Data Cleaning Log:

* Separated Location column into “State” and “Country” using Text to Column Function
* Moved countries from state column and marked “N/A” for cells where a state does not apply.
* Marked “N/A” under “Country” column for cells where no specific country was listed.
* Removed second column which was a duplicate of the first column.
* Renamed first column to “Index.”
* Renumbered line number column starting from 1 instead of 0.
* Removed UTC and Day of the week short forms to change the data types to date and time respectively.
* Separated “Date and Time” column into “Date” and “Time (UTC)” columns.
* Separated the “Details” Column into “Rocket” and “Mission\_and\_Payload” columns.
* Removed redundant “status” in front of all the “statusactive” and statusretired” entries in “Rocket\_Status” to make it easier to read.
* Changed the title of “price” column to include the units (million USD).
* Removed all corrupted characters that arose from special characters in other languages and the “degree” or “No.” symbol (º). Researched launches for accuracy of the “Organization,” “Rocket,” “Mission and Payload,” “Site\_Name,” and “State” columns.
* Converted “Mission\_Status” to 0 and 1 values instead of the four text options.
* Converted the “Index” column to “launch\_id” instead. This column has the sequence of 1 to 4324 starting from the oldest launch instead of the newest.

Hypothesis:

While the USA consistently maintains the highest number of launches since 1959, they also maintain the highest failed launch percentage.

Questions to Query with Excel or MySQL:

1. *What are the top 5 countries with the highest number of launches (excluding the USA)?*

Russia, Kazakhstan, France, China, and Japan.

1. *What is the percentage of failed launches for the USA and the next 5 countries from question No. 1?*

USA Failed/Total Launches= 163/1,349= 12.08%

Russia Failed/Total Launches= 93/1,398= 6.65%

Kazakhstan Failed/Total Launches= 93/701= 0.1326= 13.27%

France Failed/Total Launches= 18/303= 0.0594= 5.94%

China Failed/Total Launches= 25/269= 0.0965= 9.29%

Japan Failed/Total Launches= 13/126= 0.1092= 10.31%

USA has the second highest rate of failed launches. Kazakhstan has the highest rate.

1. *Which is the country with the lowest percentage of failed launches?*

France

1. *Comparing the USA launches to these 5 countries, do they have a lower percentage of failed launches or relatively the same?*

Only Japan and Kazakhstan have percentage higher than 10, but the other 3 are below. France, Russia, and China have the lowest percentages and as such are more successful in their launches.

1. *Is there a correlation between the month of the launch and a successful or failed launch?*

The most successful and failed launches are in June or December. This seems to be because most launches are held in those two months.

1. *What was the costliest failed launch and which country was it? (Consider inflation)*

The most expensive failed launch cost $450M in 1986, The Challenger.