ADSD HW5 Chinook Optimization

```
import sqlite3
import time


conn = sqlite3.connect('Chinook.db')
c = conn.cursor()

start = time.time()
c.execute('SELECT Name,PL.PlaylistId, TrackId FROM Playlist AS PL JOIN PlaylistTrack AS PT ON
PL.PlaylistId=PT.PlaylistId')
i =0
for row in c.fetchall():
    i=i+1
    if(row[2]<3):
        print(row)
print('before filter, query number is: %d' %(i))
end = time.time()
beforeopt=end-start

print ("Before optimization the time is: %f s" %(beforeopt))




start = time.time()
c.execute('SELECT Name,PL.PlaylistId, TrackId FROM Playlist AS PL JOIN PlaylistTrack AS PT ON
PL.PlaylistId=PT.PlaylistId WHERE PT.TrackId<3' )
i = 0
for row in c.fetchall():
    i=i+1
    print(row)

end = time.time()
firsttime = end-start
print('Use new query, query number is: %d'%(i))
print ('After optimization the time is: %f s'%(firsttime))

total = end-start
for m in range(0, 8):
    start = time.time()
    c.execute('SELECT Name,PL.PlaylistId, TrackId FROM Playlist AS PL JOIN PlaylistTrack AS PT ON
PL.PlaylistId=PT.PlaylistId WHERE PT.TrackId<3' )
```

```python
    i = 0
    for row in c.fetchall():
        i=i+1
        print(row)

    end = time.time()
    print('Use new query, query number is: %d'%(i))
    print ('After optimization the time is:%f s'%(end-start))
    total = total + end - start

print("The average time is:%f s, The first optimization time is:%f s, before optimization time is:%f s" %(total/10,firsttime, beforeopt))
```

```
vagrant@precise32:~/advance_database_test$ python3 sqlite_test.py
('For Those About To Rock (We Salute You)', 1, 1)
('Balls to the Wall', 1, 2)
('Fast As a Shark', 1, 3)
('Restless and Wild', 1, 4)
('Fast As a Shark', 5, 3)
('Restless and Wild', 5, 4)
('For Those About To Rock (We Salute You)', 8, 1)
('Balls to the Wall', 8, 2)
('Fast As a Shark', 8, 3)
('Restless and Wild', 8, 4)
('For Those About To Rock (We Salute You)', 17, 1)
('Balls to the Wall', 17, 2)
('Fast As a Shark', 17, 3)
('Restless and Wild', 17, 4)
before filter, query number is: 8715
Before optimization the time is: 0.032256 s
('For Those About To Rock (We Salute You)', 1, 1)
('For Those About To Rock (We Salute You)', 8, 1)
('For Those About To Rock (We Salute You)', 17, 1)
('Balls to the Wall', 1, 2)
('Balls to the Wall', 8, 2)
('Balls to the Wall', 17, 2)
Use new query, query number is: 6
After optimization the time is: 0.000960 s
('For Those About To Rock (We Salute You)', 1, 1)
('For Those About To Rock (We Salute You)', 8, 1)
('For Those About To Rock (We Salute You)', 17, 1)
```

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After optimization the time is:0.000155 s
('For Those About To Rock (We Salute You)', 1, 1)
('For Those About To Rock (We Salute You)', 8, 1)
('For Those About To Rock (We Salute You)', 17, 1)
('Balls to the Wall', 1, 2)
('Balls to the Wall', 8, 2)
('Balls to the Wall', 17, 2)
Use new query, query number is: 6
After optimization the time is:0.000428 s
('For Those About To Rock (We Salute You)', 1, 1)
('For Those About To Rock (We Salute You)', 8, 1)
('For Those About To Rock (We Salute You)', 17, 1)
('Balls to the Wall', 1, 2)
('Balls to the Wall', 8, 2)
('Balls to the Wall', 17, 2)
Use new query, query number is: 6
After optimization the time is:0.000135 s
('For Those About To Rock (We Salute You)', 1, 1)
('For Those About To Rock (We Salute You)', 8, 1)
('For Those About To Rock (We Salute You)', 17, 1)
('Balls to the Wall', 1, 2)
('Balls to the Wall', 8, 2)
('Balls to the Wall', 17, 2)
Use new query, query number is: 6
After optimization the time is:0.000484 s
('For Those About To Rock (We Salute You)', 1, 1)
('For Those About To Rock (We Salute You)', 8, 1)
('For Those About To Rock (We Salute You)', 17, 1)
('Balls to the Wall', 1, 2)
('Balls to the Wall', 8, 2)
('Balls to the Wall', 17, 2)
Use new query, query number is: 6
After optimization the time is:0.000137 s
('For Those About To Rock (We Salute You)', 1, 1)
('For Those About To Rock (We Salute You)', 8, 1)
('For Those About To Rock (We Salute You)', 17, 1)
('Balls to the Wall', 1, 2)
('Balls to the Wall', 8, 2)
('Balls to the Wall', 17, 2)
Use new query, query number is: 6
After optimization the time is:0.000857 s
The average time is:0.000418 s, The first optimization time is:0.000960 s, before optimization time is:0.032256 s
vagrant@precise32:~/advance_database_test$
```