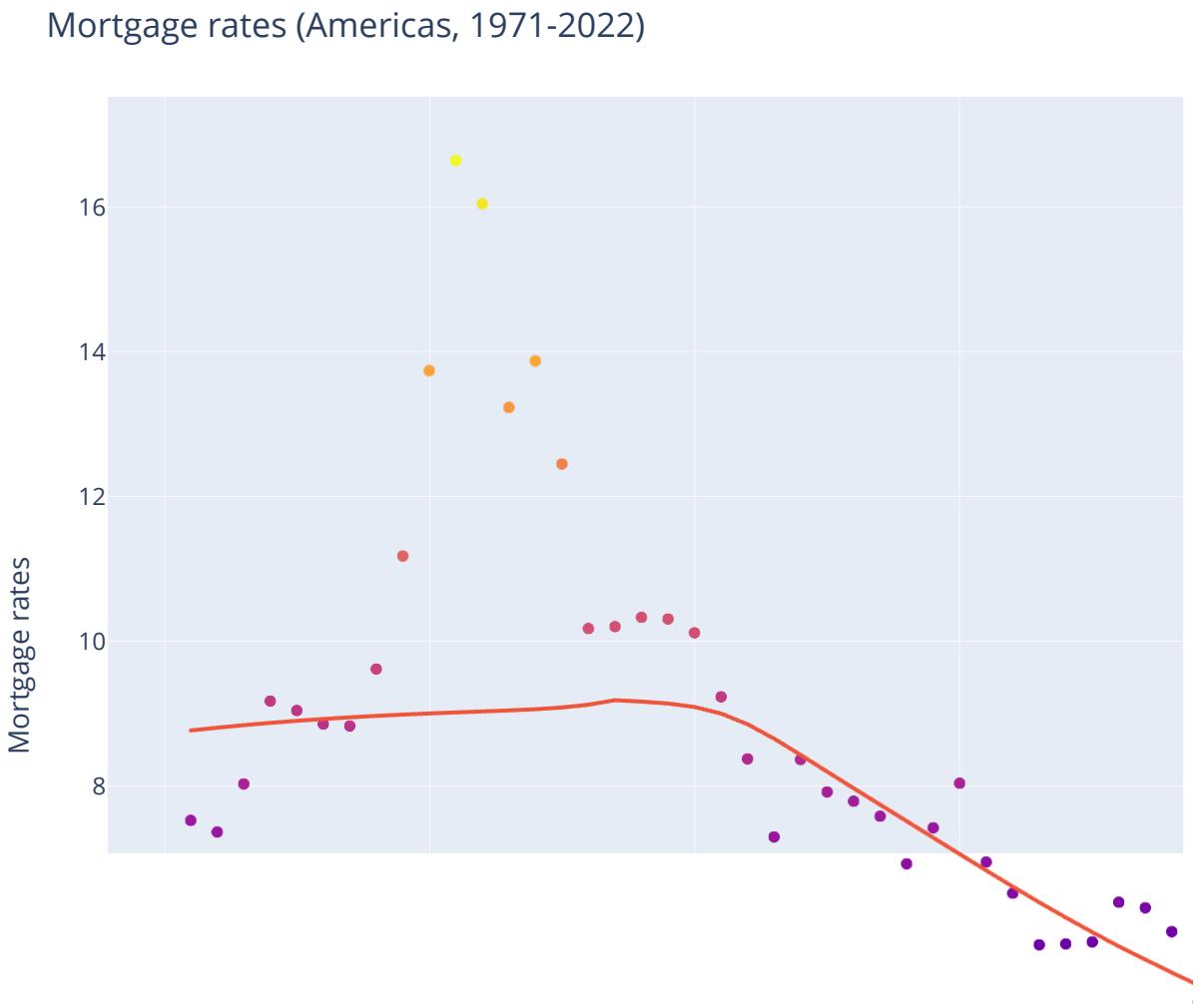
In [97]:
```
#Loading the library
import pandas as pd
import plotly.express as px
import altair as alt
import numpy
import numpy as np
```

In [98]:
```
# Loading the dataset (average morgage rate is calculated every year)
df= pd.read_excel('Mortgage_data.xlsx')
```

Mortgage rates (Americas, 1971-2022)

In [99]:

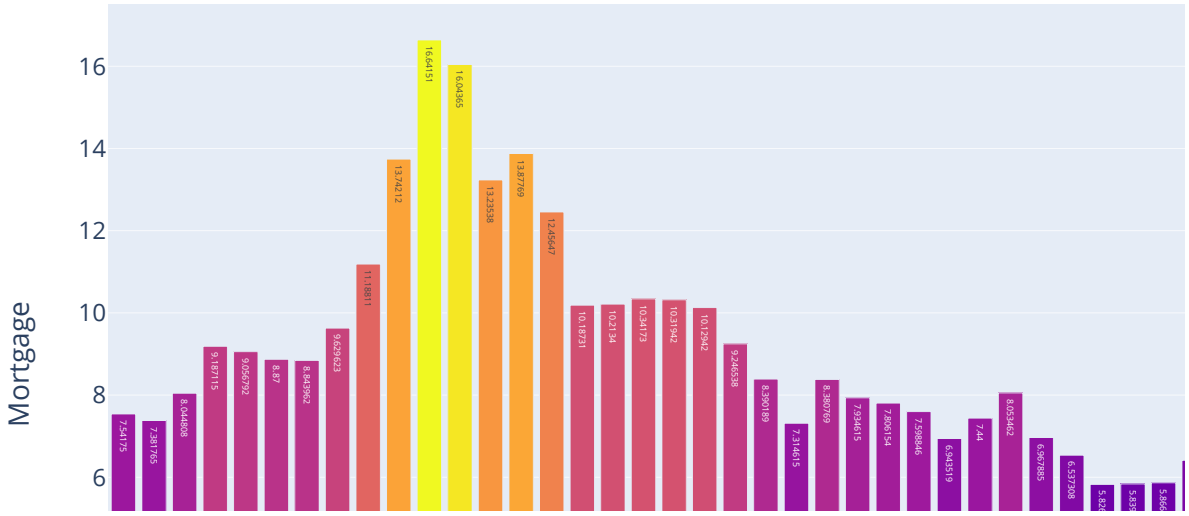
```
import plotly.express as px
fig = px.scatter(df, x='Year', y='Mortgage', color='Mortgage', trendlin

#If 'lowess', a Locally Weighted Scatterplot Smoothing line will be dra

# Correct position of x points
for scatter, trendline in zip(fig.data[::2], fig.data[1::2]):
    trendline['x'] = scatter['x'][np.logical_not(np.isnan(scatter['y']))

fig.update_traces(textposition='top center')

fig.update_layout(
    height=700,
    title_text='Mortgage rates (Americas, 1971-2022)'
)

fig.show()
```



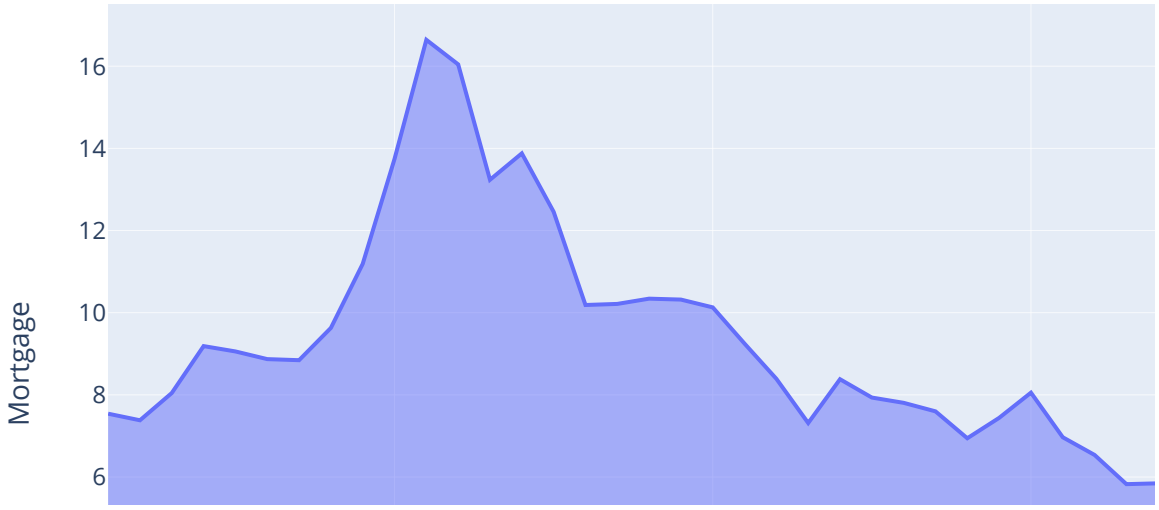
In [100]:
```
# plotting the scatter chart
fig = px.line(df.dropna(), y='Mortgage', x = 'Year' , title = 'Mortgage
# showing the plot
fig.show()
```

In [101]:

```
import plotly.express as px

fig = px.bar(df, x='Year', y='Mortgage',
             hover_data=['Mortgage', 'Year'], color='Mortgage',
             labels={'Mortgage'},text_auto=True, height=500)
fig.show()
```



In [102]:
```
import plotly.express as px
fig = px.area(df.dropna(), x='Year', y='Mortgage',
              hover_data=['Mortgage', 'Year'],
              labels={'Mortgage'}, height=500)

fig.show()
```



In [103]:
```
import plotly.express as px
fig = px.area(df.dropna(), x='Year', y='Mortgage',
              hover_data=['Mortgage', 'Year'],
              labels={'Mortgage'}, height=500, pattern_shape_sequence=["

fig.show()
```

```
---------------------------------------------------------------------------
TypeError                                 Traceback (most recent call last)
/var/folders/5c/hs39rcwx6319812pwgk7r0w40000gn/T/ipykernel_23761/4282694229.py in <module>
      1 import plotly.express as px
----> 2 fig = px.area(df.dropna(), x='Year', y='Mortgage',
      3              hover_data=['Mortgage', 'Year'],
      4              labels={'Mortgage'}, height=500, pattern_shape_sequence=["."])
      5

TypeError: area() got an unexpected keyword argument 'pattern_shape_sequence'
```

In [ ]:
```

```

In [ ]:
```

```

In [ ]:
```
1
```