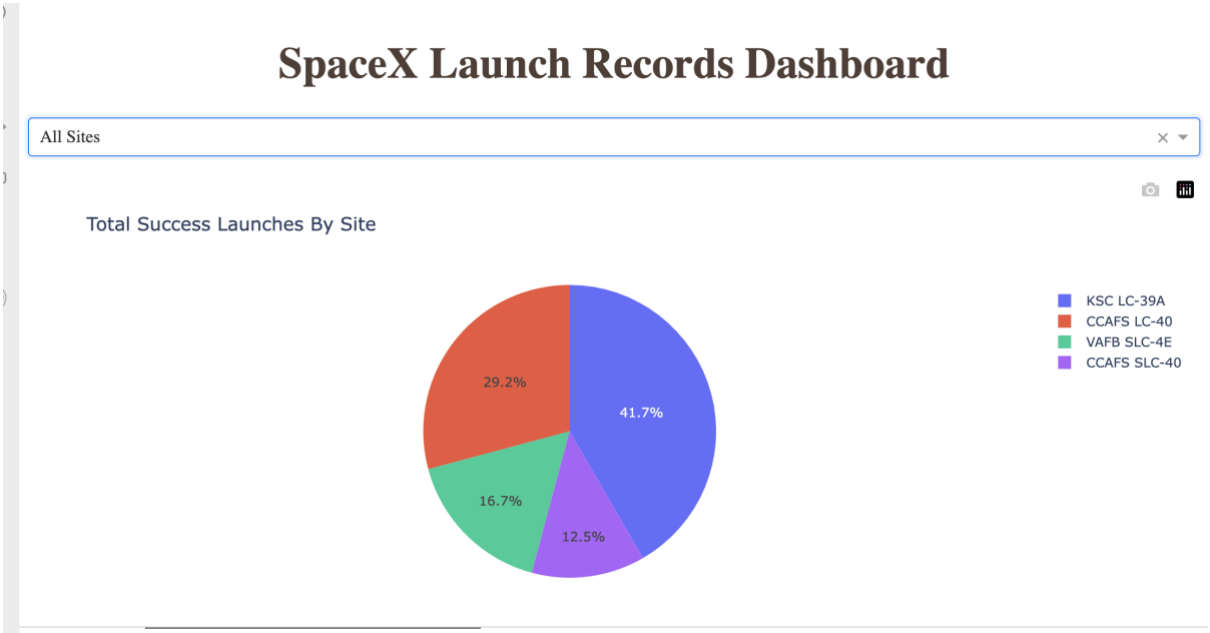
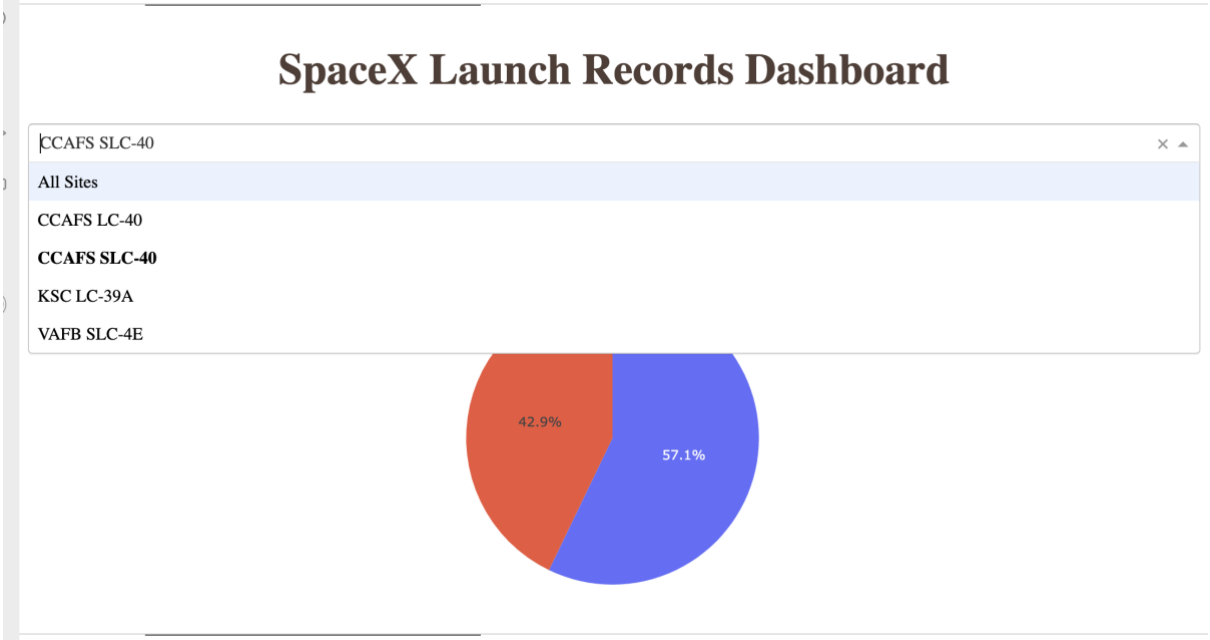
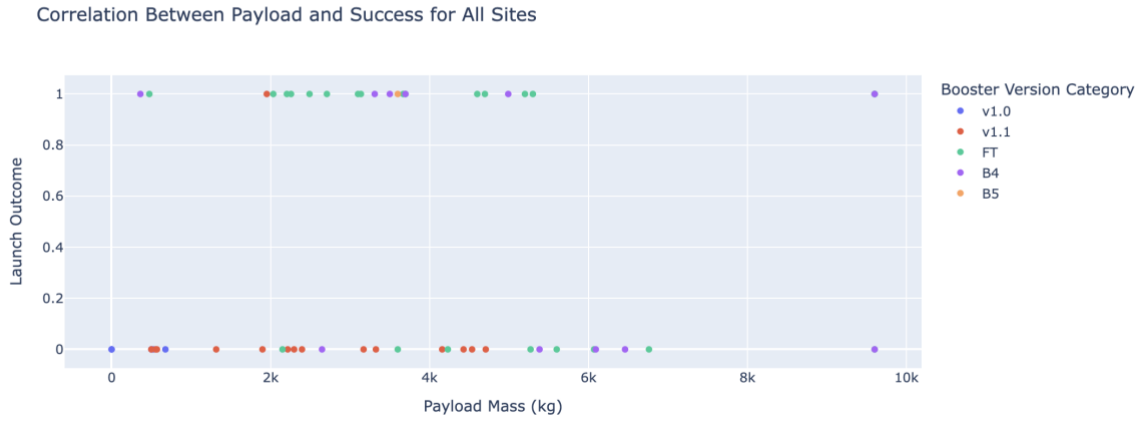
Plotly Dashboard

Images of dashboard – as the dashboard is hosted on an IBM server, it is not currently running.





Payload range (Kg):



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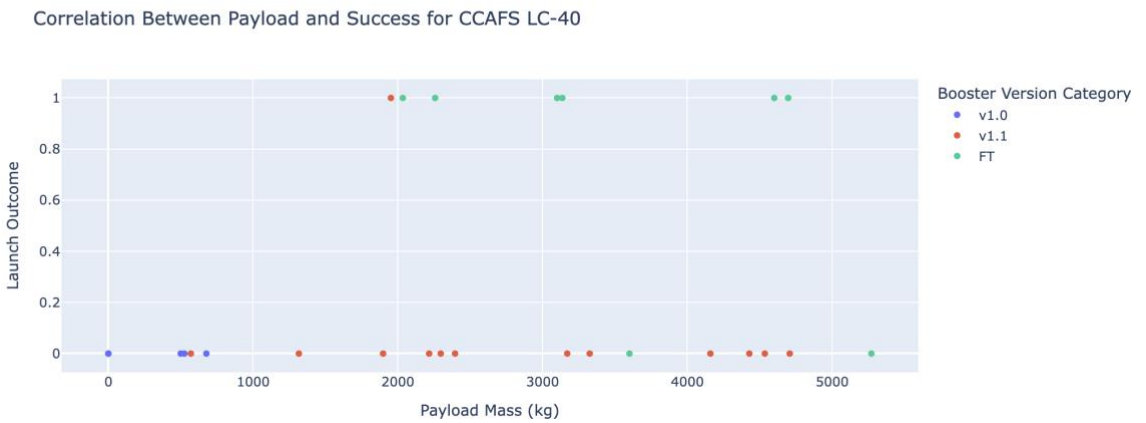

Dashboard code:

```
# Import required libraries
import pandas as pd
import dash
import dash_html_components as html
import dash_core_components as dcc
from dash.dependencies import Input, Output
import plotly.express as px
# Read the airline data into pandas dataframe
spacex_df = pd.read_csv("spacex_launch_dash.csv")
max_payload = spacex_df['Payload Mass (kg)'].max()
min_payload = spacex_df['Payload Mass (kg)'].min()
# Create a dash application
app = dash.Dash(__name__)
# Create an app layout
app.layout = html.Div(children=[html.H1('SpaceX Launch Records Dashboard',
                                        style={'textAlign': 'center', 'color': '#503D36',
                                               'font-size': 40}),
                                # TASK 1: Add a dropdown list to enable Launch Site selection
                                # The default select value is for ALL sites
                                dcc.Dropdown(id='site-dropdown',
                                options=[
                                    {'label': 'All Sites', 'value': 'ALL'},
                                    {'label': 'CCAFS LC-40', 'value': 'CCAFS LC-40'},
                                    {'label': 'CCAFS SLC-40', 'value': 'CCAFS SLC-40'},
                                    {'label': 'KSC LC-39A', 'value': 'KSC LC-39A'},
                                    {'label': 'VAFB SLC-4E', 'value': 'VAFB SLC-4E'}
                                ],
                                value='All',
                                placeholder="Launch Site",
                                searchable=True
                                ),
                                html.Br(),
                                # TASK 2: Add a pie chart to show the total successful launches count for all sites
                                # If a specific launch site was selected, show the Success vs. Failed counts for the site
                                html.Div(dcc.Graph(id='success-pie-chart')),
                                html.Br(),
                                html.P("Payload range (Kg):"),
                                # TASK 3: Add a slider to select payload range
```

```
                    dcc.RangeSlider(
                        id='payload-slider',
                        min=0, max=10000, step=1000,
                        marks={i: f'{i}' for i in range(0, 10001, 1000)},
                        value=[min_payload, max_payload]
                    ),

                    # TASK 4: Add a scatter chart to show the correlation between payload and launch success
                    html.Div(dcc.Graph(id='success-payload-scatter-chart')),
                    ])
# TASK 2:
# Add a callback function for `site-dropdown` as input, `success-pie-chart` as output
@app.callback(
    Output(component_id='success-pie-chart', component_property='figure'),
    Input(component_id='site-dropdown', component_property='value')
)
def get_pie_chart(entered_site):
    if entered_site == 'ALL':
        # Generate pie chart for all sites
        fig = px.pie(
            spacex_df,
            values='class',
            names='Launch Site',
            title='Total Success Launches By Site'
        )
    else:
        # Filter data for selected site
        filtered_df = spacex_df[spacex_df['Launch Site'] == entered_site]
        fig = px.pie(
            filtered_df,
            names='class',
            title=f"Success vs Failure for {entered_site}"
        )
    return fig
# TASK 4:
# Add a callback function for `site-dropdown` and `payload-slider` as inputs, `success-payload-scatter-chart` as
output
@app.callback(
    Output(component_id='success-payload-scatter-chart', component_property='figure'),
    [
```

```
        Input(component_id='site-dropdown', component_property='value'),
        Input(component_id='payload-slider', component_property='value')
    ]
)
def update_scatter_plot(entered_site, payload_range):
    filtered_df = spacex_df[
        (spacex_df['Payload Mass (kg)'] >= payload_range[0]) &
        (spacex_df['Payload Mass (kg)'] <= payload_range[1])
    ]

    if entered_site == 'ALL':
        fig = px.scatter(
            filtered_df,
            x='Payload Mass (kg)',
            y='class',
            color='Booster Version Category',
            title='Correlation Between Payload and Success for All Sites',
            labels={'class': 'Launch Outcome'}
        )
    else:
        site_df = filtered_df[filtered_df['Launch Site'] == entered_site]
        fig = px.scatter(
            site_df,
            x='Payload Mass (kg)',
            y='class',
            color='Booster Version Category',
            title=f"Correlation Between Payload and Success for {entered_site}",
            labels={'class': 'Launch Outcome'}
        )
    return fig
# Run the app
if __name__ == '__main__':
    app.run_server()
```