

```
In [1]: import pandas as pd
import numpy as np
import altair as alt

# Handle large data sets without embedding them in the notebook
alt.data_transformers.enable('data_server')
# Include an image for each plot since Gradescope only supports displaying plots as images
alt.renderers.enable('mimetype')
```

```
Out[1]: RendererRegistry.enable('mimetype')
```

```
In [2]: data = {'name.with.dots': [1,2,2,3,3,3,4,4,4,4]}
df = pd.DataFrame(data)
df
```

```
Out[2]:
```

	name.with.dots
0	1
1	2
2	2
3	3
4	3
5	3
6	4
7	4
8	4
9	4

```
In [3]: doesnt_work = alt.Chart(df).mark_bar().encode(
    x=alt.X('name.with.dots', bin=alt.Bin(maxbins=20)),
    y='count()'
)

doesnt_work
```

C:\Users\jakob\miniconda3\envs\D571\lib\site-packages\altair\utils\core.py:317: FutureWarning: iteritems is deprecated and will be removed in a future version. Use .items instead.

```
for col_name, dtype in df.dtypes.iteritems():
```

Out[3]:



```
In [4]: df = df.rename(columns={'name.with.dots': 'name_with_underscores'})
```

```
does_work = alt.Chart(df).mark_bar().encode(
    x=alt.X('name_with_underscores', bin=alt.Bin(maxbins=20)),
    y='count()'
)
```

does_work

C:\Users\jakob\miniconda3\envs\D571\lib\site-packages\altair\utils\core.py:317: FutureWarning: iteritems is deprecated and will be removed in a future version. Use .items instead.
for col_name, dtype in df.dtypes.iteritems():

Out[4]:

