In [1]:
```
# Initial imports
import pandas as pd
import numpy as np
from yahoo_fin.stock_info import get_data
import yahoo_fin.stock_info as si
import seaborn as sns
import panel as pn
from panel.interact import interact
import plotly.express as px
from pathlib import Path

%matplotlib inline
```

In [2]:
```
# Set up Panel Plotly extension
pn.extension('plotly')
```

In [3]:
```
pd.options.plotting.backend = 'holoviews'
import hvplot
import hvplot.pandas
```

In [4]:
```
# Read in Bush data
csv_path = Path("Data/bushb_returns_mean.csv")
bushb_return = pd.read_csv(csv_path,index_col='Unnamed: 0')
csv_path = Path("Data/busha_returns_mean.csv")
busha_return = pd.read_csv(csv_path,index_col='Unnamed: 0')
csv_path = Path("Data/bushb_100_days_mean.csv")
bushb_100_days_mean = pd.read_csv(csv_path,index_col='Unnamed: 0')
csv_path = Path("Data/busha_100_days_mean.csv")
busha_100_days_mean = pd.read_csv(csv_path,index_col='Unnamed: 0')
```

In [5]:
```
# Define Bush Panel Visualization Functions
def get_bushb_plot():
    bushb_plot = bushb_return.plot.bar(flip_xaxis=True, label='Bush First Term', yformatter='%f')
    return bushb_plot
def get_busha_plot():
    busha_plot = busha_return.plot.bar(flip_xaxis=True, label='Bush Second Term', yformatter='%f')
    return busha_plot
def get_bushb_100_plot():
    bushb_100_plot = bushb_100_days_mean.plot.bar(label='Bush First 100 Days - First Term', yformatter='%f')
    return bushb_100_plot
def get_busha_100_plot():
    busha_100_plot = busha_100_days_mean.plot.bar(label='Bush First 100 Days - Second Term', yformatter='%f')
    return busha_100_plot
```

In [6]:
```
# Read in Obama data
csv_path = Path("Data/obamab_returns_mean.csv")
obamab_return = pd.read_csv(csv_path,index_col='Unnamed: 0')
csv_path = Path("Data/obamaa_returns_mean.csv")
obamaa_return = pd.read_csv(csv_path,index_col='Unnamed: 0')
csv_path = Path("Data/obamab_100_days_mean.csv")
obamab_100_days_mean = pd.read_csv(csv_path,index_col='Unnamed: 0')
csv_path = Path("Data/obamaa_100_days_mean.csv")
obamaa_100_days_mean = pd.read_csv(csv_path,index_col='Unnamed: 0')
```

In [7]:
```
# Define Obama Panel Visualization Functions
def get_obamab_plot():
    obamab_plot = obamab_return.plot.bar(flip_xaxis=True, label='Obama First Term', yformatter='%f')
    return obamab_plot
def get_obamaa_plot():
    obamaa_plot = obamaa_return.plot.bar(flip_xaxis=True, label='Obama Second Term', yformatter='%f')
    return obamaa_plot
def get_obamab_100_plot():
    obamab_100_plot = obamab_100_days_mean.plot.bar(label='Obama First 100 Days - First Term', yformatter='%f')
    return obamab_100_plot
def get_obamaa_100_plot():
    obamaa_100_plot = obamaa_100_days_mean.plot.bar(label='Obama First 100 Days - Second Term', yformatter='%f')
    return obamaa_100_plot
```

In [8]:
```
# Read in Trump data
csv_path = Path("Data/trump_returns_mean.csv")
trump_return = pd.read_csv(csv_path,index_col='Unnamed: 0')

csv_path = Path("Data/trump_100_days_mean.csv")
trump_100_days_mean = pd.read_csv(csv_path,index_col='Unnamed: 0')
```

In [9]:
```
# Define Trump Panel Visualization Functions
def get_trump_plot():
    trump_plot = bushb_return.plot.bar(flip_xaxis=True, label='Trump Mean Returns - Election', yformatter='%f')
    return trump_plot
def get_trump_100_plot():
    trump_100_plot = bushb_100_days_mean.plot.bar(label='Trump 100 Days', yformatter='%f')
    return trump_100_plot
```

In [10]:
```
# Read in Biden data
csv_path = Path("Data/biden_returns_mean.csv")
biden_return = pd.read_csv(csv_path,index_col='Unnamed: 0')

csv_path = Path("Data/biden_100_days_mean.csv")
biden_100_days_mean = pd.read_csv(csv_path,index_col='Unnamed: 0')
```

In [11]:
```
# Define Biden Panel Visualization Functions
def get_biden_plot():
    biden_plot = biden_return.plot.bar(flip_xaxis=True, label='Biden Mean Returns - Election', yformatter='%f')
    return biden_plot
def get_biden_100_plot():
    biden_100_plot = biden_100_days_mean.plot.bar(label='Biden 100 Days', yformatter='%f')
    return biden_100_plot
```

In [12]:
```
# Create panels to structure the layout of the dashboard
bush_column = pn.Column(
    "## Bush Administration",
    get_bushb_plot(),
    get_busha_plot(),
    get_bushb_100_plot(),
    get_busha_100_plot()
)

obama_column = pn.Column(
    "## Obama Administration",
    get_obamab_plot(),
    get_obamaa_plot(),
    get_obamab_100_plot(),
    get_obamaa_100_plot()
)

trump_column = pn.Column(
    "## Obama Administration",
    get_trump_plot(),
    get_trump_100_plot()
)

biden_column = pn.Column(
    "## Obama Administration",
    get_biden_plot(),
    get_biden_100_plot()
)

# Create tabs
pop_dashboard = pn.Tabs(
    ("Bush", bush_column),
    ("Obama", obama_column),
    ("Trump", trump_column),
    ("Biden", biden_column)
)
```

In [13]:
```
# Execute Panel dashboard using servable function
pop_dashboard.servable()
```

Out[13]:

Bush Obama Trump Biden

Bush Administration