life is Strange 2') || '/5');
END;
Error report -
ORA-20004: Exista mai multe jocuri cu numele Life is Strange 2
ORA-06512: at "C##ANDREI.PACKAGE_13", line 233
ORA-06512: at line 2

Rollback complete.
```

```
Worksheet | Query Builder
1 :BEGIN
2 :    package_13.find_user('Ubisoft Quebec');
3 :END;
```

Script Output x | Task completed in 0.027 seconds

Utilizatorul care detine cele mai multe jocuri de la dezvoltatorul Ubisoft Quebec este Neculae Andrei

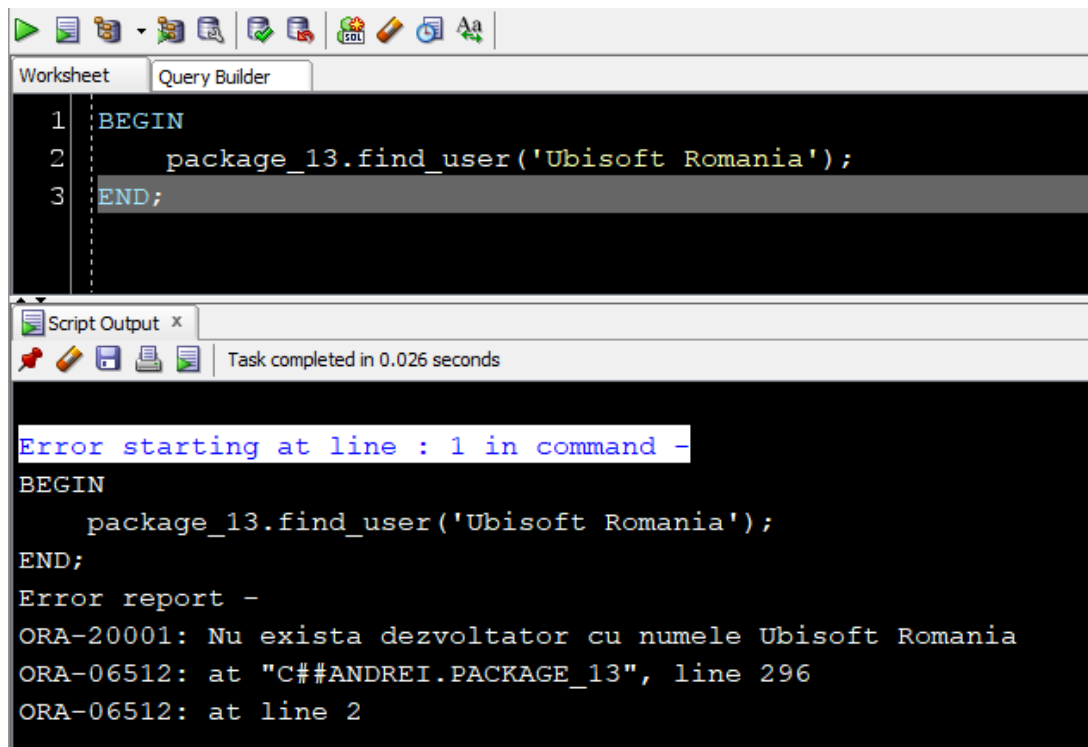
PL/SQL procedure successfully completed.

```
Worksheet | Query Builder
1 :BEGIN
2 :    package_13.find_user();
3 :END;
```

Script Output x | Task completed in 0.04 seconds

Error starting at line : 1 in command -

```
BEGIN
  package_13.find_user();
END;
Error report -
ORA-20004: Exista mai multi utilizatori care detin numarul maxim de jocuri de la dezvoltatorul FunZone Games
ORA-06512: at "C##ANDREI.PACKAGE_13", line 302
ORA-06512: at line 2
```



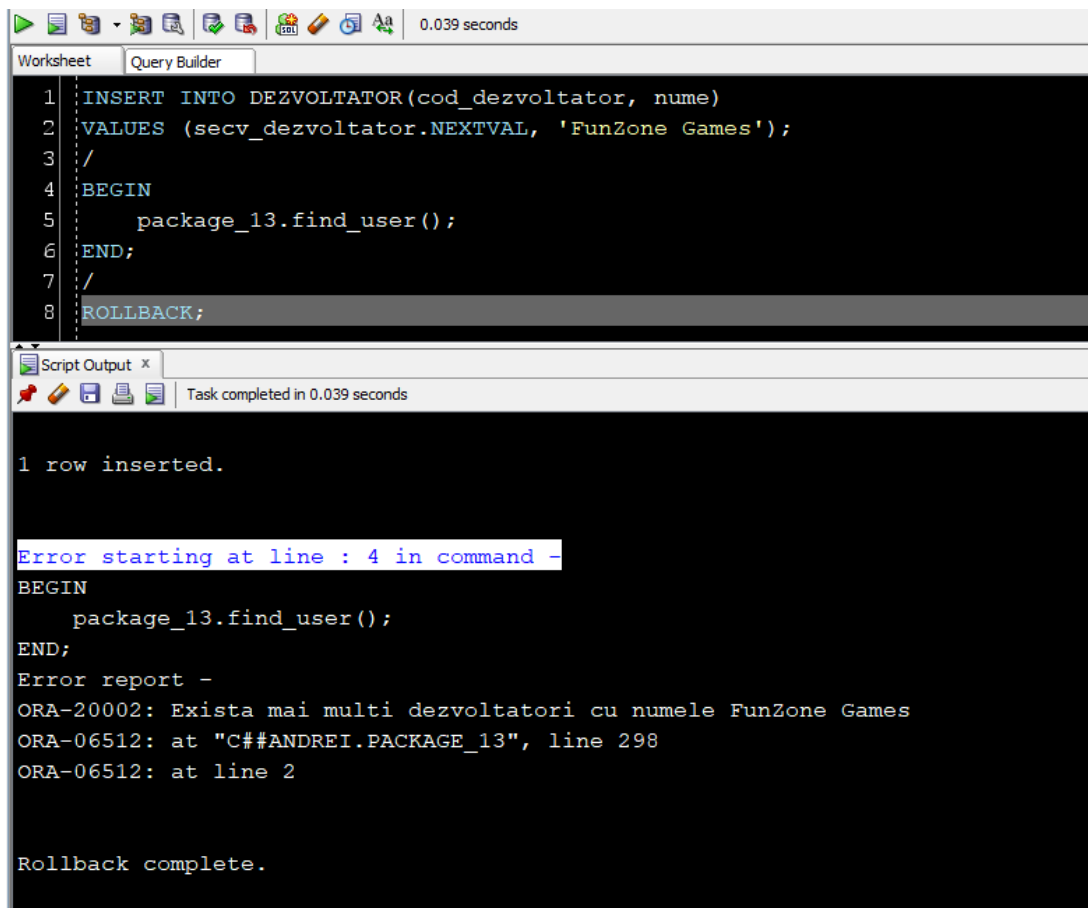
The screenshot shows the SQL Developer interface with the 'Query Builder' tab active. The script editor contains the following SQL code:

```
1 BEGIN
2     package_13.find_user('Ubisoft Romania');
3 END;
```

The 'Script Output' window below shows the execution results:

```
Task completed in 0.026 seconds

Error starting at line : 1 in command -
BEGIN
    package_13.find_user('Ubisoft Romania');
END;
Error report -
ORA-20001: Nu exista dezvoltator cu numele Ubisoft Romania
ORA-06512: at "C##ANDREI.PACKAGE_13", line 296
ORA-06512: at line 2
```



The screenshot shows the SQL Developer interface with the 'Query Builder' tab active. The script editor contains the following SQL code:

```
1 INSERT INTO DEZVOLTATOR(cod_dezvoltator, nume)
2 VALUES (secv_dezvoltator.NEXTVAL, 'FunZone Games');
3 /
4 BEGIN
5     package_13.find_user();
6 END;
7 /
8 ROLLBACK;
```

The 'Script Output' window below shows the execution results:

```
Task completed in 0.039 seconds

1 row inserted.

Error starting at line : 4 in command -
BEGIN
    package_13.find_user();
END;
Error report -
ORA-20002: Exista mai multi dezvoltatori cu numele FunZone Games
ORA-06512: at "C##ANDREI.PACKAGE_13", line 298
ORA-06512: at line 2

Rollback complete.
```

The screenshot shows the Oracle SQL Developer interface. The top pane, titled 'Query Builder', contains the following SQL script:

```
1 INSERT INTO DEZVOLTATOR(cod_dezvoltator, nume)
2 VALUES (secv_dezvoltator.NEXTVAL, 'FromSoftware');
3 /
4 BEGIN
5     package_13.find_user('FromSoftware');
6 END;
7 /
8 ROLLBACK;
```

The bottom pane, titled 'Script Output', shows the execution results. It indicates that 1 row was inserted successfully. However, an error occurred starting at line 4 in the command. The error report shows the following messages:

```
Error starting at line : 4 in command -
BEGIN
    package_13.find_user('FromSoftware');
END;
Error report -
ORA-20003: Nu exista utilizator care detine jocuri de la dezvoltatorul FromSoftware
ORA-06512: at "C##ANDREI.PACKAGE_13", line 300
ORA-06512: at line 2

Rollback complete.
```

Exercitiul 14

Cerinta: Definiti un pachet care sa includa tipuri de date complexe si obiecte necesare unui flux de actiuni integrate, specifice bazei de date definite (minim 2 tipuri de date, minim 2 functii, minim 2 proceduri).

Rezolvare: Definiti un pachet care sa contina urmatoarele:

- O procedura care sa afiseze numele, tipul (baza/dlc), dezvoltatorul, editorul si scorul tuturor jocurilor care fac parte dintr-o categorie data ca parametru;
- O procedura care insereaza intr-un tabel numele, prenumele si jocurile pe care le detine un utilizator. Numele si prenumele sunt date ca parametru;
- O functie care primeste ca parametrii numele unui utilizator si returneaza numele, prenumele si toate conturile acestuia, sub forma Platforma-Username-Parola si un bool care determina daca parolele sunt cenzurate sau nu.
- O functie care returneaza numarul de jocuri detinute de cel putin n utilizatori, unde n este dat ca prim parametru, si produse de catre dezvoltatorul al carui nume este dat ca al doilea parametru.

```
CREATE OR REPLACE TYPE tablou_imbricat_joc AS TABLE OF VARCHAR2(50);
/
CREATE TABLE info_utilizator
(
    nume VARCHAR2(30),
    prenume VARCHAR2(30),
    jocuri tablou_imbricat_joc
) NESTED TABLE jocuri STORE AS tablou_jocuri;
/
CREATE OR REPLACE PACKAGE package_14 AS
```



```

TYPE tuplu_joc IS RECORD
(
    nume_joc joc_video.nume%TYPE,
    tip_joc joc_video.tip%TYPE,
    nume_dezvoltator dezvoltator.nume%TYPE,
    nume_editor editor.nume%TYPE
);
TYPE tablou_indexat_joc IS TABLE OF tuplu_joc INDEX BY PLS_INTEGER;

TYPE tuplu_info IS RECORD
(
    username cont.nume%TYPE,
    parola cont.parola%TYPE,
    nume_platforma platforma.nume%TYPE
);
TYPE tablou_imbricat_info IS TABLE OF tuplu_info;
TYPE info IS RECORD
(
    nume utilizator.nume%TYPE,
    prenume utilizator.prenume%TYPE,
    conturi tablou_imbricat_info
);

PROCEDURE category_games_details(v_categorie categorie.nume%TYPE DEFAULT 'Drama');
PROCEDURE insert_values(v_nume utilizator.nume%TYPE DEFAULT 'Neculae', v_prenume
utilizator.prenume%TYPE DEFAULT 'Andrei');
FUNCTION get_info(v_nume utilizator.nume%TYPE DEFAULT 'Neculae', v_cenzura NUMBER DEFAULT 1)
RETURN info;
FUNCTION nr_games(v_min NUMBER DEFAULT 1, v_dezvoltator dezvoltator.nume%TYPE DEFAULT 'DONTNOD
Entertainment') RETURN NUMBER;
END;
/
CREATE OR REPLACE PACKAGE BODY package_14 AS
PROCEDURE category_games_details
(
    v_categorie categorie.nume%TYPE DEFAULT 'Drama'
)
IS
    v_jocuri tablou_indexat_joc;
    v_scor_mediu NUMBER;
BEGIN
    SELECT j.nume, INITCAP(j.tip), d.nume, e.nume
    BULK COLLECT INTO v_jocuri
    FROM joc_video j
    JOIN dezvoltator_editor_joc_video dejv ON j.cod_joc = dejv.cod_joc
    JOIN dezvoltator d ON dejv.cod_dezvoltator = d.cod_dezvoltator
    JOIN editor e ON dejv.cod_editor = e.cod_editor
    JOIN joc_video_categorie jvc ON j.cod_joc = jvc.cod_joc
    JOIN categorie c ON jvc.cod_categorie = c.cod_categorie
    WHERE INITCAP(c.nume) = INITCAP(v_categorie);

    FOR i IN 1..v_jocuri.COUNT LOOP
        SELECT AVG(scor)

```

```

    INTO v_scor_mediu
    FROM recenzie r
    JOIN joc_video j ON r.cod_joc = j.cod_joc
    WHERE j.ume = v_jocuri(i).ume_joc;

    DBMS_OUTPUT.PUT_LINE('Nume joc : ' || v_jocuri(i).ume_joc || chr(10) ||
        'Tip joc : ' || v_jocuri(i).tip_joc || chr(10) ||
        'Dezvoltator : ' || v_jocuri(i).ume_dezvoltator || chr(10) ||
        'Editor : ' || v_jocuri(i).ume_editor);
    IF v_scor_mediu IS NULL THEN
        DBMS_OUTPUT.PUT_LINE('Scor : nu are recenzii' || chr(10));
    ELSE
        DBMS_OUTPUT.PUT_LINE('Scor : ' || v_scor_mediu || '/5' || chr(10));
    END IF;

    DBMS_OUTPUT.NEW_LINE;
END LOOP;
EXCEPTION
    WHEN NO_DATA_FOUND THEN
        RAISE_APPLICATION_ERROR(-20001, 'Nu exista categorii cu numele ' || v_categorie);
END;

PROCEDURE insert_values
(
    v_ume utilizator.ume%TYPE DEFAULT 'Neculae',
    v_prenume utilizator.prenume%TYPE DEFAULT 'Andrei'
)
IS
    v_jocuri tablou_imbricat_joc := tablou_imbricat_joc();
    v_exista NUMBER(1);
BEGIN
    SELECT j.ume
    BULK COLLECT INTO v_jocuri
    FROM joc_video j
    JOIN utilizator_joc_video_cont ujvc ON j.cod_joc = ujvc.cod_joc
    JOIN utilizator u ON ujvc.cod_utilizator = u.cod_utilizator
    WHERE INITCAP(u.ume) = INITCAP(v_ume) AND INITCAP(u.prenume) = INITCAP(v_prenume);

    SELECT COUNT(*)
    INTO v_exista
    FROM info_utilizator
    WHERE ume = v_ume AND prenume = v_prenume;

    IF v_exista = 1 THEN
        UPDATE info_utilizator
        SET jocuri = v_jocuri
        WHERE ume = v_ume AND prenume = v_prenume;
    ELSE
        INSERT INTO info_utilizator
        VALUES (v_ume, v_prenume, v_jocuri);
    END IF;
EXCEPTION
    WHEN NO_DATA_FOUND THEN

```

```

        RAISE_APPLICATION_ERROR(-20001, 'Nu exista utilizator cu numele ' || v_nume || ' ' || v_prenume);
    WHEN TOO_MANY_ROWS THEN
        RAISE_APPLICATION_ERROR(-20002, 'Exista mai multi utilizatori cu numele ' || v_nume || ' ' ||
v_prenume);
    END;

FUNCTION get_info
(
    v_nume utilizator.nume%TYPE DEFAULT 'Neculae',
    v_cenzura NUMBER DEFAULT 1
) RETURN info
IS
    v_info info;
    v_conturi tablou_imbricat_info := tablou_imbricat_info();
BEGIN
    SELECT u.nume, u.prenume
    INTO v_info.nume, v_info.prenume
    FROM utilizator u
    WHERE INITCAP(u.nume) = INITCAP(v_nume);

    SELECT DISTINCT c.nume, c.parola, p.nume
    BULK COLLECT INTO v_conturi
    FROM cont c
    JOIN utilizator_joc_video_cont ujvc ON c.cod_cont = ujvc.cod_cont
    JOIN platforma p ON c.cod_platforma = p.cod_platforma
    JOIN utilizator u ON ujvc.cod_utilizator = u.cod_utilizator
    WHERE INITCAP(u.nume) = INITCAP(v_nume);

    IF v_cenzura = 1 THEN
        FOR I IN 1..v_conturi.COUNT LOOP
            v_conturi(i).parola := RPAD('*', LENGTH(v_conturi(i).parola), '*');
        END LOOP;
    END IF;

    v_info.conturi := v_conturi;

    RETURN v_info;
EXCEPTION
    WHEN NO_DATA_FOUND THEN
        RAISE_APPLICATION_ERROR(-20001, 'Nu exista utilizator cu numele ' || v_nume);
    WHEN TOO_MANY_ROWS THEN
        RAISE_APPLICATION_ERROR(-20002, 'Exista mai multi utilizatori cu numele ' || v_nume);
END;

FUNCTION nr_games
(
    v_min NUMBER DEFAULT 1,
    v_dezvoltator dezvoltator.nume%TYPE DEFAULT 'DONTNOD Entertainment'
) RETURN NUMBER
IS
    CURSOR jocuri(v_dezvoltator dezvoltator.nume%TYPE) IS
        SELECT j.cod_joc
        FROM joc_video j

```

```

    JOIN dezvoltator_editor_joc_video dejv ON j.cod_joc = dejv.cod_joc
    JOIN dezvoltator d ON dejv.cod_dezvoltator = d.cod_dezvoltator
    WHERE INITCAP(d.nume) = INITCAP(v_dezvoltator);
j joc_video.cod_joc%TYPE;
v_nr_utilizaor NUMBER := 0;
v_nr_joc NUMBER := 0;
BEGIN
    OPEN jocuri(v_dezvoltator);
    LOOP
        FETCH jocuri INTO j;
        EXIT WHEN jocuri%NOTFOUND;

        SELECT COUNT(*)
        INTO v_nr_utilizaor
        FROM utilizator_joc_video_cont ujvc
        JOIN joc_video j ON ujvc.cod_joc = j.cod_joc
        WHERE ujvc.cod_joc = j;

        IF v_nr_utilizaor >= v_min THEN
            v_nr_joc := v_nr_joc + 1;
        END IF;
    END LOOP;
    CLOSE jocuri;

    RETURN v_nr_joc;
EXCEPTION
    WHEN NO_DATA_FOUND THEN
        RAISE_APPLICATION_ERROR(-20001, 'Nu exista dezvoltator cu numele ' || v_dezvoltator);
    WHEN TOO_MANY_ROWS THEN
        RAISE_APPLICATION_ERROR(-20002, 'Exista mai multi dezvoltatori cu numele ' || v_dezvoltator);
END;
/
DECLARE
    informatii package_14.info := package_14.get_info(0, 'Toader');
BEGIN
    DBMS_OUTPUT.PUT_LINE('-----');
    DBMS_OUTPUT.PUT_LINE('Conturile utilizatorului ' || informatii.nume || ' ' || informatii.prenume);
    DBMS_OUTPUT.PUT_LINE('-----');

    FOR i IN 1..informatii.conturi.COUNT LOOP
        DBMS_OUTPUT.PUT_LINE('Store : ' || informatii.conturi(i).nume_platforma || chr(10) ||
            'Username: ' || informatii.conturi(i).username || chr(10) ||
            'Password: ' || informatii.conturi(i).parola || chr(10));
        DBMS_OUTPUT.NEW_LINE;
    END LOOP;
END;

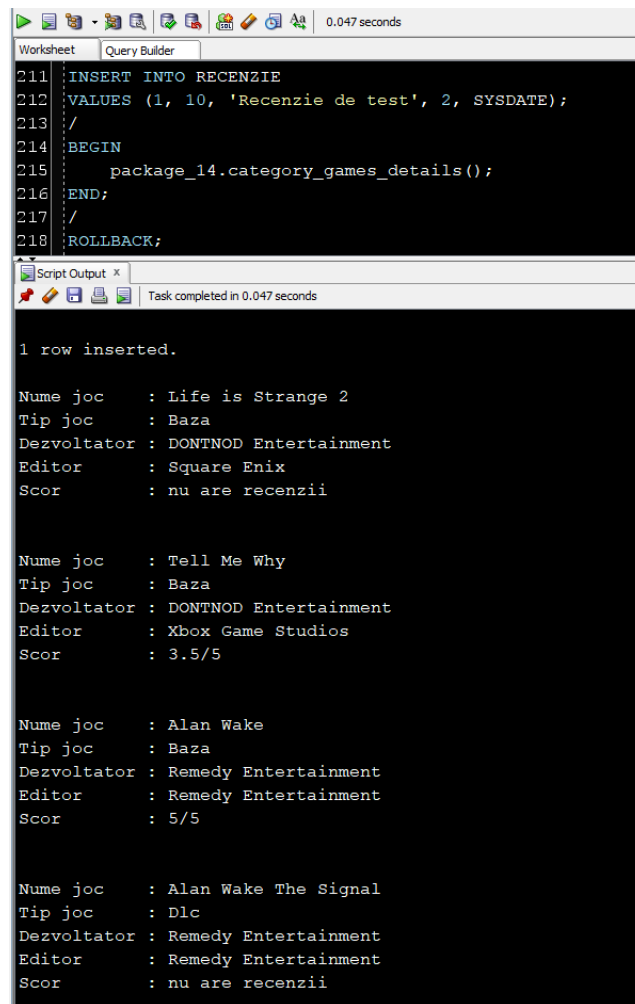
```

```
Worksheet Query Builder
1 CREATE OR REPLACE TYPE tablou_imbricat_joc AS TABLE OF VARCHAR2(50);
2 /
Script Output x
Task completed in 0.044 seconds
Type TABLOU_IMBRICAT_JOC compiled
```

```
Worksheet Query Builder
3 CREATE TABLE info_utilizator
4 (
5     nume VARCHAR2(30),
6     prenume VARCHAR2(30),
7     jocuri tablou_imbricat_joc
8 ) NESTED TABLE jocuri STORE AS tablou_jocuri;
9 /
Script Output x
Task completed in 0.024 seconds
Table INFO_UTILIZATOR created.
```

```
Worksheet Query Builder
10 CREATE OR REPLACE PACKAGE package_14 AS
11     TYPE tuplu_joc IS RECORD
12     (
13         nume_joc joc_video.nume%TYPE,
14         tip_joc joc_video.tip%TYPE,
15         nume_dezvoltator dezvoltator.nume%TYPE,
16         nume_editor editor.nume%TYPE
17     );
18     TYPE tablou_indexat_joc IS TABLE OF tuplu_joc INDEX BY PLS_INTEGER;
19
20     TYPE tuplu_info IS RECORD
21     (
22         username cont.nume%TYPE,
23         parola cont.parola%TYPE,
24         nume_platforma platforma.nume%TYPE
25     );
26     TYPE tablou_imbricat_info IS TABLE OF tuplu_info;
27     TYPE info IS RECORD
28     (
29         nume utilizator.nume%TYPE,
30         prenume utilizator.prenume%TYPE,
31         conturi tablou_imbricat_info
32     );
33
34     PROCEDURE category_games_details(v_categorie categorie.nume%TYPE DEFAULT 'Drama');
35     PROCEDURE insert_values(v_nume utilizator.nume%TYPE DEFAULT 'Neculae', v_prenume utilizator.prenume%TYPE DEFAULT 'Andrei');
36     FUNCTION get_info(v_nume utilizator.nume%TYPE DEFAULT 'Neculae', v_cenzura NUMBER DEFAULT 1) RETURN info;
37     FUNCTION nr_games(v_min NUMBER DEFAULT 1, v_dezvoltator dezvoltator.nume%TYPE DEFAULT 'DONTNOD Entertainment') RETURN NUMBER;
38 END;
Script Output x
Task completed in 0.056 seconds
Package PACKAGE 14 compiled
```

```
Worksheet Query Builder
163 CURSOR jocuri(v_dezvoltator dezvoltator.nume%TYPE) IS
164     SELECT j.cod_joc
165     FROM joc_video j
166     JOIN dezvoltator_editor_joc_video dejv ON j.cod_joc = dejv.cod_joc
167     JOIN dezvoltator d ON dejv.cod_dezvoltator = d.cod_dezvoltator
168     WHERE INITCAP(d.nume) = INITCAP(v_dezvoltator);
169     j joc_video.cod_joc%TYPE;
170     v_nr_utilizaor NUMBER := 0;
171     v_nr_joc NUMBER := 0;
172 BEGIN
173     OPEN jocuri(v_dezvoltator);
174     LOOP
175         FETCH jocuri INTO j;
176         EXIT WHEN jocuri%NOTFOUND;
177
178         SELECT COUNT(*)
179         INTO v_nr_utilizaor
180         FROM utilizator_joc_video_cont ujvc
181         JOIN joc_video j ON ujvc.cod_joc = j.cod_joc
182         WHERE ujvc.cod_joc = j;
183
184         IF v_nr_utilizaor >= v_min THEN
185             v_nr_joc := v_nr_joc + 1;
186         END IF;
187     END LOOP;
188     CLOSE jocuri;
189
190     RETURN v_nr_joc;
191 EXCEPTION
192     WHEN NO_DATA_FOUND THEN
193         RAISE_APPLICATION_ERROR(-20001, 'Nu exista dezvoltator cu numele ' || v_dezvoltator);
194     WHEN TOO_MANY_ROWS THEN
195         RAISE_APPLICATION_ERROR(-20002, 'Exista mai multi dezvoltatori cu numele ' || v_dezvoltator);
196 END;
197 END;
Script Output x
Task completed in 0.041 seconds
Package Body PACKAGE_14 compiled
```



```
Worksheet | Query Builder
211 INSERT INTO RECENZIE
212 VALUES (1, 10, 'Recenzie de test', 2, SYSDATE);
213 /
214 BEGIN
215     package_14.category_games_details();
216 END;
217 /
218 ROLLBACK;
```

Script Output x | Task completed in 0.047 seconds

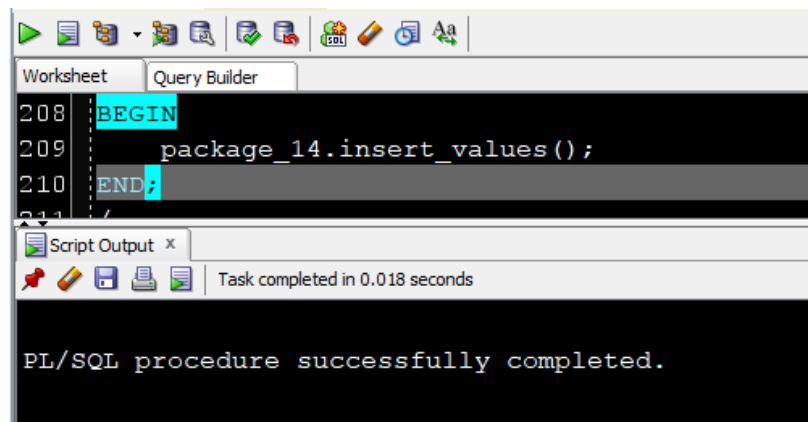
1 row inserted.

Nume joc : Life is Strange 2
Tip joc : Baza
Dezvoltator : DONTNOD Entertainment
Editor : Square Enix
Scor : nu are recenzii

Nume joc : Tell Me Why
Tip joc : Baza
Dezvoltator : DONTNOD Entertainment
Editor : Xbox Game Studios
Scor : 3.5/5

Nume joc : Alan Wake
Tip joc : Baza
Dezvoltator : Remedy Entertainment
Editor : Remedy Entertainment
Scor : 5/5

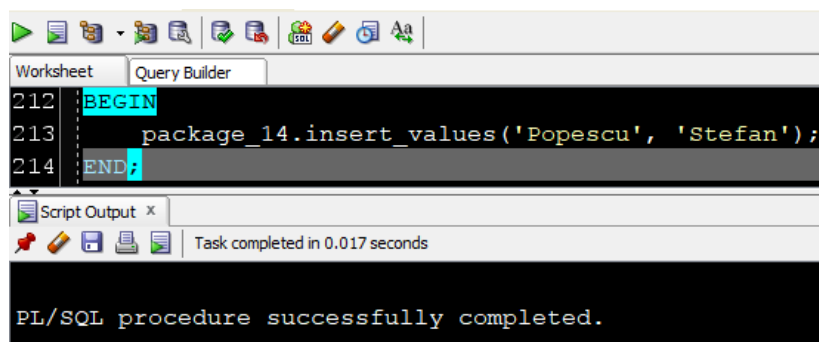
Nume joc : Alan Wake The Signal
Tip joc : Dlc
Dezvoltator : Remedy Entertainment
Editor : Remedy Entertainment
Scor : nu are recenzii



```
Worksheet | Query Builder
208 BEGIN
209     package_14.insert_values();
210 END;
```

Script Output x | Task completed in 0.018 seconds

PL/SQL procedure successfully completed.



```
Worksheet | Query Builder
212 BEGIN
213     package_14.insert_values('Popescu', 'Stefan');
214 END;
```

Script Output x | Task completed in 0.017 seconds

PL/SQL procedure successfully completed.

</

Worksheet	
Query Builder	
219	DECLARE
220	v_min NUMBER := 1;
221	v_dezvoltator dezvoltator.nume%TYPE := 'DONTNOD Entertainment';
222	BEGIN
223	IF v_min = 1 THEN
224	DBMS_OUTPUT.PUT_LINE('Numarul de jocuri dezvoltate de ' v_dezvoltator
225	' detinute de cel putin ' v_min ' utilizator este ' package_14.nr_games());
226	ELSE
227	DBMS_OUTPUT.PUT_LINE('Numarul de jocuri dezvoltate de ' v_dezvoltator
228	' detinute de cel putin ' v_min ' utilizatori este ' package_14.nr_games(v_min, v_dezvoltator));
229	END IF;
230	END;
Script Output x	
Task completed in 0.02 seconds	
Numarul de jocuri dezvoltate de DONTNOD Entertainment detinute de cel putin 1 utilizator este 2	
PL/SQL procedure successfully completed.	

Worksheet	
Query Builder	
219	DECLARE
220	v_min NUMBER := 3;
221	v_dezvoltator dezvoltator.nume%TYPE := 'DONTNOD Entertainment';
222	BEGIN
223	IF v_min = 1 THEN
224	DBMS_OUTPUT.PUT_LINE('Numarul de jocuri dezvoltate de ' v_dezvoltator
225	' detinute de cel putin ' v_min ' utilizator este ' package_14.nr_games());
226	ELSE
227	DBMS_OUTPUT.PUT_LINE('Numarul de jocuri dezvoltate de ' v_dezvoltator
228	' detinute de cel putin ' v_min ' utilizatori este ' package_14.nr_games(v_min, v_dezvoltator));
229	END IF;
230	END;
Script Output x	
Task completed in 0.027 seconds	
Numarul de jocuri dezvoltate de DONTNOD Entertainment detinute de cel putin 3 utilizatori este 1	
PL/SQL procedure successfully completed.	

```
Worksheet Query Builder
196 DECLARE
197     informatii package_14.info := package_14.get_info();
198 BEGIN
199     DBMS_OUTPUT.PUT_LINE('-----');
200     DBMS_OUTPUT.PUT_LINE('Conturile utilizatorului ' || informatii.nume || ' ' || informatii.prenume);
201     DBMS_OUTPUT.PUT_LINE('-----');
202
203     FOR i IN 1..informatii.conturi.COUNT LOOP
204         DBMS_OUTPUT.PUT_LINE('Store   : ' || informatii.conturi(i).nume_platforma || chr(10) ||
205                               'Username: ' || informatii.conturi(i).username || chr(10) ||
206                               'Password: ' || informatii.conturi(i).parola || chr(10));
207         DBMS_OUTPUT.NEW_LINE;
208     END LOOP;
209 END;
```

Script Output x
Task completed in 0.033 seconds

```
-----
Conturile utilizatorului Neculae Andrei
-----
Store   : Steam
Username: n_andrei13
Password: *****

Store   : Epic Games
Username: andrei137
Password: *****

Store   : Origin
Username: Andrei_13
Password: *****

PL/SQL procedure successfully completed.
```

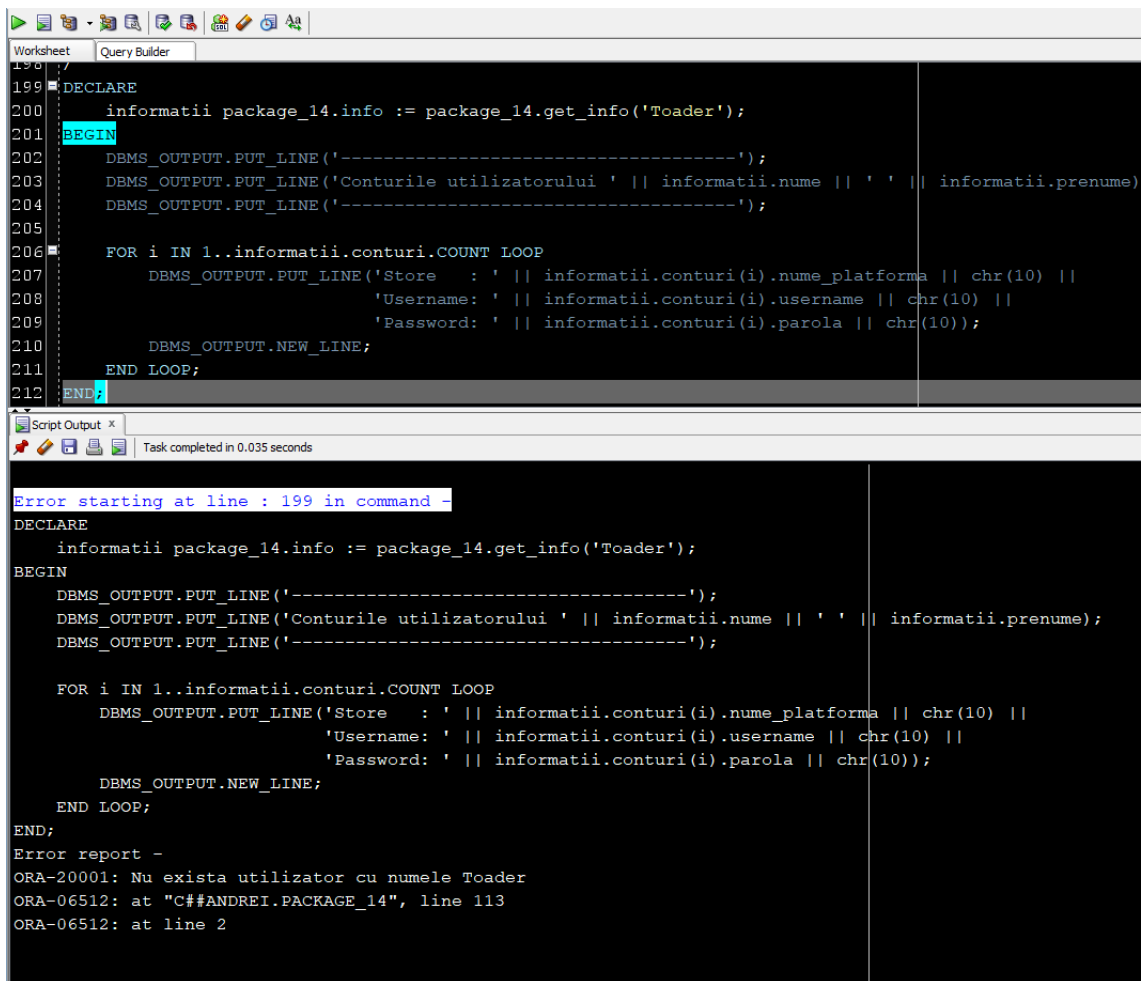
```
Worksheet Query Builder
199 DECLARE
200     informatii package_14.info := package_14.get_info('Buzatu', 0);
201 BEGIN
202     DBMS_OUTPUT.PUT_LINE('-----');
203     DBMS_OUTPUT.PUT_LINE('Conturile utilizatorului ' || informatii.nume || ' ' || informatii.prenume);
204     DBMS_OUTPUT.PUT_LINE('-----');
205
206     FOR i IN 1..informatii.conturi.COUNT LOOP
207         DBMS_OUTPUT.PUT_LINE('Store   : ' || informatii.conturi(i).nume_platforma || chr(10) ||
208                               'Username: ' || informatii.conturi(i).username || chr(10) ||
209                               'Password: ' || informatii.conturi(i).parola || chr(10));
210         DBMS_OUTPUT.NEW_LINE;
211     END LOOP;
212 END;
```

Script Output x
Task completed in 0.023 seconds

```
-----
Conturile utilizatorului Buzatu Giulian
-----
Store   : Steam
Username: b_giulian
Password: buzatu7

Store   : Battle.net
Username: BuzGiu
Password: Giulian_17

PL/SQL procedure successfully completed.
```

The screenshot displays the Oracle SQL Developer environment. The top pane, titled 'Query Builder', contains a PL/SQL script with the following code:

```
198 /
199 DECLARE
200     informatii package_14.info := package_14.get_info('Toader');
201 BEGIN
202     DBMS_OUTPUT.PUT_LINE('-----');
203     DBMS_OUTPUT.PUT_LINE('Conturile utilizatorului ' || informatii.nume || ' ' || informatii.prenume);
204     DBMS_OUTPUT.PUT_LINE('-----');
205
206     FOR i IN 1..informatii.conturi.COUNT LOOP
207         DBMS_OUTPUT.PUT_LINE('Store   : ' || informatii.conturi(i).nume_platforma || chr(10) ||
208                               'Username: ' || informatii.conturi(i).username || chr(10) ||
209                               'Password: ' || informatii.conturi(i).parola || chr(10));
210         DBMS_OUTPUT.NEW_LINE;
211     END LOOP;
212 END;
```

The bottom pane, titled 'Script Output', shows the results of the script execution. It includes the same code as above, followed by an error report:

```
Error starting at line : 199 in command -
DECLARE
    informatii package_14.info := package_14.get_info('Toader');
BEGIN
    DBMS_OUTPUT.PUT_LINE('-----');
    DBMS_OUTPUT.PUT_LINE('Conturile utilizatorului ' || informatii.nume || ' ' || informatii.prenume);
    DBMS_OUTPUT.PUT_LINE('-----');

    FOR i IN 1..informatii.conturi.COUNT LOOP
        DBMS_OUTPUT.PUT_LINE('Store   : ' || informatii.conturi(i).nume_platforma || chr(10) ||
                              'Username: ' || informatii.conturi(i).username || chr(10) ||
                              'Password: ' || informatii.conturi(i).parola || chr(10));
        DBMS_OUTPUT.NEW_LINE;
    END LOOP;
END;
Error report -
ORA-20001: Nu exista utilizator cu numele Toader
ORA-06512: at "C##ANDREI.PACKAGE_14", line 113
ORA-06512: at line 2
```