All Launch Site Names

%sql SELECT DISTINCT Launch_Site FROM SPACEXTABLE;

This query fetches all distinct launch sites listed in the Launch_Site column of the SPACEXTABLE table, removing any duplicates. This identifies all unique launch sites used by SpaceX as follows:

Launch_Site
CCAFS LC-40
VAFB SLC-4E
KSC LC-39A
CCAFS SLC-40

Launch Site Names Begin with 'CCA'

```
%%sql SELECT * FROM SPACEXTABLE
WHERE Launch_Site LIKE 'CCA%'
LIMIT 5;
```

This query retrieves up to 5 records from SPACEXTABLE where the Launch_Site value begins with “CCA”:

Date	Time (UTC)	Booster_Version	Launch_Site	Payload	PAYLOAD_MASS__KG_	Orbit	Customer	Mission_Outcome	Landing_Outcome
2010-06-04	18:45:00	F9 v1.0 B0003	CCAFS LC-40	Dragon Spacecraft Qualification Unit	0	LEO	SpaceX	Success	Failure (parachute)
2010-12-08	15:43:00	F9 v1.0 B0004	CCAFS LC-40	Dragon demo flight C1, two CubeSats, barrel of Brouere cheese	0	LEO (ISS)	NASA (COTS) NRO	Success	Failure (parachute)
2012-05-22	7:44:00	F9 v1.0 B0005	CCAFS LC-40	Dragon demo flight C2	525	LEO (ISS)	NASA (COTS)	Success	No attempt
2012-10-08	0:35:00	F9 v1.0 B0006	CCAFS LC-40	SpaceX CRS-1	500	LEO (ISS)	NASA (CRS)	Success	No attempt
2013-03-01	15:10:00	F9 v1.0 B0007	CCAFS LC-40	SpaceX CRS-2	677	LEO (ISS)	NASA (CRS)	Success	No attempt

Total Payload Mass

```
%%sql SELECT SUM(PAYLOAD_MASS__KG_)
FROM SPACEXTABLE
WHERE Customer = "NASA (CRS)";
```

This query calculates the total payload mass (in kilograms) for missions where NASA (Commercial Resupply Services, or CRS) is the customer.

SUM(PAYLOAD_MASS__KG_)
45596

Average Payload Mass by F9 v1.1

```
%%sql SELECT AVG(PAYLOAD_MASS__KG_)
FROM SPACEXTABLE
WHERE Booster_Version LIKE 'F9 v1.1%';
```

This query calculates the average payload mass (in kilograms) of missions that used a booster version beginning with “F9 v1.1” from the SPACEXTABLE table.

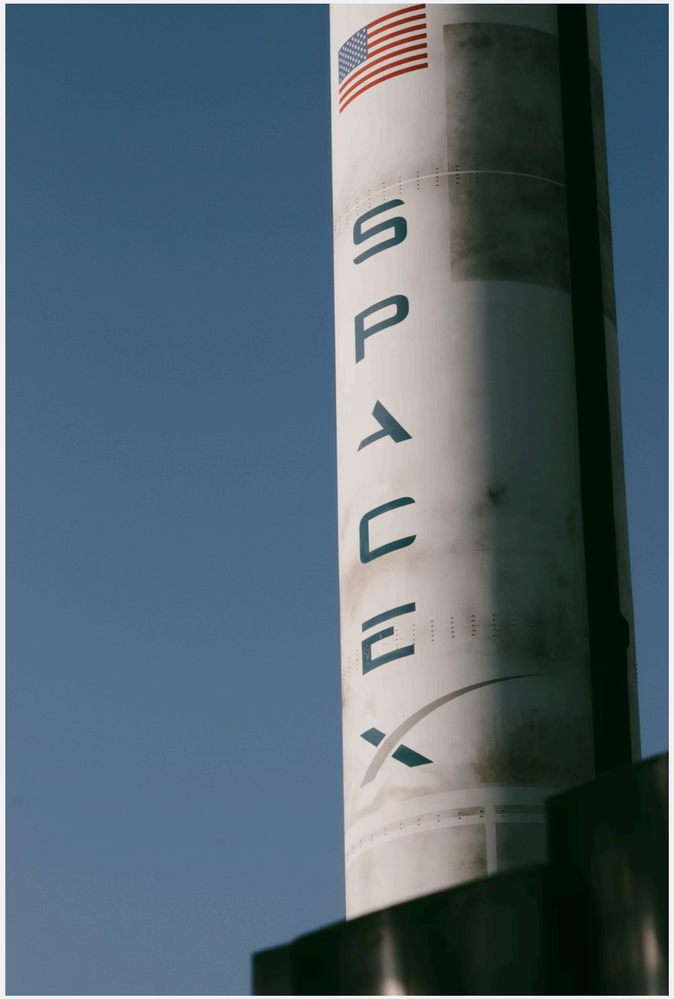
AVG(PAYLOAD_MASS__KG_)
2534.6666666666665

First Successful Ground Pad Landing Date

```
%%sql SELECT MIN(Date)
FROM SPACEXTABLE
WHERE Landing_Outcome = 'Success (ground pad)';
```

This query returns the earliest date (from the Date column) of a mission where the landing outcome was a successful ground pad landing.

MIN(Date)
2015-12-22



Successful Drone Ship Landing with Payload between 4000 and 6000

```
%%sql SELECT DISTINCT Booster_Version
FROM SPACEXTABLE
WHERE Landing_Outcome = 'Success (drone ship)'
AND PAYLOAD_MASS__KG_ BETWEEN 4000 AND 6000;
```

This query provides a unique list of booster versions from the SPACEXTABLE table that successfully landed on a drone ship and carried a payload mass between 4000 and 6000 kilograms.

Booster_Version
F9 FT B1022
F9 FT B1026
F9 FT B1021.2
F9 FT B1031.2

Total Number of Successful and Failure Mission Outcomes

These queries respectively provide the total count of successful and failed landings in the SPACEXTABLE, allowing quick insight into the overall performance of landings in this dataset.

```
%%sql SELECT COUNT(*)
FROM SPACEXTABLE
WHERE Landing_Outcome LIKE 'Success%';
```

This query returns the total number of missions with successful landings in the SPACEXTABLE:

COUNT(*)
61

```
%%sql SELECT COUNT(*)
FROM SPACEXTABLE
WHERE Landing_Outcome LIKE 'Failure%';
```

This query returns the total number of missions with failed landings in the SPACEXTABLE:

COUNT(*)
10

Boosters Carried Maximum Payload

```
%%sql SELECT Booster_Version
FROM SPACEXTABLE
WHERE PAYLOAD_MASS__KG_ = (
   SELECT MAX(PAYLOAD_MASS__KG_)
   FROM SPACEXTABLE
);
```

This query finds the Booster_Version (or versions) associated with the heaviest payload mass in the dataset. If multiple boosters have the same maximum payload mass, all such Booster_Version values will be returned.

Booster_Version
F9 B5 B1048.4
F9 B5 B1049.4
F9 B5 B1051.3
F9 B5 B1056.4
F9 B5 B1048.5
F9 B5 B1051.4
F9 B5 B1049.5
F9 B5 B1060.2
F9 B5 B1058.3
F9 B5 B1051.6
F9 B5 B1060.3
F9 B5 B1049.7

2015 Launch Records

```
%%sql SELECT
  CASE substr(Date, 6, 2)
    WHEN '01' THEN 'January'
    WHEN '02' THEN 'February'
    WHEN '03' THEN 'March'
    WHEN '04' THEN 'April'
    WHEN '05' THEN 'May'
    WHEN '06' THEN 'June'
    WHEN '07' THEN 'July'
    WHEN '08' THEN 'August'
    WHEN '09' THEN 'September'
    WHEN '10' THEN 'October'
    WHEN '11' THEN 'November'
    WHEN '12' THEN 'December'
  END AS Month,
  Booster_Version,
  Launch_Site,
  Landing_Outcome
FROM SPACEXTABLE
WHERE substr(Date, 0, 5) = '2015'
AND Landing_Outcome LIKE 'Failure (drone ship)';
```

This query generates a list of unsuccessful drone ship landings in 2015, including the month name, booster version, launch site, and landing outcome for each relevant record. The Month column is dynamically created based on the extracted month from the Date field.

Month	Booster_Version	Launch_Site	Landing_Outcome
January	F9 v1.1 B1012	CCAFS LC-40	Failure (drone ship)
April	F9 v1.1 B1015	CCAFS LC-40	Failure (drone ship)

Rank Landing Outcomes Between 2010-06-04 and 2017-03-20

```
SELECT
Landing_Outcome, COUNT(*) AS Outcome_Count
FROM
   SPACEXTABLE
WHERE
   Date BETWEEN '2010-06-04' AND '2017-03-20'
GROUP BY
   Landing_Outcome
ORDER BY
   Outcome_Count DESC;
```

This query returns a summary of how often each landing outcome occurred between June 4, 2010, and March 20, 2017, with the outcomes listed in descending order of frequency. Each unique Landing_Outcome in this date range will have an associated count showing how many times it occurred.

Landing_Outcome	Outcome_Count
No attempt	10
Success (drone ship)	5
Failure (drone ship)	5
Success (ground pad)	3
Controlled (ocean)	3
Uncontrolled (ocean)	2
Failure (parachute)	2
Precluded (drone ship)	1