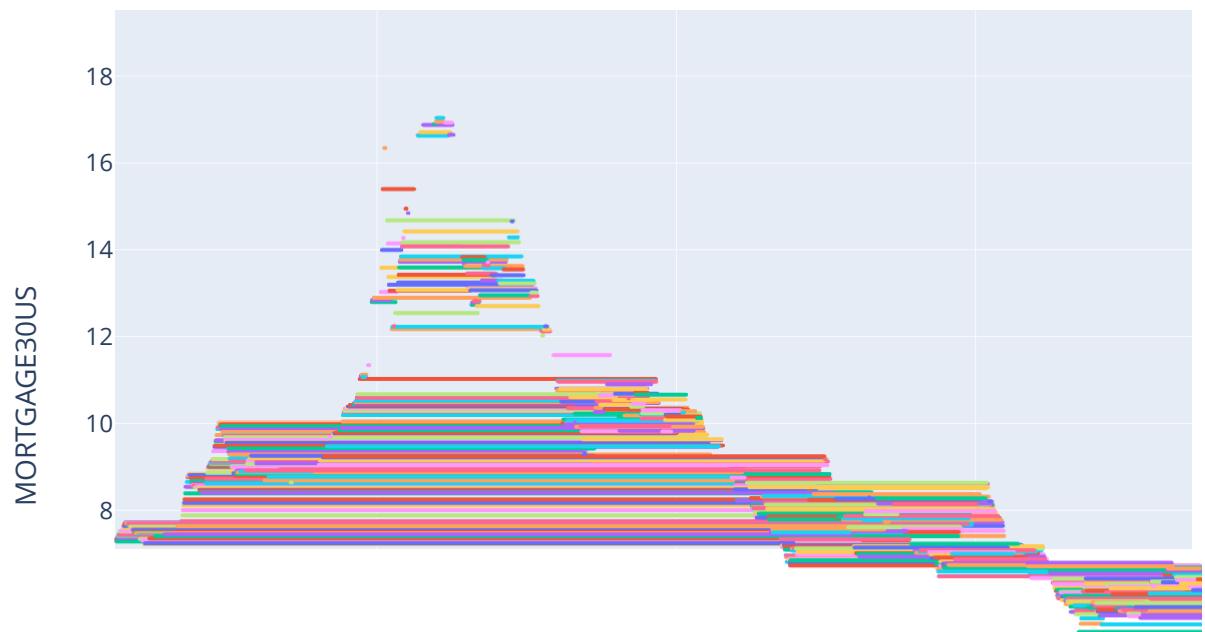


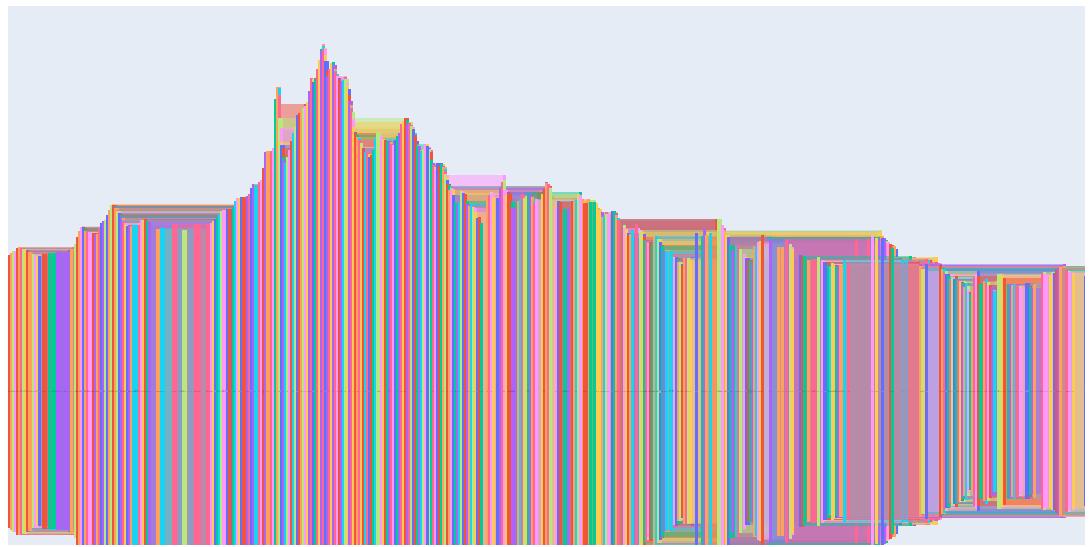
In [1]:

```
1 import pandas as pd
2 import plotly.express as px
3 import altair as alt
4
5 df = pd.read_csv('MORTGAGE30US.csv')
6
7 # plotting the scatter chart
8 fig = px.line(df, y='MORTGAGE30US', x = 'DATE' , color='MORTGAGE30US')
9
10 # showing the plot
11 fig.show()
```



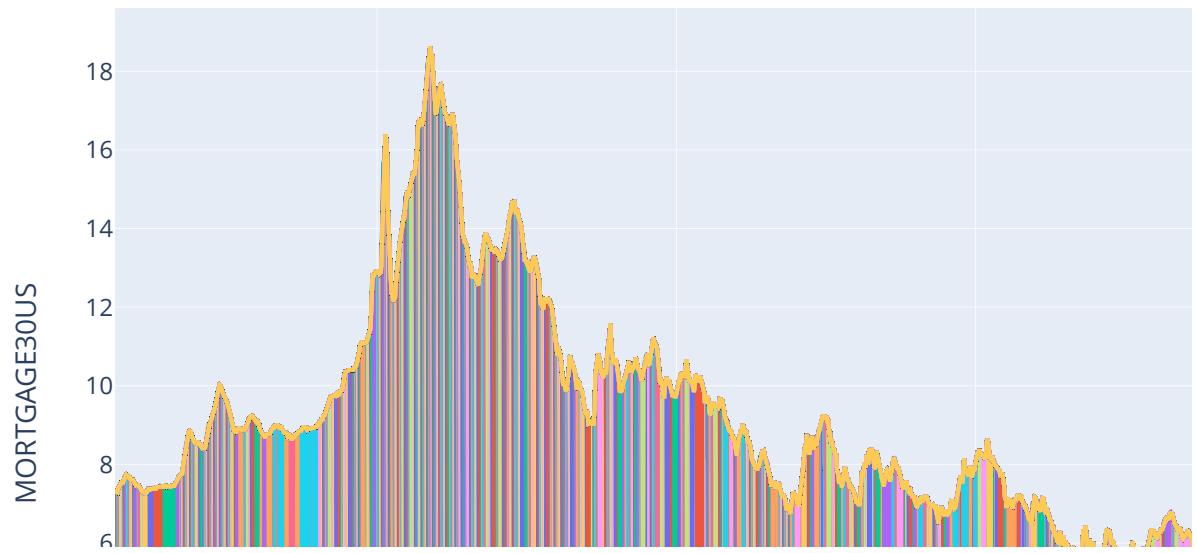
In [2]:

```
1 # plotting the scatter chart
2 fig = px.funnel(df, y='MORTGAGE30US', x = 'DATE' , color='MORTGAGE30US'
3
4 # showing the plot
5 fig.show()
```



In [3]:

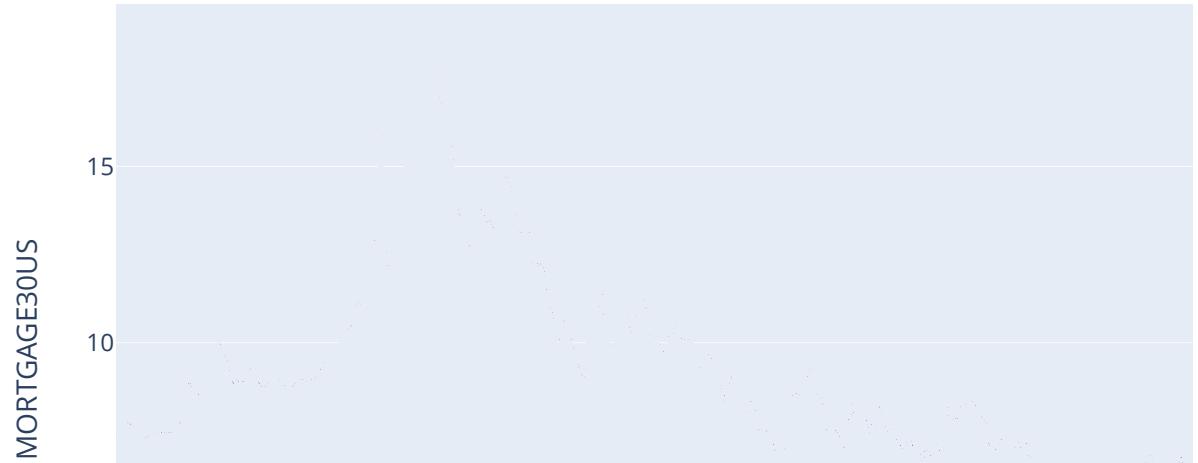
```
1 # plotting the scatter chart
2 fig = px.area(df, y='MORTGAGE30US', x = 'DATE' , color='MORTGAGE30US')
3
4 # showing the plot
5 fig.show()
```



In [4]:

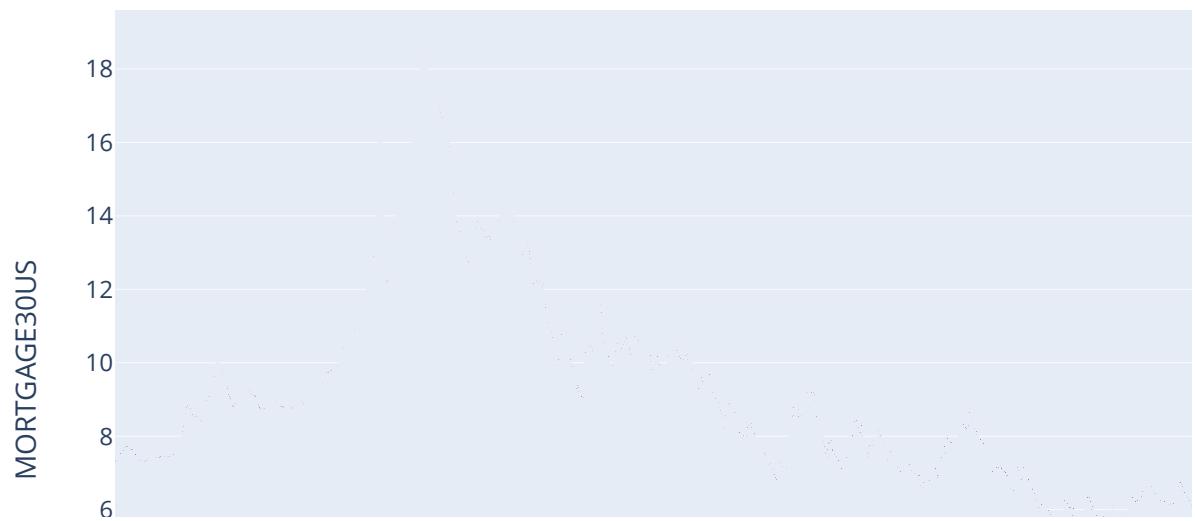
```
1 # plotting the scatter chart
2 fig = px.bar(df, y='MORTGAGE30US', x = 'DATE' , color='MORTGAGE30US', t
3
4 # showing the plot
5 fig.show()
```

Mortgage rates for 30 years in the United States



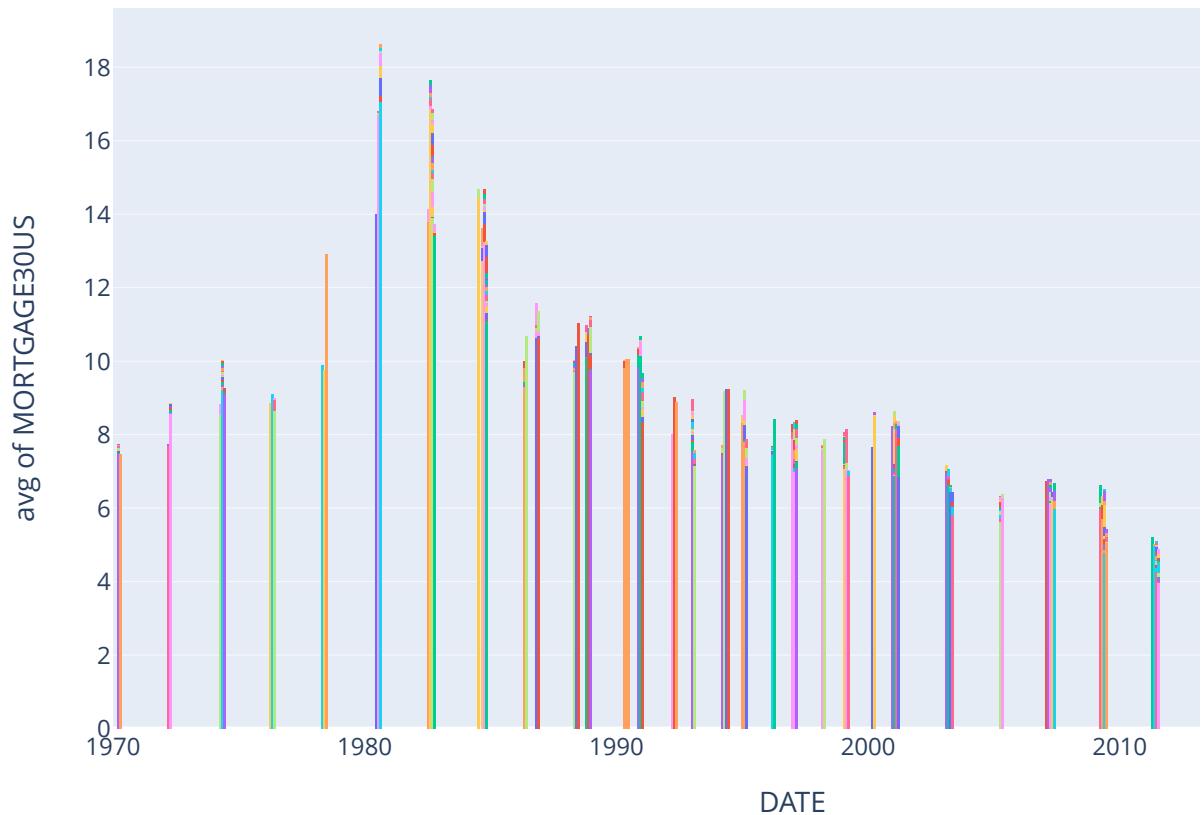
In [5]:

```
1 import plotly.express as px
2
3 fig = px.bar(df, x='DATE', y='MORTGAGE30US',
4               hover_data=['MORTGAGE30US', 'DATE'], color='MORTGAGE30US',
5               labels={'MORTGAGE30US'}, text_auto=True, height=500)
6 fig.show()
```



In [6]:

```
1 fig = px.histogram(df, x="DATE", y="MORTGAGE30US",
2                     color='MORTGAGE30US', barmode='group',
3                     histfunc='avg', width=900,
4                     height=500)
5 fig.show()
```



In [53]:

```

1 import plotly.express as px
2 fig = px.scatter(df, x='DATE', y='MORTGAGE30US', color='MORTGAGE30US',
3
4 #If 'lowess', a Locally Weighted Scatterplot Smoothing line will be dra
5
6 # # Correct position of x points
7 # for scatter, trendline in zip(fig.data[::2], fig.data[1::2]):
8 #     trendline['x'] = scatter['x'][np.logical_not(np.isnan(scatter['y'
9
10 fig.update_traces(textposition='top center')
11
12 fig.update_layout(
13     height=700,
14     title_text='Mortgage rates (Americas, 1971-2022)'
15 )
16
17 fig.show()

```

```

--                                                 Traceback (most recent call las
t)
ValueError                                         t)
/opt/anaconda3/lib/python3.8/site-packages/plotly/express/_core.py in mak
e_trace_kwargs(args, trace_spec, trace_data, mapping_labels, sizeref)
    333                     try:
--> 334                         x = x.astype(np.float64)
    335                     except ValueError:

ValueError: could not convert string to float: '1971-04-02'

```

During handling of the above exception, another exception occurred:

```

ValueError                                         Traceback (most recent call las
t)
/var/folders/5c/hs39rcwx6319812pwgk7r0w40000gn/T/ipykernel_22449/31988729
77.py in <module>
      1 import plotly.express as px
----> 2 fig = px.scatter(df, x='DATE', y='MORTGAGE30US', color='MORTGAGE3
0US', trendline="lowess", render_mode ='auto', labels= {"Mortgage" : "Mor
tgage rates", 'Year': 'Year (1971-2022)'})
      3
      4 #If 'lowess', a Locally Weighted Scatterplot Smoothing line will
be drawn for each discrete-color/symbol group.
      5

```

```

/opt/anaconda3/lib/python3.8/site-packages/plotly/express/_chart_types.py
in scatter(data_frame, x, y, color, symbol, size, hover_name, hover_data,
custom_data, text, facet_row, facet_col, facet_col_wrap, facet_row_spaci
ng, facet_col_spacing, error_x, error_x_minus, error_y, error_y_minus, ani
mation_frame, animation_group, category_orders, labels, orientation, colo
r_discrete_sequence, color_discrete_map, color_continuous_scale, range_co
lor, color_continuous_midpoint, symbol_sequence, symbol_map, opacity, siz
e_max, marginal_x, marginal_y, trendline, trendline_options, trendline_co
lor_override, trendline_scope, log_x, log_y, range_x, range_y, render_mod
e, title, template, width, height)
    64     mark in 2D space.

```

```
65      """
--> 66      return make_figure(args=locals(), constructor=go.Scatter)
67
68

/opt/anaconda3/lib/python3.8/site-packages/plotly/express/_core.py in mak
e_figure(args, constructor, trace_patch, layout_patch)
2121             group[var] = 100.0 * group[var] / group_sum
2122
--> 2123             patch, fit_results = make_trace_kwargs(
2124                 args, trace_spec, group, mapping_labels.copy(), s
izeref
2125             )

/opt/anaconda3/lib/python3.8/site-packages/plotly/express/_core.py in mak
e_trace_kwargs(args, trace_spec, trace_data, mapping_labels, sizeref)
334             x = x.astype(np.float64)
335         except ValueError:
--> 336             raise ValueError(
337                 "Could not convert value of 'x'
('%"s') into a numeric type. "
338                 "If 'x' contains stringified date
s, please convert to a datetime column."
ValueError: Could not convert value of 'x' ('DATE') into a numeric type.
If 'x' contains stringified dates, please convert to a datetime column.
```

In []:

1