باسلام من ابوالفضل وکیلی هستم

دانشجو دانشگاه بین المللی امام رضا(ع)

امتحان درس آزمایشگاه پایگاه داده

شماره دانشجویی : 96154162

استاد راهنما : استاد مهاجر مروی

8 دی ماه 1398

ابتدا کتاب خانه های مورد نیاز جهت اتصال به دیتابیس و نمایش جداول و گزارش ها را درون برنامه وارد می نماییم. ¶

In [5]:

```python
import pyodbc
import pandas as pd
```

به دیتابیس TivaSMOL متصل می شویم

In [48]:

```python
server_name = '.'
db_name = 'TivaSMOld'
conn = pyodbc.connect('Driver={SQL Server};'
                      'Server=' + server_name + ';'
                      'Database=' + db_name + ';'
                      'Trusted_Connection=yes;' ,
                      autocommit=True)
```

با استفاده از کوئری زیر می توان لیست تیبل ها را مشاهده نمود

In [7]:

```python
list_tables = '''
select *
from INFORMATION_SCHEMA.TABLES
'''
```

In [9]:

```
1  pd.read_sql(list_tables, conn)
```

Out[9]:

	TABLE_CATALOG	TABLE_SCHEMA	TABLE_NAME	TABLE_TYPE
0	TivaSMOld	dbo	ReciveFile	BASE TABLE
1	TivaSMOld	dbo	FinalTransaction	BASE TABLE
2	TivaSMOld	dbo	ReciveFileTemp	BASE TABLE

حال به حل سوالات می پردازیم

سوال اول

In [21]:

```
1  question1 = '''
2  select ID as 'شناسه', ReciveFile as 'فایل های دریافت شده'
3  from ReciveFile
4  where ReciveFile like '%04-07_11-55%'
5  '''
```

In [22]:

```
1  pd.read_sql(question1, conn)
```

Out[22]:

	شناسه	فایل های دریافت شده
0	41286	1-image17-04-07_11-55-00-62.jpg
1	41287	1-image17-04-07_11-55-00-70.jpg
2	41288	1-image17-04-07_11-55-00-82.jpg
3	41289	1-image17-04-07_11-55-00-90.jpg
4	41290	1-image17-04-07_11-55-01-02.jpg
5	41291	1-image17-04-07_11-55-01-10.jpg
6	41292	1-image17-04-07_11-55-01-22.jpg
7	41293	1-image17-04-07_11-55-01-30.jpg
8	41294	1-image17-04-07_11-55-01-42.jpg
9	41295	1-image17-04-07_11-55-01-50.jpg
10	41296	1-image17-04-07_11-55-01-62.jpg
11	41297	1-image17-04-07_11-55-01-70.jpg
12	41298	1-image17-04-07_11-55-01-82.jpg
13	41299	1-image17-04-07_11-55-01-90.jpg
14	41300	1-image17-04-07_11-55-02-02.jpg
15	41301	1-image17-04-07_11-55-02-10.jpg
16	41302	1-image17-04-07_11-55-02-22.jpg
17	41303	1-image17-04-07_11-55-02-30.jpg
18	41306	1-image17-04-07_11-55-02-62.jpg
19	41307	1-image17-04-07_11-55-02-70.jpg
20	41308	1-image17-04-07_11-55-02-82.jpg
21	41309	1-image17-04-07_11-55-02-90.jpg
22	41310	1-image17-04-07_11-55-03-02.jpg
23	41311	1-image17-04-07_11-55-03-10.jpg
24	41312	1-image17-04-07_11-55-03-22.jpg
25	41313	1-image17-04-07_11-55-03-30.jpg
26	41314	1-image17-04-07_11-55-03-42.jpg
27	41315	1-image17-04-07_11-55-03-50.jpg
28	41316	1-image17-04-07_11-55-03-62.jpg
29	41317	1-image17-04-07_11-55-03-70.jpg
...	...	...
268	41569	1-image17-04-07_11-55-28-90.jpg
269	41570	1-image17-04-07_11-55-29-02.jpg

	شناسه	فایل های دریافت شده
270	41571	1-image17-04-07_11-55-38-58.jpg
271	41572	1-image17-04-07_11-55-38-66.jpg
272	41573	1-image17-04-07_11-55-38-78.jpg
273	41574	1-image17-04-07_11-55-49-54.jpg
274	41575	1-image17-04-07_11-55-49-66.jpg
275	41576	1-image17-04-07_11-55-49-74.jpg
276	41577	1-image17-04-07_11-55-49-86.jpg
277	41578	1-image17-04-07_11-55-49-94.jpg
278	41579	1-image17-04-07_11-55-50-06.jpg
279	41580	1-image17-04-07_11-55-50-14.jpg
280	41581	1-image17-04-07_11-55-50-26.jpg
281	41582	1-image17-04-07_11-55-50-34.jpg
282	41583	1-image17-04-07_11-55-50-46.jpg
283	41584	1-image17-04-07_11-55-50-54.jpg
284	41585	1-image17-04-07_11-55-50-66.jpg
285	41586	1-image17-04-07_11-55-50-74.jpg
286	41587	1-image17-04-07_11-55-50-86.jpg
287	41588	1-image17-04-07_11-55-50-94.jpg
288	41589	1-image17-04-07_11-55-51-06.jpg
289	41590	1-image17-04-07_11-55-51-14.jpg
290	41591	1-image17-04-07_11-55-51-26.jpg
291	41592	1-image17-04-07_11-55-51-34.jpg
292	41593	1-image17-04-07_11-55-51-46.jpg
293	41594	1-image17-04-07_11-55-51-54.jpg
294	41595	1-image17-04-07_11-55-51-66.jpg
295	41596	1-image17-04-07_11-55-51-74.jpg
296	41597	1-image17-04-07_11-55-51-86.jpg
297	41598	1-image17-04-07_11-55-51-94.jpg

298 rows × 2 columns

سوال دوم

In [25]:

```
1  question2 = '''
2  select R.ID as 'شناسه',
3                  R.ReciveFile ,
4                  RT.ReciveFile
5  from ReciveFileTemp RT
6  inner join ReciveFile R
7  on RT.ID = R.ID
8  '''
```

In [26]:

```
1  pd.read_sql(question2, conn)
```

Out[26]:

	شناسه	ReciveFile	ReciveFile
0	32056	1-image17-04-07_11-25-07-18.jpg	1-image17-04-07_11-25-07-18.jpg
1	32098	1-image17-04-07_11-25-20-58.jpg	1-image17-04-07_11-25-20-58.jpg
2	32180	1-image17-04-07_11-25-46-62.jpg	1-image17-04-07_11-25-46-62.jpg
3	32183	1-image17-04-07_11-25-56-78.jpg	1-image17-04-07_11-25-56-78.jpg
4	32239	1-image17-04-07_11-26-13-06.jpg	1-image17-04-07_11-26-13-06.jpg
5	32365	1-image17-04-07_11-26-44-34.jpg	1-image17-04-07_11-26-44-34.jpg
6	32512	1-image17-04-07_11-27-08-14.jpg	1-image17-04-07_11-27-08-14.jpg
7	32531	1-image17-04-07_11-27-20-30.jpg	1-image17-04-07_11-27-20-30.jpg
8	33286	1-image17-04-07_11-29-35-74.jpg	1-image17-04-07_11-29-35-74.jpg
9	33422	1-image17-04-07_11-30-08-42.jpg	1-image17-04-07_11-30-08-42.jpg
10	33529	1-image17-04-07_11-30-38-66.jpg	1-image17-04-07_11-30-38-66.jpg
11	33725	1-image17-04-07_11-31-27-18.jpg	1-image17-04-07_11-31-27-18.jpg
12	34171	1-image17-04-07_11-32-21-02.jpg	1-image17-04-07_11-32-21-02.jpg
13	34205	1-image17-04-07_11-32-33-78.jpg	1-image17-04-07_11-32-33-78.jpg
14	34214	1-image17-04-07_11-32-44-30.jpg	1-image17-04-07_11-32-44-30.jpg
15	34441	1-image17-04-07_11-33-36-26.jpg	1-image17-04-07_11-33-36-26.jpg
16	34549	1-image17-04-07_11-33-56-22.jpg	1-image17-04-07_11-33-56-22.jpg
17	34732	1-image17-04-07_11-34-23-78.jpg	1-image17-04-07_11-34-23-78.jpg
18	35090	1-image17-04-07_11-35-27-74.jpg	1-image17-04-07_11-35-27-74.jpg
19	35426	1-image17-04-07_11-36-20-34.jpg	1-image17-04-07_11-36-20-34.jpg
20	35512	1-image17-04-07_11-36-38-10.jpg	1-image17-04-07_11-36-38-10.jpg
21	35536	1-image17-04-07_11-36-49-86.jpg	1-image17-04-07_11-36-49-86.jpg
22	35696	1-image17-04-07_11-37-24-70.jpg	1-image17-04-07_11-37-24-70.jpg
23	35926	1-image17-04-07_11-37-57-46.jpg	1-image17-04-07_11-37-57-46.jpg
24	36089	1-image17-04-07_11-38-32-30.jpg	1-image17-04-07_11-38-32-30.jpg
25	36857	1-image17-04-07_11-40-07-46.jpg	1-image17-04-07_11-40-07-46.jpg
26	36902	1-image17-04-07_11-40-21-94.jpg	1-image17-04-07_11-40-21-94.jpg
27	37385	1-image17-04-07_11-42-18-02.jpg	1-image17-04-07_11-42-18-02.jpg
28	37432	1-image17-04-07_11-42-42-10.jpg	1-image17-04-07_11-42-42-10.jpg
29	37495	1-image17-04-07_11-43-08-34.jpg	1-image17-04-07_11-43-08-34.jpg
...	...	...	...
7824	54952	1-image17-04-07_12-33-41-63.jpg	1-image17-04-07_12-33-41-63.jpg
7825	54953	1-image17-04-07_12-33-41-75.jpg	1-image17-04-07_12-33-41-75.jpg

	شناسه	ReciveFile	ReciveFile
7826	54955	1-image17-04-07_12-33-41-95.jpg	1-image17-04-07_12-33-41-95.jpg
7827	54956	1-image17-04-07_12-33-42-03.jpg	1-image17-04-07_12-33-42-03.jpg
7828	54958	1-image17-04-07_12-33-42-23.jpg	1-image17-04-07_12-33-42-23.jpg
7829	54959	1-image17-04-07_12-33-42-35.jpg	1-image17-04-07_12-33-42-35.jpg
7830	54961	1-image17-04-07_12-33-42-55.jpg	1-image17-04-07_12-33-42-55.jpg
7831	54962	1-image17-04-07_12-33-42-63.jpg	1-image17-04-07_12-33-42-63.jpg
7832	54965	1-image17-04-07_12-33-42-95.jpg	1-image17-04-07_12-33-42-95.jpg
7833	54967	1-image17-04-07_12-33-43-15.jpg	1-image17-04-07_12-33-43-15.jpg
7834	54968	1-image17-04-07_12-33-43-23.jpg	1-image17-04-07_12-33-43-23.jpg
7835	54970	1-image17-04-07_12-33-52-51.jpg	1-image17-04-07_12-33-52-51.jpg
7836	54973	1-image17-04-07_12-33-52-79.jpg	1-image17-04-07_12-33-52-79.jpg
7837	54974	1-image17-04-07_12-33-52-91.jpg	1-image17-04-07_12-33-52-91.jpg
7838	54976	1-image17-04-07_12-33-53-11.jpg	1-image17-04-07_12-33-53-11.jpg
7839	54977	1-image17-04-07_12-33-53-19.jpg	1-image17-04-07_12-33-53-19.jpg
7840	54979	1-image17-04-07_12-33-53-39.jpg	1-image17-04-07_12-33-53-39.jpg
7841	54980	1-image17-04-07_12-33-53-51.jpg	1-image17-04-07_12-33-53-51.jpg
7842	54982	1-image17-04-07_12-33-53-71.jpg	1-image17-04-07_12-33-53-71.jpg
7843	54983	1-image17-04-07_12-33-53-79.jpg	1-image17-04-07_12-33-53-79.jpg
7844	54986	1-image17-04-07_12-33-54-11.jpg	1-image17-04-07_12-33-54-11.jpg
7845	54988	1-image17-04-07_12-33-54-31.jpg	1-image17-04-07_12-33-54-31.jpg
7846	54989	1-image17-04-07_12-33-54-39.jpg	1-image17-04-07_12-33-54-39.jpg
7847	54991	1-image17-04-07_12-33-54-59.jpg	1-image17-04-07_12-33-54-59.jpg
7848	54994	1-image17-04-07_12-34-04-59.jpg	1-image17-04-07_12-34-04-59.jpg
7849	54995	1-image17-04-07_12-34-04-67.jpg	1-image17-04-07_12-34-04-67.jpg
7850	54997	1-image17-04-07_12-34-04-87.jpg	1-image17-04-07_12-34-04-87.jpg
7851	54998	1-image17-04-07_12-34-04-99.jpg	1-image17-04-07_12-34-04-99.jpg
7852	55000	1-image17-04-07_12-34-05-19.jpg	1-image17-04-07_12-34-05-19.jpg
7853	55001	1-image17-04-07_12-34-05-27.jpg	1-image17-04-07_12-34-05-27.jpg

7854 rows × 3 columns

سوال سوم

In [31]:

```
question3 = '''
select *
from FinalTransaction
where MainPlate like N'%۳۶ب%'
'''
```

In [32]:

```python
pd.read_sql(question3, conn)
```

Out[32]:

ColorFrameFinal	MainThumbFile	MainPlate	MaxSpeed	AvgSp
x10JFIF\x00\x01\x02\x01...	b'\xff\xd8\xff\xe0\x00\x10JFIF\x00\x01\x01\x01...	۳۶۸۲۵۱۲ب	0.0	

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سوال چهارم

</div>

In [33]:

```python
question4 = '''
select *
from FinalTransaction
where FiLoSpeed = 0
'''
```
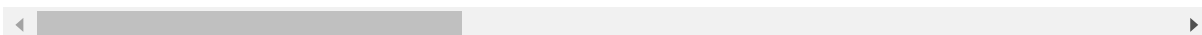
In [45]:

```
1  pd.read_sql(question4, conn)
```

Out[45]:

	ID	MainFrameFinal	ColorFrameFinal
0	154	b'\xff\xd8\xff\xe0\x00\x10JFIF\x00\x01\x02\x01...	b'\xff\xd8\xff\xe0\x00\x10JFIF\x00\x01\x02\x01...
1	156	b'\xff\xd8\xff\xe0\x00\x10JFIF\x00\x01\x02\x01...	b'\xff\xd8\xff\xe0\x00\x10JFIF\x00\x01\x02\x01...
2	159	b'\xff\xd8\xff\xe0\x00\x10JFIF\x00\x01\x02\x01...	b'\xff\xd8\xff\xe0\x00\x10JFIF\x00\x01\x02\x01...
3	160	b'\xff\xd8\xff\xe0\x00\x10JFIF\x00\x01\x02\x01...	b'\xff\xd8\xff\xe0\x00\x10JFIF\x00\x01\x02\x01...
4	163	b'\xff\xd8\xff\xe0\x00\x10JFIF\x00\x01\x02\x01...	b'\xff\xd8\xff\xe0\x00\x10JFIF\x00\x01\x02\x01...
5	165	b'\xff\xd8\xff\xe0\x00\x10JFIF\x00\x01\x02\x01...	b'\xff\xd8\xff\xe0\x00\x10JFIF\x00\x01\x02\x01...
6	166	b'\xff\xd8\xff\xe0\x00\x10JFIF\x00\x01\x02\x01...	b'\xff\xd8\xff\xe0\x00\x10JFIF\x00\x01\x02\x01...
7	167	b'\xff\xd8\xff\xe0\x00\x10JFIF\x00\x01\x02\x01...	b'\xff\xd8\xff\xe0\x00\x10JFIF\x00\x01\x02\x01...
8	171	b'\xff\xd8\xff\xe0\x00\x10JFIF\x00\x01\x02\x01...	b'\xff\xd8\xff\xe0\x00\x10JFIF\x00\x01\x02\x01...
9	174	b'\xff\xd8\xff\xe0\x00\x10JFIF\x00\x01\x02\x01...	b'\xff\xd8\xff\xe0\x00\x10JFIF\x00\x01\x02\x01...

	ID	MainFrameFinal	ColorFrameFinal	سوال پنجم
10	175	b'\xff\xd8\xff\xe0\x00\x10JFIF\x00\x01\x02\x01...	b'\xff\xd8\xff\xe0\x00\x10JFIF\x00\x01\x02\x01...	
11	177	b'\xff\xd8\xff\xe0\x00\x10JFIF\x00\x01\x02\x01...	b'\xff\xd8\xff\xe0\x00\x10JFIF\x00\x01\x02\x01...	
12	178	b'\xff\xd8\xff\xe0\x00\x10JFIF\x00\x01\x02\x01...	b'\xff\xd8\xff\xe0\x00\x10JFIF\x00\x01\x02\x01...	
13	180	b'\xff\xd8\xff\xe0\x00\x10JFIF\x00\x01\x02\x01...	b'\xff\xd8\xff\xe0\x00\x10JFIF\x00\x01\x02\x01...	
14	181	b'\xff\xd8\xff\xe0\x00\x10JFIF\x00\x01\x02\x01...	b'\xff\xd8\xff\xe0\x00\x10JFIF\x00\x01\x02\x01...	
15	182	b'\xff\xd8\xff\xe0\x00\x10JFIF\x00\x01\x02\x01...	b'\xff\xd8\xff\xe0\x00\x10JFIF\x00\x01\x02\x01...	
16	183	b'\xff\xd8\xff\xe0\x00\x10JFIF\x00\x01\x02\x01...	b'\xff\xd8\xff\xe0\x00\x10JFIF\x00\x01\x02\x01...	
17	184	b'\xff\xd8\xff\xe0\x00\x10JFIF\x00\x01\x02\x01...	b'\xff\xd8\xff\xe0\x00\x10JFIF\x00\x01\x02\x01...	
18	185	b'\xff\xd8\xff\xe0\x00\x10JFIF\x00\x01\x02\x01...	b'\xff\xd8\xff\xe0\x00\x10JFIF\x00\x01\x02\x01...	
19	186	b'\xff\xd8\xff\xe0\x00\x10JFIF\x00\x01\x02\x01...	b'\xff\xd8\xff\xe0\x00\x10JFIF\x00\x01\x02\x01...	

سوال پنجم

جهت خراب نشدن تیبل اصلی یک تیبل موقت می سازیم

In [49]:

```
1  backup_from_table = '''
2  select *
3  into #T
4  from FinalTransaction
5  '''
```

In [50]:

```
1  cursor = conn.cursor()
2  cursor.execute(backup_from_table)
```

Out[50]:

<pyodbc.Cursor at 0xbb55920>

In [54]:

```
1  update = '''
2  update #T
3  set
4      MainFrameFinal = cast(0 as varbinary)
5  where
6      widthImg > 70 and
7      AvgSpeed <> 0 and
8      len(FrameNames) > 20
9  '''
```

In [56]:

```
1  cursor.execute(update)
```

Out[56]:

<pyodbc.Cursor at 0xbb55920>

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جدول موقت با موفقیت بروزرسانی شد. حال می توانیم آن را پاک نماییم

</div>

In [57]:

```
1  delete = '''
2  drop table #T
3  '''
```

In [58]:

```
1  cursor.execute(delete)
```

Out[58]:

<pyodbc.Cursor at 0xbb55920>

In [58]:

```
1  cursor.execute(delete)
```

Out[58]:

<pyodbc.Cursor at 0xbb55920>