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“Київський політехнічний інститут”**

**Факультет прикладної математики
Кафедра спеціалізованих комп’ютерних систем**

**Лабораторна робота № 1
з дисципліни «Організація баз даних»
Ознайомлення з базовими конструкціями мови Python. Спрощена
база даних.**

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Перевірів(ла):

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Завдання варіанту:

6.	Режисер-Фільм	Вивести список режисерів, чиї фільми знімались в Україні
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Програмний код:

producer.py

```
class Producer(object):
    def __init__(self, pid, pname):
        self.pid = pid
        self.pname = pname
    def __str__(self):
        return "Producer id = %d, Producer name = %s"%(self.pid, self.pname)
```

producers.py

```
class Producers(object):
    def __init__(self):
        self.producers = [] #empty list

    def add(self, producer):
        for i, p in enumerate(self.producers):
            if p.pname == producer.pname:
                return i
        self.producers.append(producer)
        return -1

    def __str__(self):
        return "\n".join(str(producer) for producer in self.producers)

    def exists(self, pid):
        for producer in self.producers:
            if producer.pid == pid:
                return True
        return False

    def delete(self, pid, movies):
        if movies.exists(pid):
            print("Cannot delete. Producer has movies attached in database")
            return
        index = -1
        for i, producer in enumerate(self.producers):
            if producer.pid == pid:
```

```

        index = i

    if (index > -1):
        return self.producers.pop(index)

def searchByCountry(self, name, movies):
    for producer in self.producers:
        for movie in movies.movies:
            if (movie.pid == producer.pid and movie.country.lower() ==
name.lower()):
                print(producer)

```

movie.py

```

class Movie(object):
    def __init__(self, pid, mid, mname, country, producers):
        self.mid = mid
        self.pid = pid
        self.mname = mname
        self.country = country

    def __str__(self):
        return "Producer id = %d, Movie id = %d, Movie name = %s, Country = %s"%(self.pid, self.mid, self.mname, self.country)

```

movies.py

```

class Movies(object):
    def __init__(self):
        self.movies = []

    def add(self, movie):
        self.movies.append(movie)

    def __str__(self):
        return "\n".join(str(movie) for movie in self.movies)

    def exists(self, pid):
        for movie in self.movies:
            if movie.pid == pid:
                return True
        return False

```

```

def delete(self, mid):
    index = -1
    for i, movie in enumerate(self.movies):
        if movie.mid == mid:
            index = i

    if (index > -1):
        return self.movies.pop(index)

```

menu.py

```

def mainManu():
    print("1: Show the database    ")
    print("2: Add a new Producer to database")
    print("3: Add a new item to database")
    print("4: Remove producer from the database ")
    print("5: Remove a movie from the database")
    print("6: Find an author by country:  ")
    print("0: Exit")
    return int(input())

```

main.py

```

from producer import Producer
from producers import Producers
from movie import Movie
from movies import Movies
import menu
import pickle

```

```

def main():
    producers = Producers()
    movies = Movies()

    try :
        with open('producers.pickle', 'rb') as f:
            producers = pickle.load(f)
        with open('movies.pickle', 'rb') as f:
            movies = pickle.load(f)
    except EOFError as e:
        pass

    pid = len(producers.producers)

```

```

mid = len(movies.movies)
print("%d producers"%(pid))
print("%d movies"%(mid))
try:
    while (True):
        select = menu.mainMenu()
        if (select == 1):                                #show database
            print("\nAll producers:")
            print(producers)
            print("\nAll movies:")
            print(movies)
        elif(select == 2):                                #add an producer
            pname = input("Producer name: ")
            producers.add(Producer(pid, pname))
            pid += 1

        elif(select == 3):                                #add a new item
            pname = input("Producer name: ")
            mname = input("Movie name: ")
            country = input("Country : ")
            c = producers.add(Producer(pid, pname))

            if c > -1:
                movies.add(Movie(c, mid, mname, country,
producers))
            else:
                movies.add(Movie(pid, mid, mname, country,
producers))

            pid += 1
            mid += 1
        elif (select == 4):                                #delete
producer
            id = int(input("Enter producer id:"))
            producers.delete(id, movies)
        elif (select == 5):                                #delete
book
            id = int(input("Enter movie id:"))
            movies.delete(id)
        elif (select == 6):                                #find all
the producers by country
            country = input("Enter country: ")
            producers.searchByCountry(country, movies)
        elif (select == 0):
            break

```

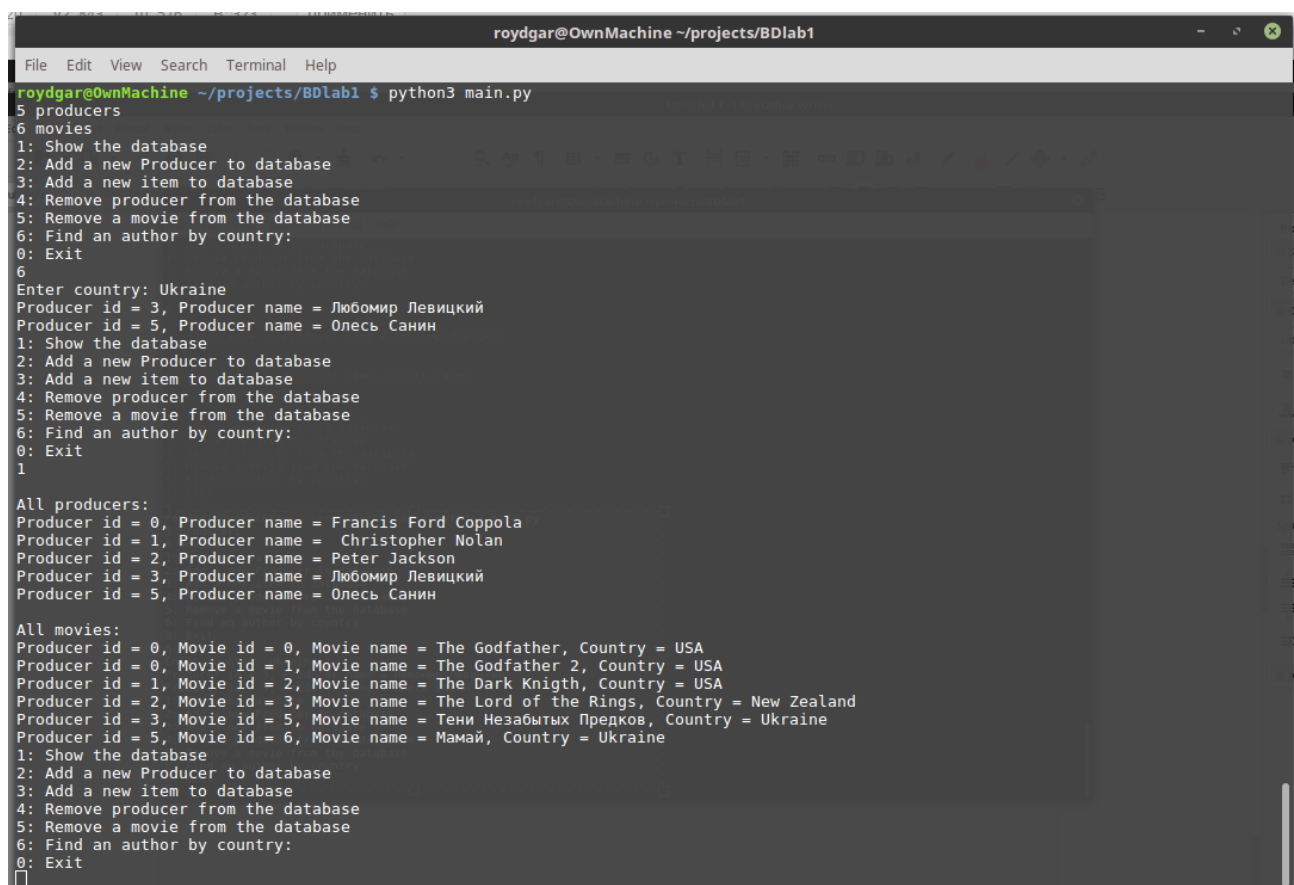
```

except Exception as e:
    print(e)
finally:
    with open('producers.pickle', 'wb') as f:
        pickle.dump(producers, f)
    with open('movies.pickle', 'wb') as f:
        pickle.dump(movies, f)

```

main()

Приклад виконання програми:



```

roydgar@OwnMachine ~/projects/BDlab1
File Edit View Search Terminal Help
roydgar@OwnMachine ~/projects/BDlab1 $ python3 main.py
5 producers
6 movies
1: Show the database
2: Add a new Producer to database
3: Add a new item to database
4: Remove producer from the database
5: Remove a movie from the database
6: Find an author by country:
0: Exit
6
Enter country: Ukraine
Producer id = 3, Producer name = Любомир Левицкий
Producer id = 5, Producer name = Олесь Санин
1: Show the database
2: Add a new Producer to database
3: Add a new item to database
4: Remove producer from the database
5: Remove a movie from the database
6: Find an author by country:
0: Exit
1
All producers:
Producer id = 0, Producer name = Francis Ford Coppola
Producer id = 1, Producer name = Christopher Nolan
Producer id = 2, Producer name = Peter Jackson
Producer id = 3, Producer name = Любомир Левицкий
Producer id = 5, Producer name = Олесь Санин
All movies:
Producer id = 0, Movie id = 0, Movie name = The Godfather, Country = USA
Producer id = 0, Movie id = 1, Movie name = The Godfather 2, Country = USA
Producer id = 1, Movie id = 2, Movie name = The Dark Knigth, Country = USA
Producer id = 2, Movie id = 3, Movie name = The Lord of the Rings, Country = New Zealand
Producer id = 3, Movie id = 5, Movie name = Тени Незабытых Предков, Country = Ukraine
Producer id = 5, Movie id = 6, Movie name = Мамай, Country = Ukraine
1: Show the database
2: Add a new Producer to database
3: Add a new item to database
4: Remove producer from the database
5: Remove a movie from the database
6: Find an author by country:
0: Exit

```