Assignment: SQL Notebook for Peer Assignment

Estimated time needed: **60** minutes.

Introduction

Using this Python notebook you will:

1. Understand the Spacex DataSet
2. Load the dataset into the corresponding table in a Db2 database
3. Execute SQL queries to answer assignment questions

Overview of the DataSet

SpaceX has gained worldwide attention for a series of historic milestones.

It is the only private company ever to return a spacecraft from low-earth orbit, which it first accomplished in December 2010. SpaceX advertises Falcon 9 rocket launches on its website with a cost of 62 million dollars wheras other providers cost upward of 165 million dollars each, much of the savings is because Space X can reuse the first stage.

Therefore if we can determine if the first stage will land, we can determine the cost of a launch.

This information can be used if an alternate company wants to bid against SpaceX for a rocket launch.

This dataset includes a record for each payload carried during a SpaceX mission into outer space.

Download the datasets

This assignment requires you to load the spacex dataset.

In many cases the dataset to be analyzed is available as a .CSV (comma separated values) file, perhaps on the internet. Click on the link below to download and save the dataset (.CSV file):

Spacex DataSet

In [ ]:
```
!pip install sqlalchemy==1.3.9
```

Connect to the database

Let us first load the SQL extension and establish a connection with the database

In [ ]:
```
#Please uncomment and execute the code below if you are working locally.

#!pip install ipython-sql
```

In [ ]:
```
%load_ext sql
```

In [ ]:
```
import csv, sqlite3

con = sqlite3.connect("my_data1.db")
cur = con.cursor()
```

In [ ]:
```
!pip install -q pandas==1.1.5
```

In [ ]:
```
%sql sqlite:///my_data1.db
```

In [ ]:
```
import pandas as pd
df = pd.read_csv("https://cf-courses-data.s3.us.cloud-object-storage.appdomain.clou
df.to_sql("SPACEXTBL", con, if_exists='replace', index=False,method="multi")
```

Note:This below code is added to remove blank rows from table

In [ ]:
```
%sql create table SPACEXTABLE as select * from SPACEXTBL where Date is not null
```

Tasks

Now write and execute SQL queries to solve the assignment tasks.

Note: If the column names are in mixed case enclose it in double quotes For Example "Landing_Outcome"

Task 1

Display the names of the unique launch sites in the space mission

In [ ]:
```

```

Task 2

Display 5 records where launch sites begin with the string 'CCA'

In [ ]:

Task 3

Display the total payload mass carried by boosters launched by NASA (CRS)

In [ ]:

Task 4

Display average payload mass carried by booster version F9 v1.1

In [ ]:

Task 5

List the date when the first succesful landing outcome in ground pad was acheived.

Hint:Use min function

In [ ]:

Task 6

List the names of the boosters which have success in drone ship and have payload mass greater than 4000 but less than 6000

In [ ]:

Task 7

List the total number of successful and failure mission outcomes

In [ ]:

Task 8

List the names of the booster_versions which have carried the maximum payload mass. Use a subquery

In [ ]:

Task 9

List the records which will display the month names, failure landing_outcomes in drone ship ,booster versions, launch_site for the months in year 2015.

Note: SQLLite does not support monthnames. So you need to use substr(Date, 6,2) as month to get the months and substr(Date,0,5)='2015' for year.

In [ ]:

Task 10

Rank the count of landing outcomes (such as Failure (drone ship) or Success (ground pad)) between the date 2010-06-04 and 2017-03-20, in descending order.

In [ ]:

Reference Links

- Hands-on Lab : String Patterns, Sorting and Grouping
- Hands-on Lab: Built-in functions
- Hands-on Lab : Sub-queries and Nested SELECT Statements
- Hands-on Tutorial: Accessing Databases with SQL magic
- Hands-on Lab: Analyzing a real World Data Set

Author(s)

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Change log

Date	Version	Changed by	Change Description
2021-07-09	0.2	Lakshmi Holla	Changes made in magic sql
2021-05-20	0.1	Lakshmi Holla	Created Initial Version