

Kennesaw State University
Department of Computer Science
CS 4720 Internet Programming
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Assignment 2

Source Code

db.py

```
import sqlite3
from os.path import join, split

def dictionary_factory(cursor, row):
    col_names = [d[0].lower() for d in cursor.description]
    return dict(zip(col_names, row))

def getConnection():
    this_dir = split(__file__)[0]
    fname = join(this_dir, 'sqlite-sakila.sql')
    conn = sqlite3.connect(fname)
    conn.row_factory = dictionary_factory # note: no parentheses
    return conn

def do_command(cmd, args=[]):
    try:
        print("Connecting...")
        conn = getConnection()
        crs = conn.cursor()
        crs.execute(cmd, args)
        return crs.fetchall()
    finally:
        conn.close()
        print("Closed")

data = do_command("select * from actor")
```

db_access.py

```
from db import do_command

def list_of_all_stores():
    return do_command("select * from store")

def list_of_all_films():
    return do_command("select * from film order by title")

def list_of_all_inventory():
    return do_command("select * from inventory")

def inventory_for_film(film_id):
    return do_command("select * from inventory where film_id = ?", [film_id])

def inventory_for_film_for_store(film_id, store_id):
    return do_command("select * from inventory where film_id = ? and store_id = ?", [film_id, store_id])

def count_rentals_for_film(film_id):
    invent = inventory_for_film(film_id)
    rentals = 0
    for inv in invent:
        rnt = do_command("select count(all) as cnt from rental where inventory_id = ?", [inv['inventory_id']])
        #print(rnt)
        rentals += rnt[0]['cnt']
    return rentals

allstores = list_of_all_stores()
print("-" * 100)
for row in allstores:
    print (row)
print("-" * 100)

allfilms = list_of_all_films()
print("-" * 100)
for row in allfilms:
    print (row)
print("-" * 100)

allinventory = list_of_all_inventory()
print("-" * 100)
for row in allinventory:
    print (row)
print("-" * 100)

inventoryforfilm = inventory_for_film(999)
print("-" * 100)
for row in inventoryforfilm:
    print (row)
print("-" * 100)

inventoryforfilmstore = inventory_for_film_for_store(999, 1)
print("-" * 100)
```

```

for row in inventoryforfilmstore:
    print (row)
print("-" * 100)

countforfilm = count_rentals_for_film(999)
print("-" * 100)
print("Film Had " + str(countforfilm) + " Rentals")
print("-" * 100)

```

database.py

```

import sqlite3

conn= sqlite3.connect('sqlite-sakila.sql')

c=conn.cursor()

sql="select * from actor"

data = c.execute(sql)

for row in data:
    print(row)

    conn = sqlite3.connect('sqlite-sakila.sql')
    c = conn.cursor()
    sql = "select * from actor"
    data = c.execute(sql)

    for row in data:
        print(row)

    print("--" * 35)

    for row in data: print(row)

```

main.py

```

from db import do_command

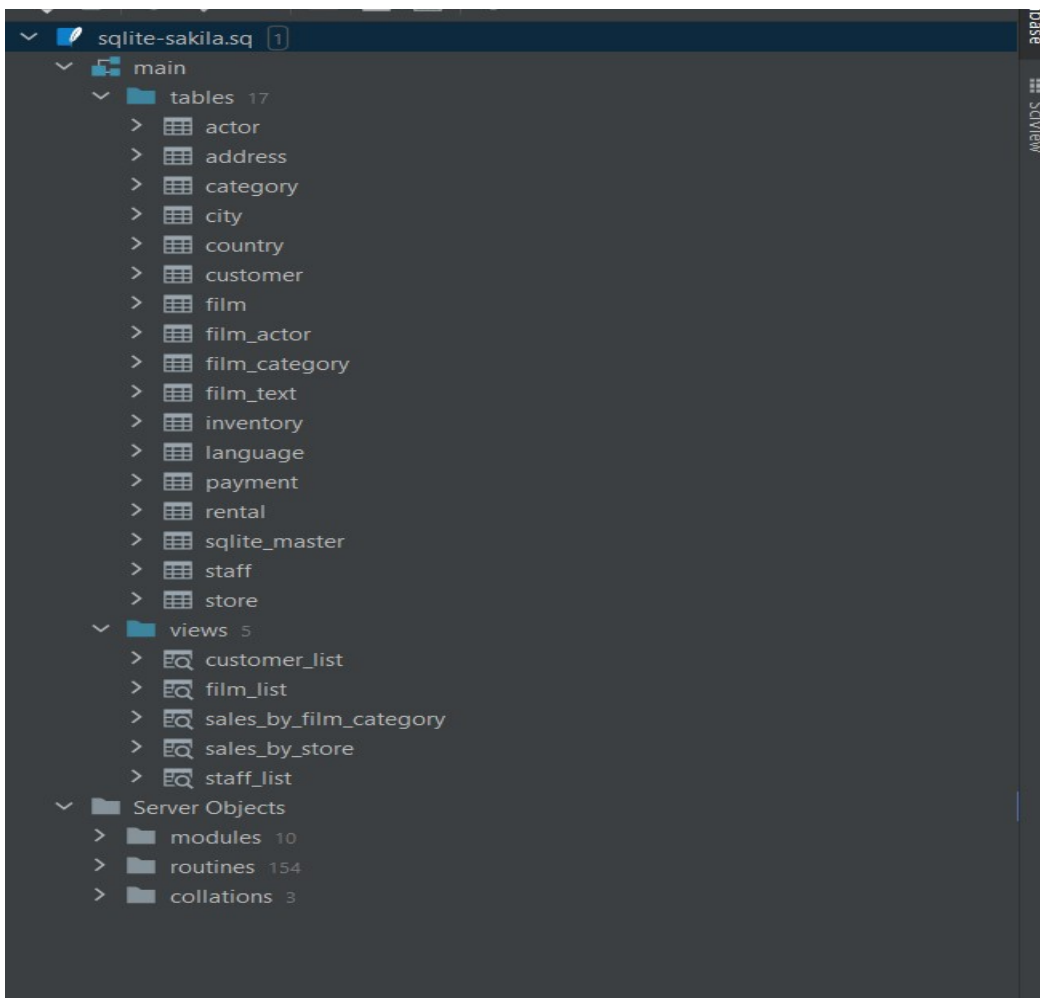
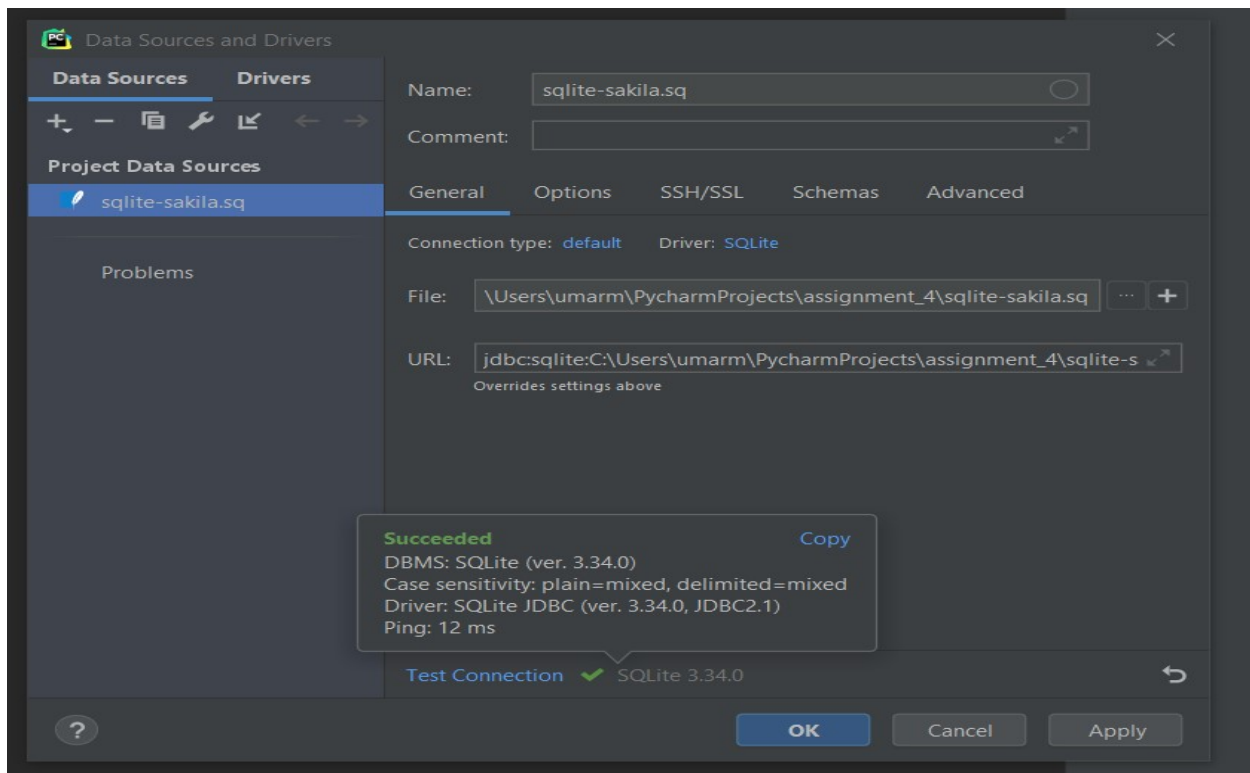
customers = do_command("select ID, name, address from customer_list")
customer_rentals = do_command("select rental.rental_id, ID, name, address
from customer_list inner join rental on rental.customer_id=ID")

for row in customers:
    print(row)

#for row in customer_rentals:
#    print(row)

```

Screenshots



```
File Edit View Navigate Code Refactor Run Tools VCS Window Help assignment_4 - main.py
assignment_4 main.py
Project Run main
{'id': 1, 'name': 'MARY SMITH', 'address': '1915 Hanoi Way'}
{'id': 2, 'name': 'PATRICIA JOHNSON', 'address': '1121 Loja Avenue'}
{'id': 3, 'name': 'LINDA WILLIAMS', 'address': '692 Joliet Street'}
{'id': 4, 'name': 'BARBARA JONES', 'address': '1566 Inegl Manor'}
{'id': 5, 'name': 'ELIZABETH BROWN', 'address': '53 Idru Parkway'}
{'id': 6, 'name': 'JENNIFER DAVIS', 'address': '1795 Santiago de Compostela Way'}
{'id': 7, 'name': 'MARIA MILLER', 'address': '980 Santiago de Compostela Parkway'}
{'id': 8, 'name': 'SUSAN WILSON', 'address': '478 Joliet Way'}
{'id': 9, 'name': 'MARGARET MOORE', 'address': '613 Korolev Drive'}
{'id': 10, 'name': 'DOROTHY TAYLOR', 'address': '1531 Sal Drive'}
{'id': 11, 'name': 'LISA ANDERSON', 'address': '1542 TarLac Parkway'}
{'id': 12, 'name': 'NANCY THOMAS', 'address': '808 Bhopal Manor'}
{'id': 13, 'name': 'KAREN JACKSON', 'address': '270 Amroha Parkway'}
{'id': 14, 'name': 'BETTY WHITE', 'address': '770 Bydgoszcz Avenue'}
{'id': 15, 'name': 'HELEN HARRIS', 'address': '419 Iligan Lane'}
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{'id': 17, 'name': 'DONNA THOMPSON', 'address': '278 Toulon Boulevard'}
{'id': 18, 'name': 'CAROL GARCIA', 'address': '320 Brest Avenue'}
{'id': 19, 'name': 'RUTH MARTINEZ', 'address': '1417 Lancaster Avenue'}
{'id': 20, 'name': 'SHARON ROBINSON', 'address': '1688 Okana Way'}
{'id': 21, 'name': 'NICHELLE CLARK', 'address': '262 A Corua (La Corua) Parkway'}
{'id': 22, 'name': 'LAURA RODRIGUEZ', 'address': '28 Charlotte Amalie Street'}
{'id': 23, 'name': 'SARAH LEWIS', 'address': '1788 Hino Boulevard'}
{'id': 24, 'name': 'KIMBERLY LEE', 'address': '96 Tafuna Way'}
{'id': 25, 'name': 'DEBORAH WALKER', 'address': '934 San Felipe de Puerto Plata Street'}
{'id': 26, 'name': 'JESSICA HALL', 'address': '18 Duisburg Boulevard'}
{'id': 27, 'name': 'SHIRLEY ALLEN', 'address': '217 Botshabelo Place'}
{'id': 28, 'name': 'CYNTHIA YOUNG', 'address': '1425 Shikarpur Manor'}
{'id': 29, 'name': 'ANGELA HERNANDEZ', 'address': '786 Aurora Avenue'}
{'id': 30, 'name': 'MELISSA KING', 'address': '1668 Anpolis Street'}
{'id': 31, 'name': 'ROSEMARY WOLFE', 'address': '133 Compostela Way'}
Run TODO Problems Terminal Python Packages Python Console
Connected (28 minutes ago) 81 CRLF UTF-8 4 spaces Python 3.7 (assignment_4) 5:24 PM 7/6/2021
```

```
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assignment_4 main.py
Project Run main
{'rental_id': 4593, 'id': 8, 'name': 'SUSAN WILSON', 'address': '478 Joliet Way'}
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{'rental_id': 4597, 'id': 585, 'name': 'RAFAEL ABNEY', 'address': '48 Maracabo Place'}
{'rental_id': 4598, 'id': 97, 'name': 'ANNIE RUSSELL', 'address': '1599 Plock Drive'}
{'rental_id': 4599, 'id': 230, 'name': 'JOY GEORGE', 'address': '1256 Bislig Boulevard'}
{'rental_id': 4610, 'id': 27, 'name': 'SHIRLEY ALLEN', 'address': '217 Botshabelo Place'}
{'rental_id': 4511, 'id': 75, 'name': 'TAMMY SANDERS', 'address': '1551 Rampur Lane'}
{'rental_id': 4512, 'id': 424, 'name': 'KYLE SPURLOCK', 'address': '1269 Botosani Manor'}
{'rental_id': 4513, 'id': 182, 'name': 'RENEE LANE', 'address': '533 al-Ayn Boulevard'}
{'rental_id': 4514, 'id': 576, 'name': 'MORRIS MCCARTER', 'address': '1568 Celaya Parkway'}
{'rental_id': 4515, 'id': 229, 'name': 'TAMARA NGUYEN', 'address': '356 Olomouc Manor'}
{'rental_id': 4516, 'id': 497, 'name': 'GILBERT SLEDGE', 'address': '1515 Korla Way'}
{'rental_id': 4517, 'id': 16, 'name': 'SANDRA MARTIN', 'address': '360 Toulouse Parkway'}
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{'rental_id': 4519, 'id': 459, 'name': 'TOMMY COLLAZO', 'address': '76 Kernanshah Manor'}
{'rental_id': 4520, 'id': 184, 'name': 'RITA GRAHAM', 'address': '1386 Yangor Avenue'}
{'rental_id': 4521, 'id': 327, 'name': 'LARRY THRASHER', 'address': '663 Baha Blanca Parkway'}
{'rental_id': 4522, 'id': 387, 'name': 'JOSEPH JOY', 'address': '1354 Siegen Street'}
{'rental_id': 4523, 'id': 347, 'name': 'RYAN SALISBURY', 'address': '1673 Tangail Drive'}
{'rental_id': 4524, 'id': 185, 'name': 'ROBERTA HARPER', 'address': '927 Barcelona Street'}
{'rental_id': 4525, 'id': 458, 'name': 'LLOYD DOWD', 'address': '935 Aden Boulevard'}
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{'rental_id': 4530, 'id': 79, 'name': 'RACHEL BARNES', 'address': '586 Tete Way'}
{'rental_id': 4531, 'id': 142, 'name': 'APRIL BURNS', 'address': '483 Ljubertsy Parkway'}
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Run TODO Problems Terminal Python Packages Python Console
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```
assignment_4 - database.py
Run: database
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(3, 'ED', 'CHASE', '2011-09-14 18:05:28')
(4, 'JENNIFER', 'DAVIS', '2011-09-14 18:05:28')
(5, 'JOHNNY', 'LOLLOBRIGIDA', '2011-09-14 18:05:28')
(6, 'BETTE', 'NICHOLSON', '2011-09-14 18:05:28')
(7, 'GRACE', 'MOSTEL', '2011-09-14 18:05:28')
(8, 'MATTHEW', 'JOHANSSON', '2011-09-14 18:05:28')
(9, 'JOE', 'SWANK', '2011-09-14 18:05:28')
(10, 'CHRISTIAN', 'GABLE', '2011-09-14 18:05:28')
(11, 'ZERO', 'CAGE', '2011-09-14 18:05:28')
(12, 'KARL', 'BERRY', '2011-09-14 18:05:28')
(13, 'UNA', 'WOOD', '2011-09-14 18:05:28')
(14, 'VIVIAN', 'BERGEN', '2011-09-14 18:05:28')
(15, 'CUBA', 'OLIVIER', '2011-09-14 18:05:28')
(16, 'FRED', 'COSTNER', '2011-09-14 18:05:28')
(17, 'HELEN', 'VOIGHT', '2011-09-14 18:05:28')
(18, 'DAN', 'TORN', '2011-09-14 18:05:28')
(19, 'BOB', 'FANCETT', '2011-09-14 18:05:28')
(20, 'LUCILLE', 'TRACY', '2011-09-14 18:05:28')
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(22, 'ELVIS', 'MARX', '2011-09-14 18:05:28')
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(25, 'KEVIN', 'BLOOM', '2011-09-14 18:05:29')
(26, 'RIP', 'CRAWFORD', '2011-09-14 18:05:29')
(27, 'JULIA', 'MCQUEEN', '2011-09-14 18:05:29')
(28, 'WOODY', 'HOFFMAN', '2011-09-14 18:05:29')
(29, 'ALEC', 'WAYNE', '2011-09-14 18:05:29')
(30, 'SANDRA', 'PECK', '2011-09-14 18:05:29')
(31, 'JESSE', 'MORTENSTEN', '2011-09-14 18:05:29')
Connected (30 minutes ago)
```

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-----
```

```
assignment_4 - db_access.py
Run: db_access
{'file_id': 1, 'title': 'ACADEMY DINOSAUR', 'description': 'A Epic Drama of a Feminist And a Mad Scientist who must Battle a Teacher in The Canadian Rockies', 'release_year': '2006', 'language_id': '1'}
{'file_id': 2, 'title': 'ACE GOLDFINGER', 'description': 'A Astounding Epistle of a Database Administrator And a Explorer who must Find a Car in Ancient China', 'release_year': '2006', 'language_id': '1'}
{'file_id': 3, 'title': 'ADAPTATION HOLES', 'description': 'A Astounding Reflection of a Lumberjack And a Car who must Sink a Lumberjack in A Baloon Factory', 'release_year': '2006', 'language_id': '1'}
{'file_id': 4, 'title': 'AFFAIR PREJUDICE', 'description': 'A Fanciful Documentary of a Frisbee And a Lumberjack who must Chase a Monkey in A Shark Tank', 'release_year': '2006', 'language_id': '1'}
{'file_id': 5, 'title': 'AFRICAN EGG', 'description': 'A Fast-Paced Documentary of a Pastry Chef And a Dentist who must Pursue a Forensic Psychologist in The Gulf of Mexico', 'release_year': '2006', 'language_id': '1'}
{'file_id': 6, 'title': 'AGENT TRUMAN', 'description': 'A Intrepid Panorama of a Robot And a Boy who must Escape a Sumo Wrestler in Ancient China', 'release_year': '2006', 'language_id': '1'}
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{'file_id': 28, 'title': 'ANTHEN LUKE', 'description': 'A Touching Panorama of a Waitress And a Woman who must Outrace a Dog in An Abandoned Amusement Park', 'release_year': '2006', 'language_id': '1'}
{'file_id': 29, 'title': 'ANTITRUST TOMATOES', 'description': 'A Fateful Yarn of a Womanizer And a Feminist who must Succumb a Database Administrator in Ancient India', 'release_year': '2006', 'language_id': '1'}
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```

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17 Rentals
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```