**(M:Manuel olarak, K:SQL komutlariyla, C:Python kodlariyla)**

**Asagidaki sorulardan K ve C ile cozulmesini istediklerimizin cozumlerini (komut veya kodlarini) ustte sorusu altta cozumu olacak sekilde bir dosyaya yapistirip gondermenizi istiyoruz.**

**1- 'pycoders' isimli bir server kurun. (M)**

**OK**

**2- 'class4' database olusturun (M). Database silin (M). Ayni database yine olusturun (K)**

**CREATE DATABASE class4**

**WITH**

**OWNER = postgres**

**ENCODING = 'UTF8'**

**CONNECTION LIMIT = -1;**

**3- https://www.postgresqltutorial.com/postgresql-sample-database/ adresine gidin ve ER modeli inceleyin. Tablolar arasindaki en az 5 iliskiyi yazin.(Hangi tablolar arasinda ne tur bir iliski var)**

**4- ER modeldeki tablolardan 3 tanesini M olusturun.**

**OK**

**5- ER modeldeki tablolardan 3 tanesini K olusturun.**

**CREATE TABLE public.category**

**(**

**category\_id integer PRIMARY KEY NOT NULL,**

**name character varying(25) NOT NULL,**

**last\_update timestamp without time zone NOT NULL DEFAULT now()**

**)**

**-----------------------------------------------------------------------------**

**CREATE TABLE public.film\_category**

**(**

**film\_id smallint PRIMARY KEY NOT NULL,**

**category\_id smallint NOT NULL,**

**last\_update timestamp without time zone NOT NULL DEFAULT now()**

**)**

**-----------------------------------------------------------------------------**

**CREATE TABLE public.actor**

**(**

**actor\_id smallint PRIMARY KEY NOT NULL,**

**first\_name character varying(45) NOT NULL,**

**last\_name character varying(45) NOT NULL,**

**last\_update timestamp without time zone NOT NULL DEFAULT now()**

**)**

**6- ER modeldeki tablolardan 3 tanesini C olusturun.**

**(4-5-6. sorulari cozerken toblolar arasindaki iliskileri gozardi edebilirsiniz. Tum kolonlari girmek zorunda degilsiniz, en az 2 kolon olmasi yeterli.)**

**conn2 = psycopg2.connect("dbname=class4 user=postgres password=4408")**

**cur2 = conn2.cursor()**

**cur2.execute("""CREATE TABLE city**

**(**

**city\_id integer PRIMARY KEY NOT NULL,**

**city character varying(50) NOT NULL,**

**country\_id smallint NOT NULL,**

**last\_update timestamp without time zone NOT NULL DEFAULT now()**

**)""")**

**cur2.close()**

**conn2.commit()**

**conn2.close()**

**-----------------------------------------------------------------------------**

**conn2 = psycopg2.connect("dbname=class4 user=postgres password=4408")**

**cur2 = conn2.cursor()**

**cur2.execute("""CREATE TABLE city**

**(**

**city\_id integer PRIMARY KEY NOT NULL,**

**city character varying(50) NOT NULL,**

**country\_id smallint NOT NULL,**

**last\_update timestamp without time zone NOT NULL DEFAULT now()**

**)""")**

**cur2.close()**

**conn2.commit()**

**conn2.close()**

**-----------------------------------------------------------------------------**

**conn3 = psycopg2.connect("dbname=class4 user=postgres password=4408")**

**cur3 = conn3.cursor()**

**cur3.execute("""CREATE TABLE country**

**(**

**country\_id integer PRIMARY KEY NOT NULL,**

**country character varying(50) NOT NULL,**

**last\_update timestamp without time zone NOT NULL DEFAULT now()**

**)""")**

**cur3.close()**

**conn3.commit()**

**conn3.close()**

**7- Olusturdugunuz 3 tabloya M ile 5 veri girisi yapin.**

**OK**

**8- Olusturdugunuz 3 tabloya K ile 5 veri girisi yapin.**

**insert into category (category\_id,name)**

**values**

**(1,'action'),**

**(2,'comedy'),**

**(3,'drama'),**

**(4,'fantastic'),**

**(5,'animation')**

**--------------------------------------**

**insert into film\_category (film\_id,category\_id)**

**values**

**(11,5),**

**(21,4),**

**(31,3),**

**(41,2),**

**(51,1)**

**--------------------------------------**

**insert into actor (actor\_id,first\_name,last\_name)**

**values**

**(1,'Tom','Cruise'),**

**(2,'Leonardo','Di Caprio'),**

**(3,'Tom','Hanks'),**

**(4,'Robert','Downey Jr.'),**

**(5,'Morgan','Freeman')**

**9- Olusturdugunuz 3 tabloya C ile 5 veri girisi yapin.**

**# TABLO-1 ----------------------------**

**conn4 = psycopg2.connect('dbname=class4 user=postgres password=4408')**

**cur4 = conn4.cursor()**

**cur4.execute('''INSERT INTO inventory (inventory\_id, film\_id, store\_id)**

**VALUES**

**(1,11,2),**

**(2,21,1),**

**(3,31,1),**

**(4,41,1),**

**(5,51,2)**

**''')**

**cur4.close()**

**conn4.commit()**

**conn4.close()**

**# TABLO-2 ----------------------------**

**conn5 = psycopg2.connect('dbname=class4 user=postgres password=4408')**

**cur5 = conn5.cursor()**

**cur5.execute('''INSERT INTO country (country\_id, country)**

**VALUES**

**(1,'netherland'),**

**(2,'belgium'),**

**(3,'germany'),**

**(4,'norway'),**

**(5,'france')**

**''')**

**cur5.close()**

**conn5.commit()**

**conn5.close()**

**# TABLO-3 ----------------------------**

**conn6 = psycopg2.connect('dbname=class4 user=postgres password=4408')**

**cur6 = conn6.cursor()**

**cur6.execute('''INSERT INTO city (city\_id, city, country\_id)**

**VALUES**

**(1,'liege',2),**

**(2,'frankfurt',3),**

**(3,'utrecht',1),**

**(4,'paris',5),**

**(5,'oslo',4)**

**''')**

**cur6.close()**

**conn6.commit()**

**conn6.close()**

**10- 3 tablodaki birer veriyi M ile degistirin.**

**OK**

**11- 3 tablodaki birer veriyi K ile degistirin.**

**# TABLO-1 -------------------------------------**

**UPDATE category SET name='romantic' WHERE category\_id=1**

**# TABLO-2 -------------------------------------**

**UPDATE film\_category SET category\_id=3 WHERE film\_id=41**

**# TABLO-3 -------------------------------------**

**UPDATE actor SET first\_name='robert', last\_name='de niro' WHERE actor\_id=2**

**12- 3 tablodaki birer veriyi C ile degistirin.**

**# TABLO-1 -------------------------------------**

**conn\_update = psycopg2.connect('dbname=class4 user=postgres password=4408')**

**cur\_update = conn\_update.cursor()**

**cur\_update.execute('''UPDATE inventory**

**SET film\_id=21, store\_id=2 WHERE inventory\_id=4**

**''')**

**cur\_update.close()**

**conn\_update.commit()**

**conn\_update.close()**

**# TABLO-2 -------------------------------------**

**conn\_update = psycopg2.connect('dbname=class4 user=postgres password=4408')**

**cur\_update = conn\_update.cursor()**

**cur\_update.execute('''UPDATE country**

**SET country='sweden'WHERE country\_id=4**

**''')**

**cur\_update.close()**

**conn\_update.commit()**

**conn\_update.close()**

**# TABLO-3 -------------------------------------**

**conn\_update = psycopg2.connect('dbname=class4 user=postgres password=4408')**

**cur\_update = conn\_update.cursor()**

**cur\_update.execute('''UPDATE city**

**SET city='stockholm' WHERE city\_id=5**

**''')**

**cur\_update.close()**

**conn\_update.commit()**

**conn\_update.close()**

**13- 3 tablonun son satirini M ile silin.**

**OK**

**14- 3 tablonun son satirini K ile silin.**

**# TABLO-1 -------------------------------------**

**DELETE FROM category**

**WHERE category\_id = (SELECT category\_id FROM category**

**ORDER BY category\_id DESC LIMIT 1)**

**# TABLO-2 -------------------------------------**

**DELETE FROM film\_category**

**WHERE film\_id = (SELECT film\_id FROM film\_category**

**ORDER BY film\_id DESC LIMIT 1)**

**# TABLO-3 -------------------------------------**

**DELETE FROM actor**

**WHERE actor\_id = (SELECT actor\_id FROM actor**

**ORDER BY actor\_id DESC LIMIT 1)**

**15- 3 tablonun son satirini C ile silin.**

**# TABLO-1 -------------------------------------**

**conn\_ = psycopg2.connect('dbname=class4 user=postgres password=4408')**

**cur\_ = conn\_.cursor()**

**cur\_.execute('''DELETE FROM inventory**

**WHERE inventory\_id = (SELECT inventory\_id FROM inventory**

**ORDER BY inventory\_id DESC LIMIT 1)**

**''')**

**cur\_.execute('''DELETE FROM city**

**WHERE city\_id = (SELECT city\_id FROM city**

**ORDER BY city\_id DESC LIMIT 1)**

**''')**

**cur\_.execute('''DELETE FROM country**

**WHERE country\_id = (SELECT country\_id FROM country**

**ORDER BY country\_id DESC LIMIT 1)**

**''')**

**cur\_.close()**

**conn\_.commit()**

**conn\_.close()**

**# TABLO-2 -------------------------------------**

**conn\_ = psycopg2.connect('dbname=class4 user=postgres password=4408')**

**cur\_ = conn\_.cursor()**

**cur\_.execute('''DELETE FROM city**

**WHERE city\_id = (SELECT city\_id FROM city**

**ORDER BY city\_id DESC LIMIT 1)**

**''')**

**cur\_.close()**

**conn\_.commit()**

**conn\_.close()**

**# TABLO-3 -------------------------------------**

**conn\_ = psycopg2.connect('dbname=class4 user=postgres password=4408')**

**cur\_ = conn\_.cursor()**

**cur\_.execute('''DELETE FROM country**

**WHERE country\_id = (SELECT country\_id FROM country**

**ORDER BY country\_id DESC LIMIT 1)**

**''')**

**cur\_.close()**

**conn\_.commit()**

**conn\_.close()**

**16- 1 tabloyu M ile silin.**

**OK**

**17- 1 tabloyu K ile silin.**

**DROP TABLE category**

**18- 1 tabloyu C ile silin.**

**conn\_ = psycopg2.connect('dbname=class4 user=postgres password=4408')**

**cur\_ = conn\_.cursor()**

**cur\_.execute('''DROP TABLE inventory**

**''')**

**cur\_.close()**

**conn\_.commit()**

**conn\_.close()**

**19- Kalan tablolardan 1 tanesinin 2 veya 3 sutununu K ile baska bir tablo olarak**

**olusturun.**

**CREATE TABLE actor\_1 AS**

**SELECT actor\_id,first\_name,last\_name FROM actor**

**20- Kalan tablolardan 1 tanesinin 2 veya 3 sutununu C ile baska bir tablo olarak olusturun.**

**conn\_ = psycopg2.connect('dbname=class4 user=postgres password=4408')**

**cur\_ = conn\_.cursor()**

**cur\_.execute('''CREATE TABLE country\_1 AS**

**SELECT country\_id, country FROM country**

**''')**

**cur\_.close()**

**conn\_.commit()**

**conn\_.close()**

**21- Tablolardan 1 tanesini M ile truncate edin.**

**OK**

**22- Tablolardan 1 tanesini K ile truncate edin.**

**TRUNCATE TABLE actor\_1**

**23- Tablolardan 1 tanesini C ile truncate edin.**

**conn\_ = psycopg2.connect('dbname=class4 user=postgres password=4408')**

**cur\_ = conn\_.cursor()**

**cur\_.execute('''TRUNCATE TABLE country\_1**

**''')**

**cur\_.close()**

**conn\_.commit()**

**conn\_.close()**

**24- Truncate edilmis tablolari M ile silin.**

**OK**

**25- 2 tabloyu K ile silin.**

**DROP TABLE film\_category**

**DROP TABLE film\_category**

**26- 2 tabloyu C ile silin.**

**conn\_ = psycopg2.connect('dbname=class4 user=postgres password=4408')**

**cur\_ = conn\_.cursor()**

**cur\_.execute('''DROP TABLE city**

**''')**

**cur\_.execute('''DROP TABLE country**

**''')**

**cur\_.close()**

**conn\_.commit()**

**conn\_.close()**

**27- Elimizde veri olan 1 tablo kalmis olmasi lazim. Bu tabloyu csv olarak bilgisayarınıza**

**yukleyin.**

**OK**

**28- Postgresql arayuzundeki son tabloyu da K ile silin.**

**DROP TABLE actor**

**29- Bilgisayarinizdaki csv yi arayuze import edin.**

**OK**

**30- Import ettiginiz bu tabloyu C ile silin.**

**conn\_ = psycopg2.connect('dbname=class4 user=postgres password=4408')**

**cur\_ = conn\_.cursor()**

**cur\_.execute('''DROP TABLE actor**

**''')**

**cur\_.close()**

**conn\_.commit()**

**conn\_.close()**

**31- https://www.postgresqltutorial.com/postgresql-sample-database/ linkindeki ornek DB yi bilgisayariniza indirin ve arayuze yukleyin.**

**OK**

**32- DB nizde 15 adet tablo olmasi lazim. Her tabloyu teker teker goruntuleyin ve kolon isimlerine bakarak, 5 tabloda hangi kolonun PK ve FK oldugunu yazin.**

**Sorgular? (Asagidaki sorularin cevaplarini ve bu cevabi bulurken kullandiginiz kodlari yazin)**

**TABLE 'city' --> city\_id-pk; country\_id-fk**

**TABLE 'customer' --> customer\_id-pk; address\_id-fk**

**TABLE 'film' --> film\_id-pk; language\_id-fk**

**TABLE 'actor' --> actor\_id-pk**

**TABLE 'address' --> address\_id-pk; city\_id-fk**

**33- Action filmlerinin ortalama suresi ne kadar?**

**SELECT avg(length) FROM film**

**WHERE film\_id IN (SELECT film\_id FROM film\_category**

**WHERE category\_id=(SELECT category\_id FROM category WHERE name='Action'))**

**34- En cok staff olan store hangisidir?**

**SELECT store\_id, COUNT(store\_id) FROM customer GROUP BY store\_id ORDER BY COUNT(store\_id) DESC LIMIT 1**

**35- 'Gene Willis' adli actorun oynadigi filmlerin ratingi nedir?**

**SELECT rating FROM film WHERE**

**film\_id IN (SELECT film\_id FROM film\_actor WHERE**

**actor\_id=(SELECT actor\_id FROM actor WHERE**

**first\_name='Gene' AND last\_name='Willis'**

**))**

**36- Aktif customer sayisi nedir?**

**SELECT count(\*) FROM customer WHERE active=1**

**37- 'C' harfiyle baslayan filmler hangileridir?**

**SELECT title FROM film WHERE title LIKE 'C%'**

**38- 4$ den az odeme yapan musterilerin e-mail edresleri nedir?**

**SELECT email FROM customer WHERE**

**customer\_id IN (SELECT customer\_id FROM payment WHERE amount<4 )**

**39- Moscow'da ikamet eden staff ve customer tablosu? (sadece isim/soyisim sutunu olsun)**

**SELECT first\_name, last\_name FROM customer WHERE**

**address\_id IN (SELECT address\_id FROM address WHERE**

**city\_id = (SELECT city\_id FROM city WHERE city='Moscow'))**

**40- En az kiralanan 5 film hangisidir?**

**SELECT title FROM film WHERE film\_id IN**

**(SELECT film\_id FROM inventory GROUP BY film\_id ORDER BY count(\*) LIMIT 5)**

**41- 2006 yilinda yayinlanan ingilizce filmler hangileridir?**

**SELECT title FROM film WHERE release\_year=2006 and**

**language\_id = (SELECT language\_id FROM language WHERE name='English')**