

Tasks

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

Task 1

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

In [7]: `Sql SELECT DISTINCT Launch_Site FROM spacex;`

4 rows affected.

Out[7]:  
Launch\_Site  
CCAFS LC-40  
VAFB SLC-4E  
KSC LC-39A  
CCAFS SLC-40

Task 2

Display 3 records where launch sites begin with the string 'CCA'

In [8]: `Sql SELECT * FROM spacex WHERE Launch_Site LIKE 'CCA%' LIMIT 3;`

5 rows affected.

Out[8]:

Date	Time (UTC)	Booster_Version	Launch_Site	Payload	PAYLOAD_MASS_KG_	Orbit	Customer	Mission_Outcome	Landing_Outcome
2010-04-08	18:45:00	FS v1.2 B0303	CCAFS LC-40	Dragon Spacecraft Qualification Unit	0	LEO	SpaceX	Success	Failure (parachute)
2010-04-08	10:45:00	FS v1.2 B0304	CCAFS LC-40	Dragon demo flight C1, two CubeSats, launch of Dragon cheese	0	LEO (ISS)	NASA (COTS) HRD	Success	Failure (parachute)
2010-04-22	7:44:00	FS v1.2 B0305	CCAFS LC-40	Dragon demo flight C2	525	LEO (ISS)	NASA (COTS)	Success	No attempt
2010-10-08	0:36:00	FS v1.2 B0306	CCAFS LC-40	SpaceX CRS-1	800	LEO (ISS)	NASA (CRS)	Success	No attempt
2010-03-01	15:10:00	FS v1.2 B0307	CCAFS LC-40	SpaceX CRS-2	877	LEO (ISS)	NASA (CRS)	Success	No attempt

Task 3

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

In [51]: `Sql SELECT SUM(Payload_Mass_Kg_) FROM spacex WHERE Customer='NASA (CRS)';`

1 rows affected.

Out[51]:  
SUM(Payload\_Mass\_Kg\_)  
45586

Task 4

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

In [50]: `Sql SELECT AVG(Payload_Mass_Kg_) FROM spacex WHERE Booster_Version='FS v1.1';`

1 rows affected.

Out[50]:  
AVG(Payload\_Mass\_Kg\_)  
2020.655

Task 5

List the date when the first successful landing outcome in ground pad was achieved.

Hint: Use min function

In [54]: `Sql SELECT Date, 'Landing_Outcome' FROM spacex WHERE 'Landing_Outcome'='Success (ground pad)' Order by Date LIMIT 1`

1 rows affected.

Out[54]:  
Date Landing\_Outcome  
2015-10-22 Success (ground pad)

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 [56]: `Sql SELECT Booster_Version, Landing_Outcome, PAYLOAD_MASS_KG_ FROM spacex WHERE 'Landing_Outcome'='Success (drone ship)' AND PAYLOAD_MASS_KG_ between 4000 AND 6000`

4 rows affected.

Out[56]:

Booster_Version	Landing_Outcome	PAYLOAD_MASS_KG_
FS FT B1322	Success (drone ship)	4906
FS FT B1326	Success (drone ship)	4906
FS FT B1321.2	Success (drone ship)	5300
FS FT B1321.2	Success (drone ship)	5200

Task 7

List the total number of successful and failure mission outcomes

In [61]: `Sql SELECT COUNT(*) AS total_number_of_successful_mission_outcomes FROM spacex WHERE 'Landing_Outcome' LIKE 'Success';`

1 rows affected.

Out[61]:  
total\_number\_of\_successful\_mission\_outcomes  
61

In [59]: `Sql SELECT COUNT(*) AS total_number_of_failed_mission_outcomes FROM spacex WHERE 'Landing_Outcome' LIKE 'Failure';`

1 rows affected.

Out[59]:  
total\_number\_of\_failed\_mission\_outcomes  
10

Task 8

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

In [63]: `Sql SELECT Booster_Version, PAYLOAD_MASS_KG_ FROM spacex WHERE PAYLOAD_MASS_KG_=(SELECT max(PAYLOAD_MASS_KG_) FROM spacex)`

12 rows affected.

Out[63]:

Booster_Version	PAYLOAD_MASS_KG_
FS BS B1048.4	15000
FS BS B1048.4	15000
FS BS B1051.3	15000
FS BS B1055.4	15000
FS BS B1048.5	15000
FS BS B1051.4	15000
FS BS B1048.5	15000
FS BS B1050.2	15000
FS BS B1050.3	15000
FS BS B1051.6	15000
FS BS B1050.3	15000
FS BS B1048.7	15000

Task 9

List the failed landing outcomes in drone ship, their booster versions, and launch site names for in year 2015

In [65]: `Sql SELECT YEAR(Date) AS YEAR, Booster_Version, Launch_Site, Landing_Outcome FROM spacex WHERE YEAR(Date)=2015 and Landing_Outcome='Failure (drone ship)';`

2 rows affected.

Out[65]:

YEAR	Booster_Version	Launch_Site	Landing_Outcome
2015	FS v1.1 B1012	CCAFS LC-40	Failure (drone ship)
2015	FS v1.1 B1015	CCAFS LC-40	Failure (drone ship)

Task 10

Rank the count of landing outcomes (such as Failure (drone ship) or Success (ground pad)) between the date 2010-06-04 and 2017-03-26, in descending order

In [70]: `Sql SELECT Landing_Outcome, COUNT(*) AS Total_numbers_of_Outcome, Date FROM spacex where date between '2010-06-04' and '2017-03-26' group by Landing_Outcome ORDER BY Total_numbers_of_Outcome`

8 rows affected.

Out[70]:

Landing_Outcome	Total_numbers_of_Outcome	Date
No attempt	10	2010-04-22
Failure (drone ship)	5	2015-10-10
Success (drone ship)	5	2010-04-08
Controlled (poor)	3	2010-04-10
Success (ground pad)	3	2015-10-22
Uncontrolled (poor)	2	2010-04-20
Failure (parachute)	2	2010-04-04
Pre-deployed (drone ship)	1	2010-04-20