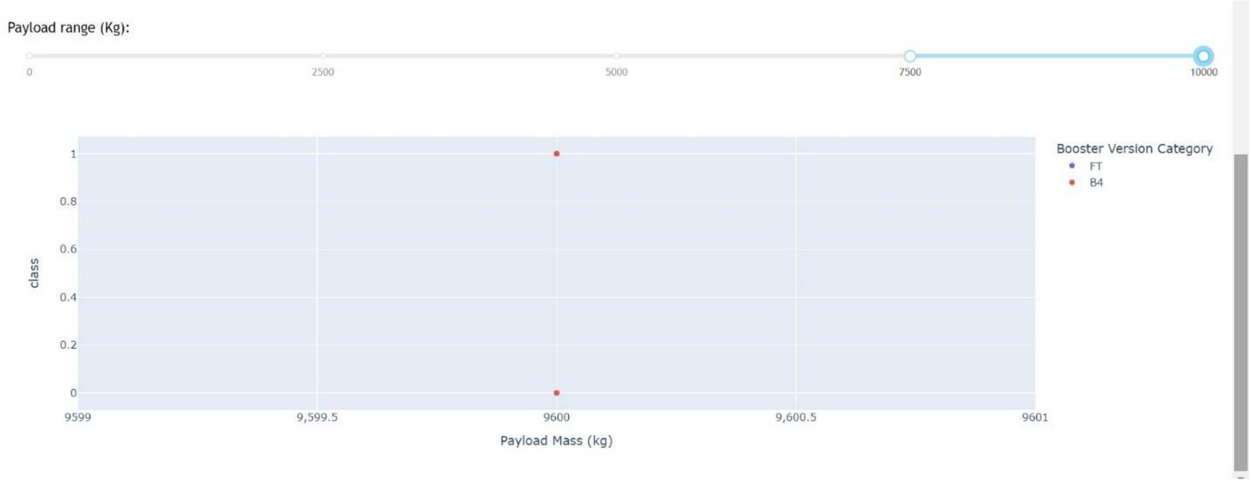
# 7 Dashboard with Plotly Dash Launch Success

*(URL https://brittabeta-sturdy-giggle-x5v4g7x7pvcpjww-8050.preview.app.github.dev/*

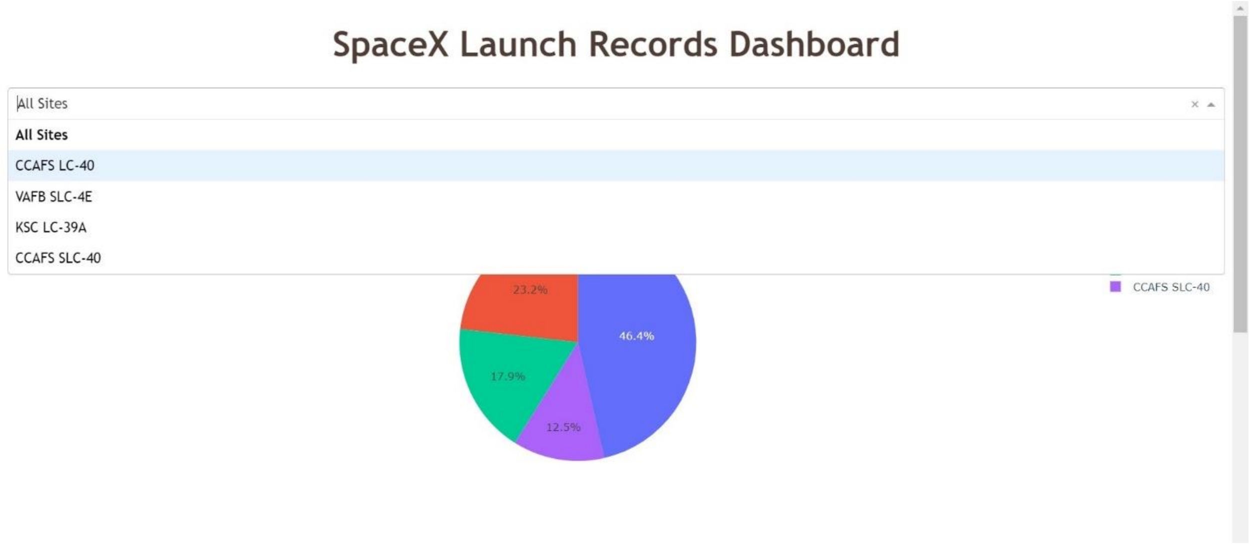
*If no longer available, apologies and let me know → and/or see: 7 Dashboard with Plotly Dash Launch Success or you can recreate it using the document spacex_dash_app.py)*

- Which site has the largest successful launches?
  - VAFB SLC-4E had 2 successful launches (class = 1) with a payload mass of 9,600 Kg; 1 was with a B4 booster and 1 was with the FT booster.

All Launch Sites 7,500 kg to 10,000 kg: Identified the largest payload with a 1 for success



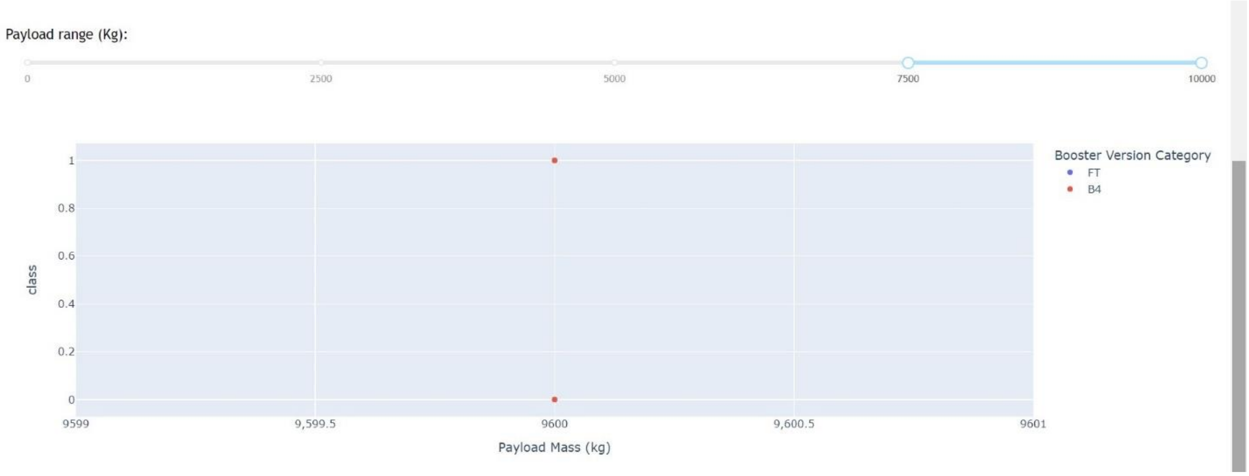
Dropdown: Choose different sites to reveal which site had a payload mass of 9,600 kg


SpaceX Launch Records Dashboard

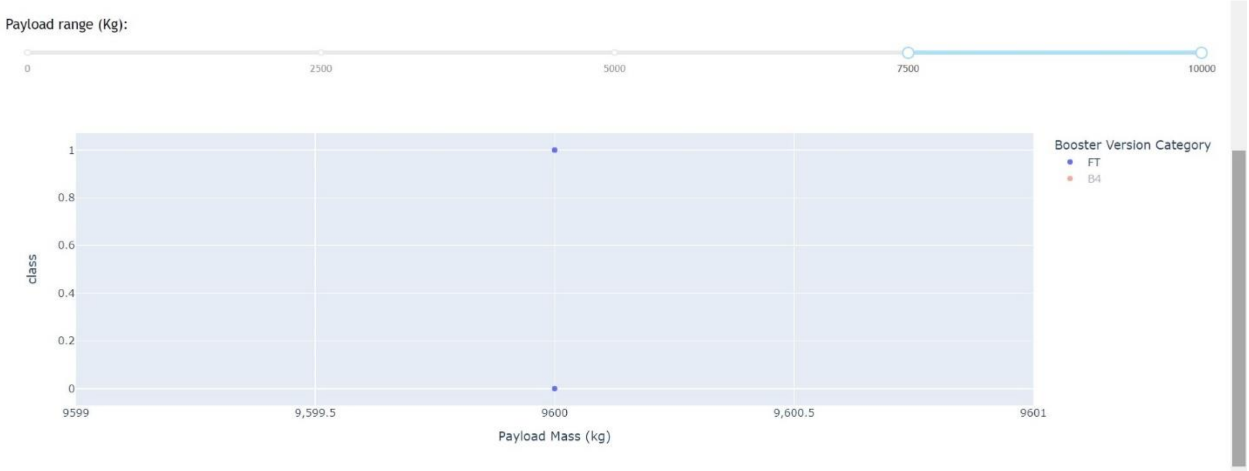
VAFB SLC-4E payload mass between 7,500 to 10,000 kg: see the successful launch of 9,600 kg

…but wait a second…is it just one successful launch?

The filter by booster version on the right shows 2 booster versions…



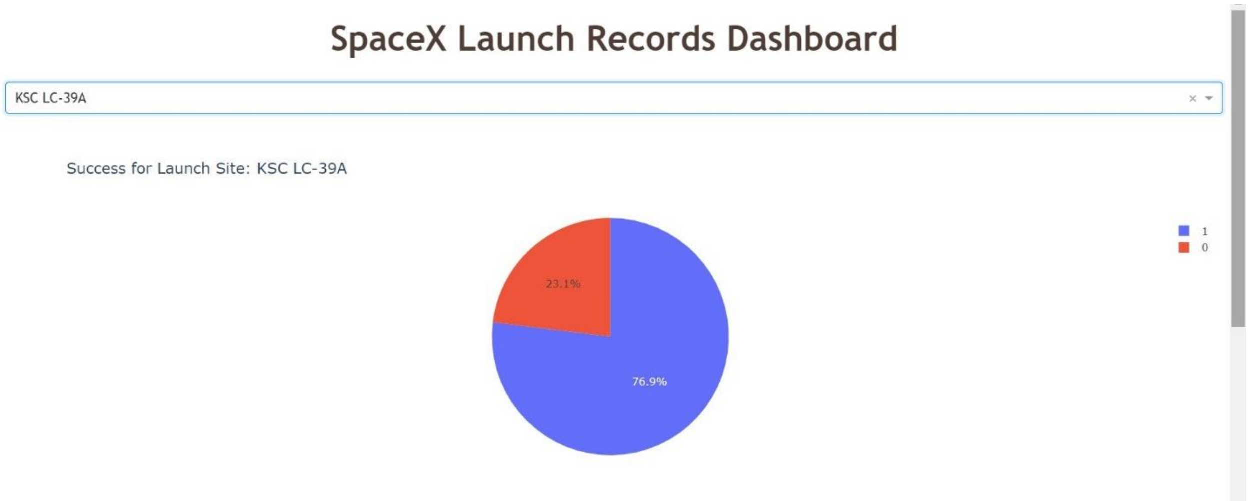
VAFB SLC-4E payload mass between 7,500 to 10,000 kg filtering out B4 booster: Displays also a successful 9,600 kg launch with the FT booster



- Which site has the highest launch success rate?
    - KSC LC-39A had the highest launch success rate with 76.9%
    - KSC LC-39A successes accounted for 23.2% off all successes

KSC LC-39A Pie Chart of 1 = Success in blue displays the highest success rate

When looking at all successful launches by site, what does this show?...

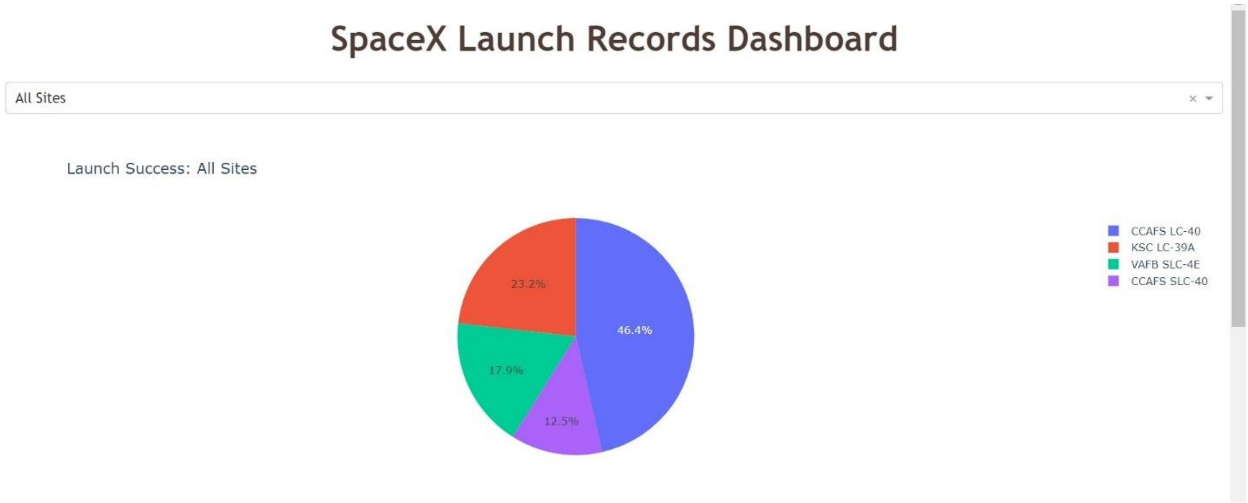


SpaceX Launch Records Dashboard

KSC LC-39A

Success for Launch Site: KSC LC-39A

Pie Chart of All Sites: KSC LC-39A in red showing KSC LC-39A percent of all successful launches



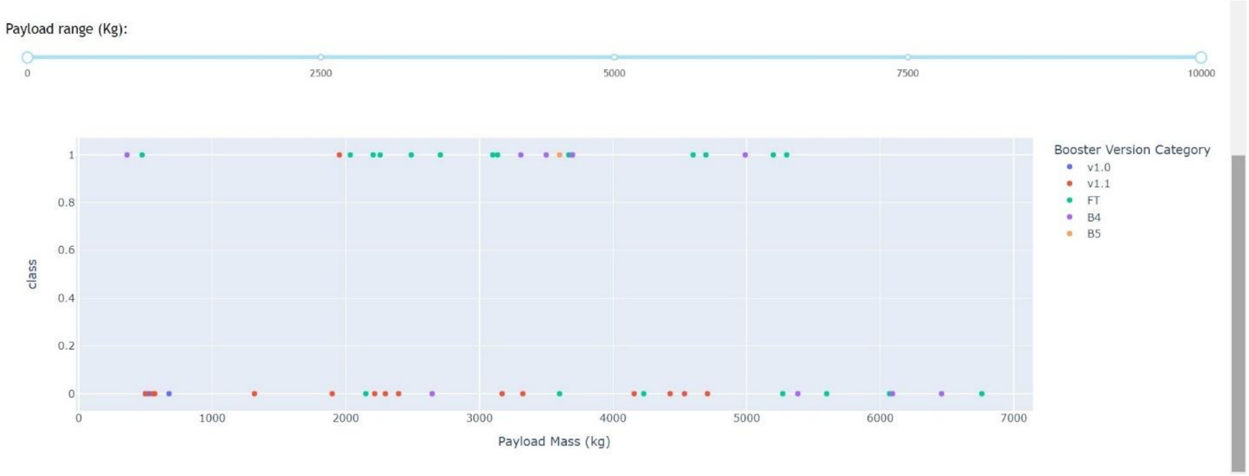
SpaceX Launch Records Dashboard

All Sites

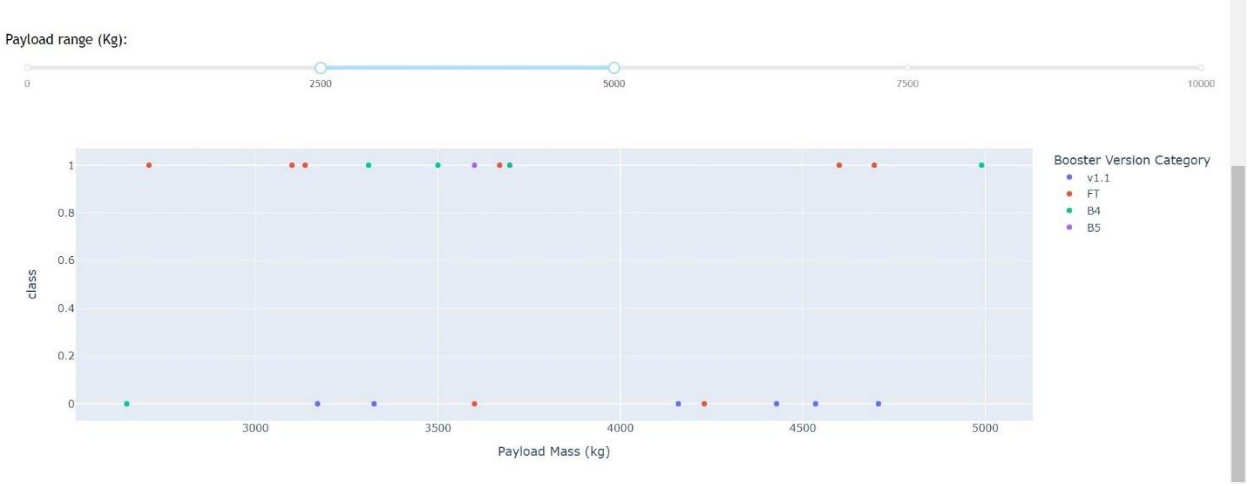
Launch Success: All Sites

- Which payload range(s) has the highest launch success rate?
  - Payload range 2,500 to 5,000 kg had the highest success rate of 55%, which is 11 successful launches out of 20 attempted launches in this range.
  - The second highest success rate was 50% within the payload range of 7,500 to 10,000 kg; however, this represents 1 successful launch out of 2 attempts.

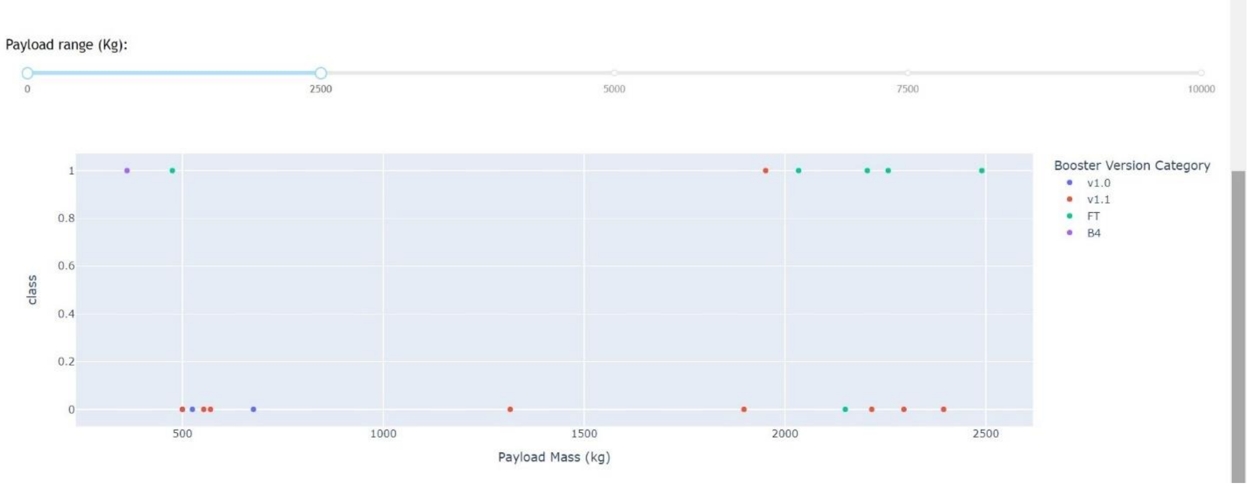
All Sites and All Payload Ranges: identify the range with the most 1 = success points, most points seem to lie between 2,500 and 5,000 kg…Let’s zoom in on this ranges



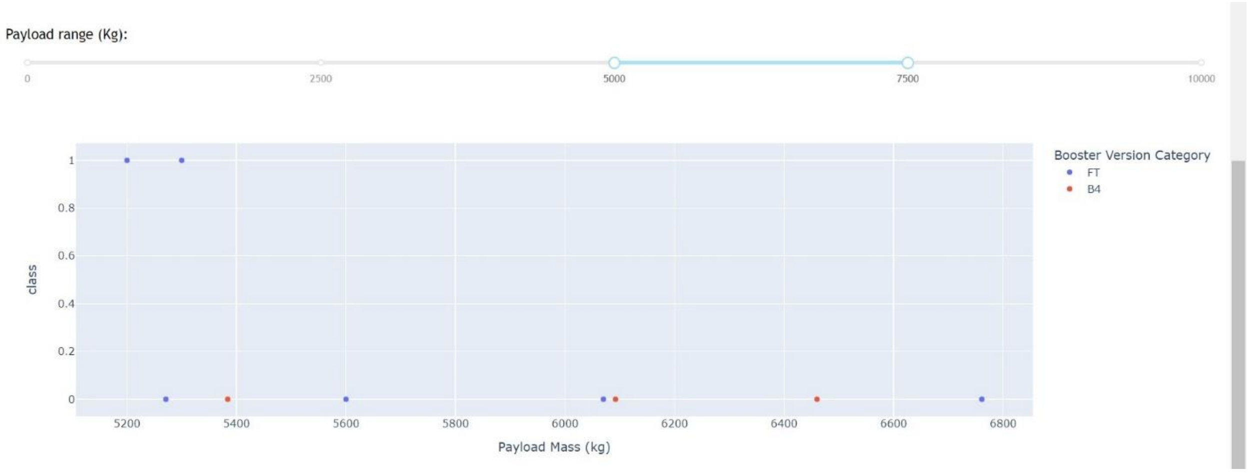
All Sites with Payload Mass between 2,500 and 5,000 kg to verify



All Sites with Payload Mass between 0 and 2,500 kg to check and compare



All Sites with Payload Mass between 5,000 to 7,500 kg to check and compare



- Which payload range(s) has the lowest launch success rate?
  - Payload range 5,000 to 7,500 kg had the lowest success rate of 22.2%, which is 2 successful launches out of 9 attempts.

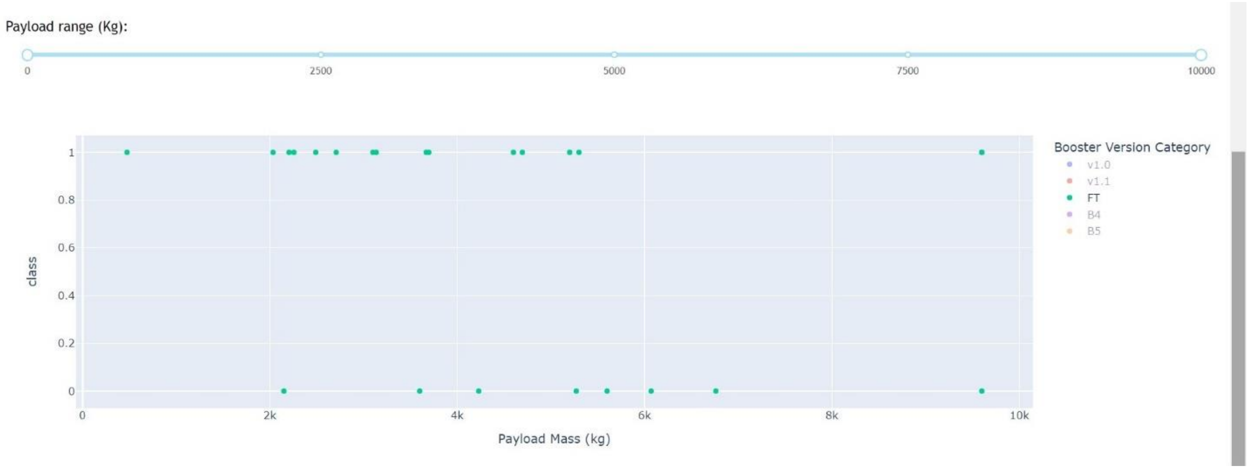
All Sites and All Payload Ranges (as seen above) seems sparce with 1 = success rates

All Sites with Payload Mass between 5,000 to 7,500 kg (as seen above) shows more 0 = failure than success

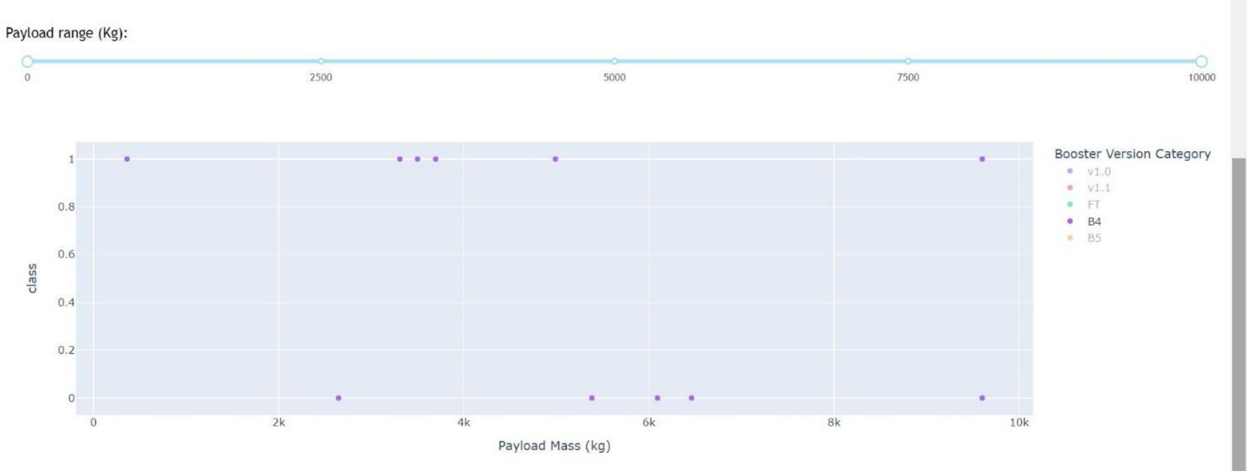
- Which F9 Booster version (v1.0, v1.1, FT, B4, B5, etc.) has the highest launch success rate?
  - The FT Booster version category had the highest launch success rate of 66.7%, which is 16 successful launches out of 24 attempts.
  - The B4 Booster which took up the 9,600 kg payload had a success rate of 54.5%, which is 6 successes out of 11 attempts.
  - The B5 Booster's success rate was 100%; however, this is 1 success out of 1 attempt.

All Sites and All Payload Ranges (above) shows quite a few green, purple and one yellow. Let's filter to view these boosters one by one…

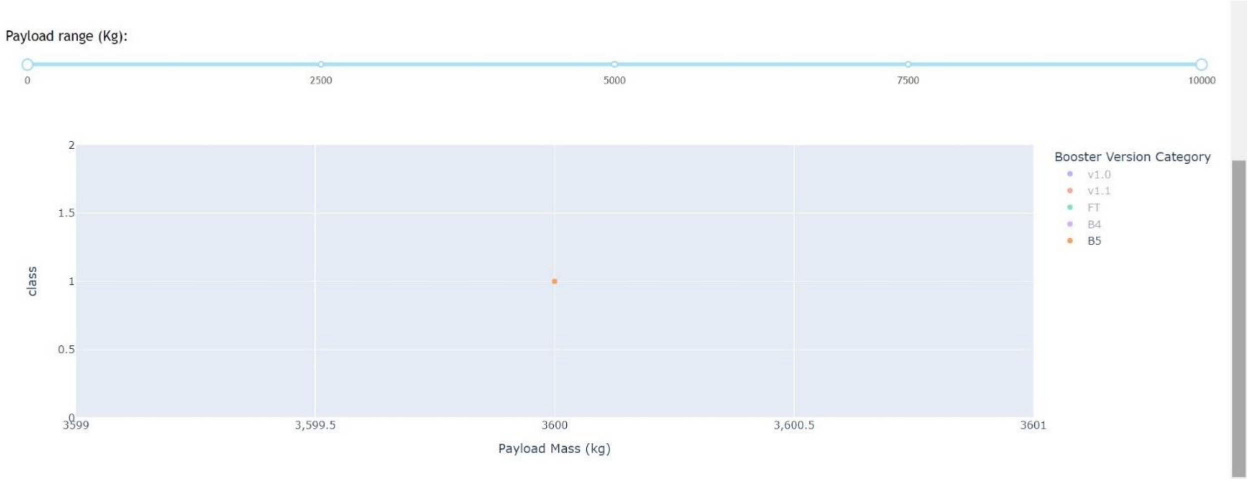
FT Booster



## B4 Booster



## B5 Booster



## Let's verify this with some code:

```
import numpy as np

import pandas as pd

url = "https://cf-courses-data.s3.us.cloud-object-storage.appdomain.cloud/IBM-DS0321EN-SkillsNetwork/datasets/spacex_launch_dash.csv"

spacex_df = pd.read_csv(url)

BoosterSuccess = spacex_df.groupby(['Booster Version Category'])['class'].mean().reset_index()

BoosterSuccess = pd.DataFrame(data = BoosterSuccess)

BoosterSuccess.columns = ['Booster Version Category','SuccessRate']

BoosterSuccess
```

```
[]:…
```

```
        Booster Version Category      SuccessRate

0       B4                            0.545455

1       B5                            1.000000

2       FT                            0.666667

3       v1.0                          0.000000

4       v1.1                          0.066667

BoosterN = spacex_df.groupby(['Booster Version Category'])['class'].size().reset_index()

BoosterN = pd.DataFrame(data = BoosterN)

BoosterN.columns = ['Booster Version Category','N']

BoosterN

[]:

        Booster Version Category      N

0       B4                            11

1       B5                            1

2       FT                            24

3       v1.0                          5

4       v1.1                          15
```

Verification complete.