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REM: Assignment 1 – DDL STATEMENTS

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REM: **********************************************************************


drop table sungby;
drop table artist;
drop table song;
drop table album;
drop table musician;
drop table studio;

REM:*****Creating the database with the given constraints*****

create table musician(
mid varchar2(10),
name varchar2(20),
birthplace varchar2(30),
CONSTRAINT mid_pk PRIMARY KEY(mid)
);

desc musician;
Rem: checking primary key constraint
INSERT INTO musician VALUES('m1','Devi','Chennai');
SELECT * FROM musician;
INSERT INTO musician VALUES('m1','Deva','Bangalore');
INSERT INTO musician VALUES('m3','Anna','Mumbai');
SELECT * FROM musician;
INSERT INTO musician VALUES('m2','Cathy','Chennai');
SELECT * FROM musician;
INSERT INTO musician VALUES('m6','Bora','Kochi');
SELECT * FROM musician;

create table studio(
stname varchar2(30),
address varchar2(40),
phone number(10),
CONSTRAINT stname_pk PRIMARY KEY(stname)
);

desc studio;

Rem: checking primary key constraint
INSERT INTO studio VALUES('Studio3','2, 2nd block, Chennai',12345678);
SELECT * FROM studio;
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INSERT INTO studio VALUES('Studio3','3, 3nd block, Chennai',12348765);
INSERT INTO studio VALUES('Studio1','3, 3nd block, Mumbai',12345687);
SELECT * FROM studio;
INSERT INTO studio VALUES('Studio2','2, 2nd block, Kochi',12356678);
SELECT * FROM studio;
INSERT INTO studio VALUES('Studio4','2, 2nd block, Calcutta',87345678);
SELECT * FROM studio;
INSERT INTO studio VALUES('Studio5','5, 5nd block, Bangalore',87345678);
SELECT * FROM studio;

Rem: 7) The number of tracks in an album must always be recorded.
Rem: 9) The year of release of an album can not be earlier than 1945.
create table album(
albname varchar2(40),
albid varchar2(10),
yrrel date,
numtracks number(3) NOT NULL,
studio varchar2(30),
genre varchar2(20),
mid varchar2(10),
CONSTRAINT albid_pk PRIMARY KEY(albid),
check ((extract(year from yrrel))>=1945),
check (genre in('CAR', 'DIV', 'MOV', 'POP')),
FOREIGN KEY(mid) REFERENCES musician(mid)
);

desc album;
Rem: 1) The genre for Album can be generally categorized as CAR for Carnatic, DIV for  Divine,
Rem: MOV for Movies, POP for Pop songs.
INSERT INTO album VALUES('alb1','a1','12-dec-2010',4,'Studio1','CAR','m3');
SELECT * FROM album;
Rem: Violating 1)
INSERT INTO album VALUES('alb9','a9','02-oct-2011',9,'Studio2','DUET','m3');
SELECT * FROM album;

Rem: checking primary key constraint
INSERT INTO album VALUES('alb6','a6','02-oct-2011',5,'Studio1','DIV','m3');
SELECT * FROM album;
INSERT INTO album VALUES('alb66','a6','01-oct-2018',4,'Studio3','DIV','m3');
Rem: checking numtracks NOT NULL
INSERT INTO album VALUES('alb4','a4','01-jan-2012',NULL,'Studio3','MOV','m2');
SELECT * FROM album;
INSERT INTO album VALUES('alb3','a3','05-dec-2013',4,'Studio1','CAR','m1');
SELECT * FROM album;
Rem: checking year of release >= 1945
INSERT INTO album VALUES('alb7','a7','01-jan-1940',6,'Studio3','MOV','m2');
SELECT * FROM album;
INSERT INTO album VALUES('alb10','a10','05-jun-2011',9,'Studio2','MOV','m100');
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SELECT * FROM album;

Rem: 8) The length of each song must be greater than 7 for PAT songs.
create table song(
albid varchar2(10),
tracknum number(3),
sname varchar2(30),
len number(3),
genre varchar2(30),
CONSTRAINT ablid_tnum_pk PRIMARY KEY(albid, tracknum),
CONSTRAINT checkSongGenre check(genre in('PHI','REL','LOV','DEV','PAT')),
check(len > 7),
CONSTRAINT song_fk FOREIGN KEY(albid) REFERENCES album(albid)
);

desc song;
Rem: 2) The genre for Song can be PHI for philosophical, REL for relationship, LOV for duet,
Rem: DEV for devotional, PAT for patriotic type of songs.
INSERT INTO song VALUES('a1',4,'Song1.4',10,'NAT');
SELECT * FROM song;
Rem: violating 2)
INSERT INTO song VALUES('a6',4,'Song6.4',12,'DUET');
SELECT * FROM song;

Rem: checking primary key constraint
INSERT INTO song VALUES('a6',4,'Song6.4',12,'LOV');
SELECT * FROM song;
INSERT INTO song VALUES('a6',4,'Song6.7',10,'PHI');
INSERT INTO song VALUES('a3',1,'Song3.1',20,'PHI');
SELECT * FROM song;
Rem: checking len > 7
INSERT INTO song VALUES('a3',5,'Song3.5',6,'PHI');
SELECT * FROM song;
INSERT INTO song VALUES('a3',5,'Song3.50',25,'NAT');
SELECT * FROM song;

Rem: 3) The artist ID, album ID, musician ID, and track number, studio name are used to
Rem: retrieve tuple(s) individually from respective relations.
Rem: appropriate primary keys set

Rem: 6) It was learnt that the artists do not have the same name.
create table artist(
artid varchar2(10),
artname varchar2(20),
CONSTRAINT artid_pk PRIMARY KEY(artid)
);
desc artist;
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Rem: checking primary key constraint
INSERT INTO artist VALUES('art1','Alex','M');
SELECT * FROM artist;
INSERT INTO artist VALUES('art1','Alexandra,'F');
INSERT INTO artist VALUES('art3','Anna','F');
SELECT * FROM artist;
INSERT INTO artist VALUES('art2','Dorothy','F');
SELECT * FROM artist;
INSERT INTO artist VALUES('art6','Emily','F');
SELECT * FROM artist;

Rem: 5) A song may be sung by more than one artist. The same artist may sing for more than
Rem: one track in the same album. Similarly an artist can sing for different  album(s).
create table sungby(
albid varchar2(10),
tracknum number(3),
artid varchar2(10),
recdate date,
CONSTRAINT cpk1 PRIMARY KEY(albid, tracknum, artid),
CONSTRAINT sungby_fk FOREIGN KEY(albid,tracknum) REFERENCES song(albid,tracknum),
FOREIGN KEY(artid) REFERENCES artist(artid)
);

Rem: 4) Ensure that the artist, musician, song, sungby and studio can not be removed
 Rem: without deleting the album details.
alter table sungby
ADD CONSTRAINT sungby_fk_casc
FOREIGN KEY(albid,tracknum) REFERENCES song(albid,tracknum)
ON DELETE CASCADE;

desc sungby;

Rem: checking primary key constraint
INSERT INTO sungby VALUES('a1',4,'art2','12-oct-2010');
SELECT * FROM sungby;
INSERT INTO sungby VALUES('a1',4,'art2','19-dec-2010');
INSERT INTO sungby VALUES('a6',4,'art6','12-oct-2011');
SELECT * FROM sungby;
INSERT INTO sungby VALUES('a3',1,'art1','12-oct-2012');
SELECT * FROM sungby;
INSERT INTO sungby VALUES('a3',1,'art1',NULL);
SELECT * FROM sungby;



alter table artist add CONSTRAINT art_un unique(artname);
desc artist;
alter table album add CONSTRAINT st_fk FOREIGN KEY(studio) REFERENCES studio(stname);
desc album;
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REM: 10)It is necessary to represent the gender of an artist in the table.
alter table artist ADD gender varchar2(5);
desc artist;

REM: 12)The phone number of each studio should be different
alter table studio ADD CONSTRAINT uniqPhone UNIQUE(phone);
desc sungby;

REM: 13)An artist who sings a song for a particular track of an album can not be recorded without
the record_date.
alter table sungby MODIFY recdate date NOT NULL;
desc sungby;

REM: 14)It was decided to include the genre NAT for nature songs.
alter table song drop CONSTRAINT checkSongGenre;

alter table song
ADD CONSTRAINT checkSongGenre2 check(genre in('PHI','REL','LOV','DEV','PAT','NAT'));

REM: 15)Due to typoerror, there may be a possibility of false information. Hence while
REM:    deleting the song information, make sure that all the corresponding information are
REM:    also deleted.

alter table sungby
DROP CONSTRAINT sungby_fk;



SELECT * FROM song;
SELECT * FROM sungby;
DELETE FROM song WHERE albid='a3';
SELECT * FROM song;
SELECT * FROM sungby;

SELECT * FROM musician;
SELECT * FROM album;
SELECT * FROM song;
SELECT * FROM artist;
SELECT * FROM sungby;
SELECT * FROM studio;


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