In [1]:
```
#Assignment No:7 (heart.csv dataset Visualization)
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#Roll No.: 3024
```

In [2]:
```
import pandas as pd
import numpy as np
import matplotlib.pyplot as plt
import random as rd
```

In [3]:
```
ds_heart=pd.read_csv("heart.csv")
```

In [4]:
```
ds_heart
```

Out[4]:

| | age | sex | cp | trestbps | chol | fbs | restecg | thalach | exang | oldpeak | slope | ca | thal | target |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| **0** | 63 | 1 | 3 | 145 | 233 | 1 | 0 | 150 | 0 | 2.3 | 0 | 0 | 1 | 1 |
| **1** | 37 | 1 | 2 | 130 | 250 | 0 | 1 | 187 | 0 | 3.5 | 0 | 0 | 2 | 1 |
| **2** | 41 | 0 | 1 | 130 | 204 | 0 | 0 | 172 | 0 | 1.4 | 2 | 0 | 2 | 1 |
| **3** | 56 | 1 | 1 | 120 | 236 | 0 | 1 | 178 | 0 | 0.8 | 2 | 0 | 2 | 1 |
| **4** | 57 | 0 | 0 | 120 | 354 | 0 | 1 | 163 | 1 | 0.6 | 2 | 0 | 2 | 1 |
| **...** | ... | ... | ... | ... | ... | ... | ... | ... | ... | ... | ... | ... | ... | ... |
| **298** | 57 | 0 | 0 | 140 | 241 | 0 | 1 | 123 | 1 | 0.2 | 1 | 0 | 3 | 0 |
| **299** | 45 | 1 | 3 | 110 | 264 | 0 | 1 | 132 | 0 | 1.2 | 1 | 0 | 3 | 0 |
| **300** | 68 | 1 | 0 | 144 | 193 | 1 | 1 | 141 | 0 | 3.4 | 1 | 2 | 3 | 0 |
| **301** | 57 | 1 | 0 | 130 | 131 | 0 | 1 | 115 | 1 | 1.2 | 1 | 1 | 3 | 0 |
| **302** | 57 | 0 | 1 | 130 | 236 | 0 | 0 | 174 | 0 | 0.0 | 1 | 1 | 2 | 0 |

303 rows × 14 columns

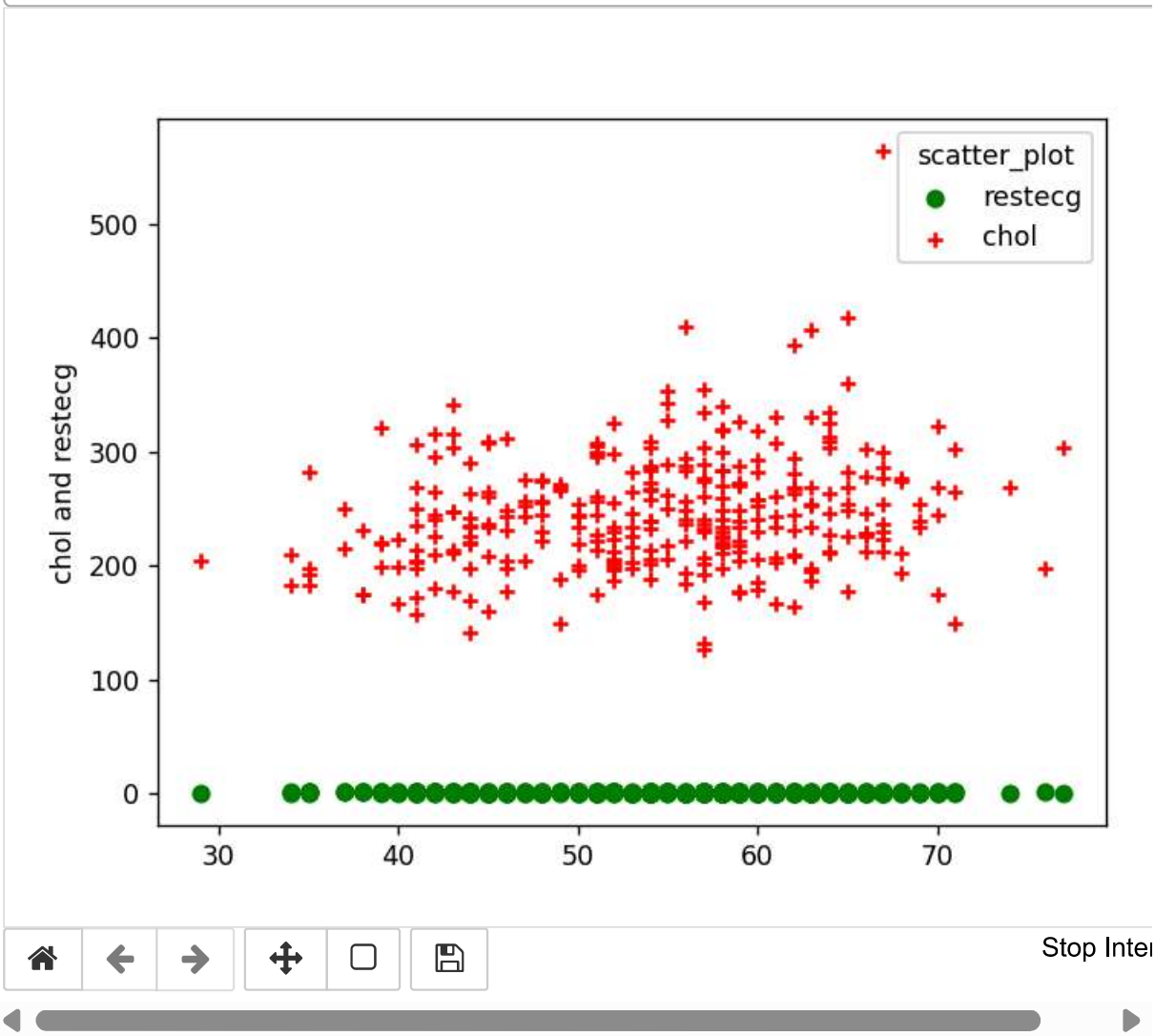
In [5]:
```
ds_heart.info()
```

```
<class 'pandas.core.frame.DataFrame'>
RangeIndex: 303 entries, 0 to 302
Data columns (total 14 columns):
 #   Column    Non-Null Count  Dtype  
---  ------    --------------  -----  
 0   age       303 non-null    int64  
 1   sex       303 non-null    int64  
 2   cp        303 non-null    int64  
 3   trestbps  303 non-null    int64  
 4   chol      303 non-null    int64  
 5   fbs       303 non-null    int64  
 6   restecg   303 non-null    int64  
 7   thalach   303 non-null    int64  
 8   exang     303 non-null    int64  
 9   oldpeak   303 non-null    float64
 10  slope     303 non-null    int64  
 11  ca        303 non-null    int64  
 12  thal      303 non-null    int64  
 13  target    303 non-null    int64  
dtypes: float64(1), int64(13)
memory usage: 33.3 KB
```

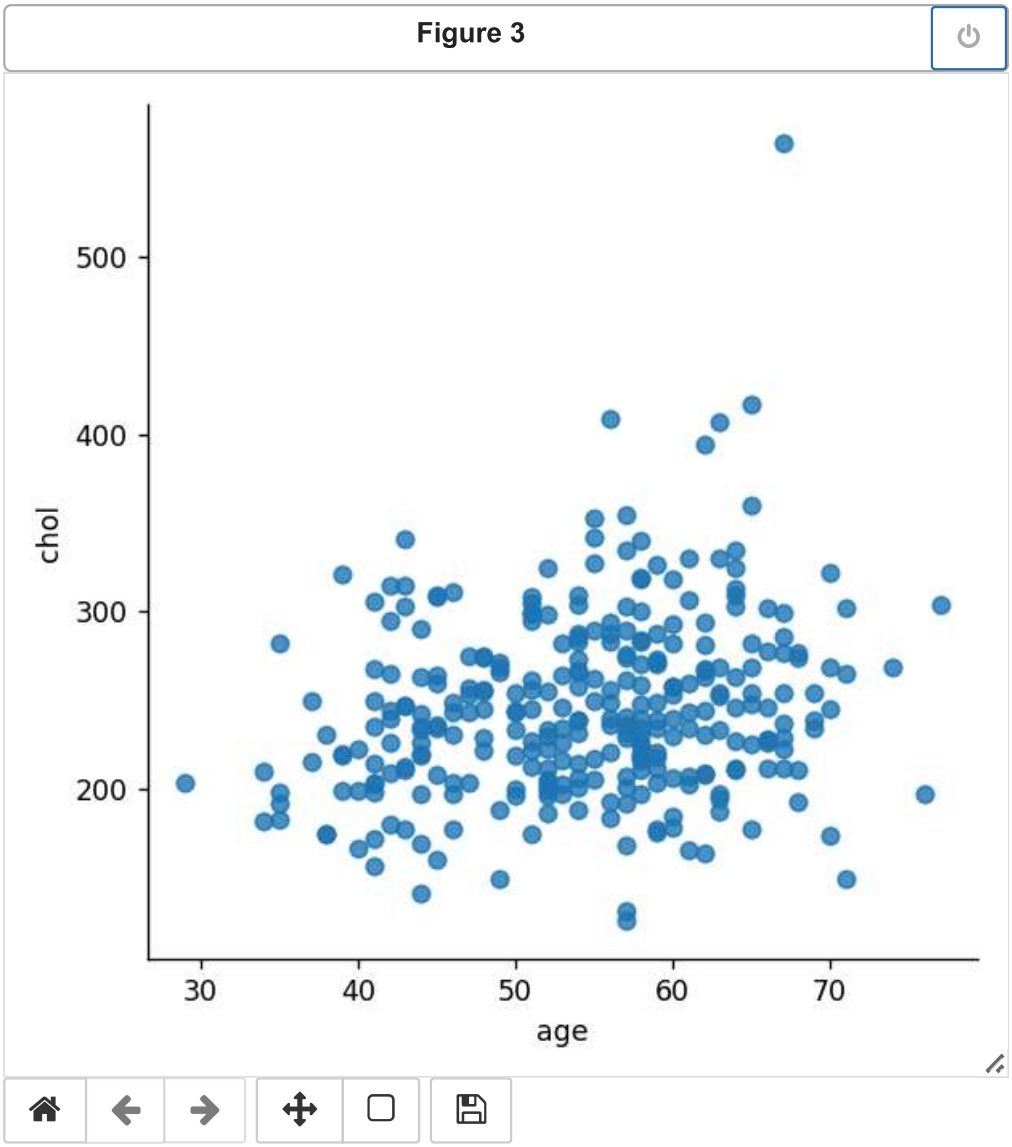
In [6]:
```
import seaborn as sns
%matplotlib notebook
```

In [7]:
```
plt.scatter(x='age',y='restecg',data=ds_heart,c='g')
plt.scatter(x='age',y='chol',data=ds_heart, c='r',marker='+')
plt.ylabel('age')
plt.ylabel('chol and restecg')
plt.legend(title='scatter_plot')
plt.show()
```

**Figure 1**



In [8]:
```
plt.figure()
sns.lmplot(x='age' , y='chol', data=ds_heart, fit_reg=False)
```

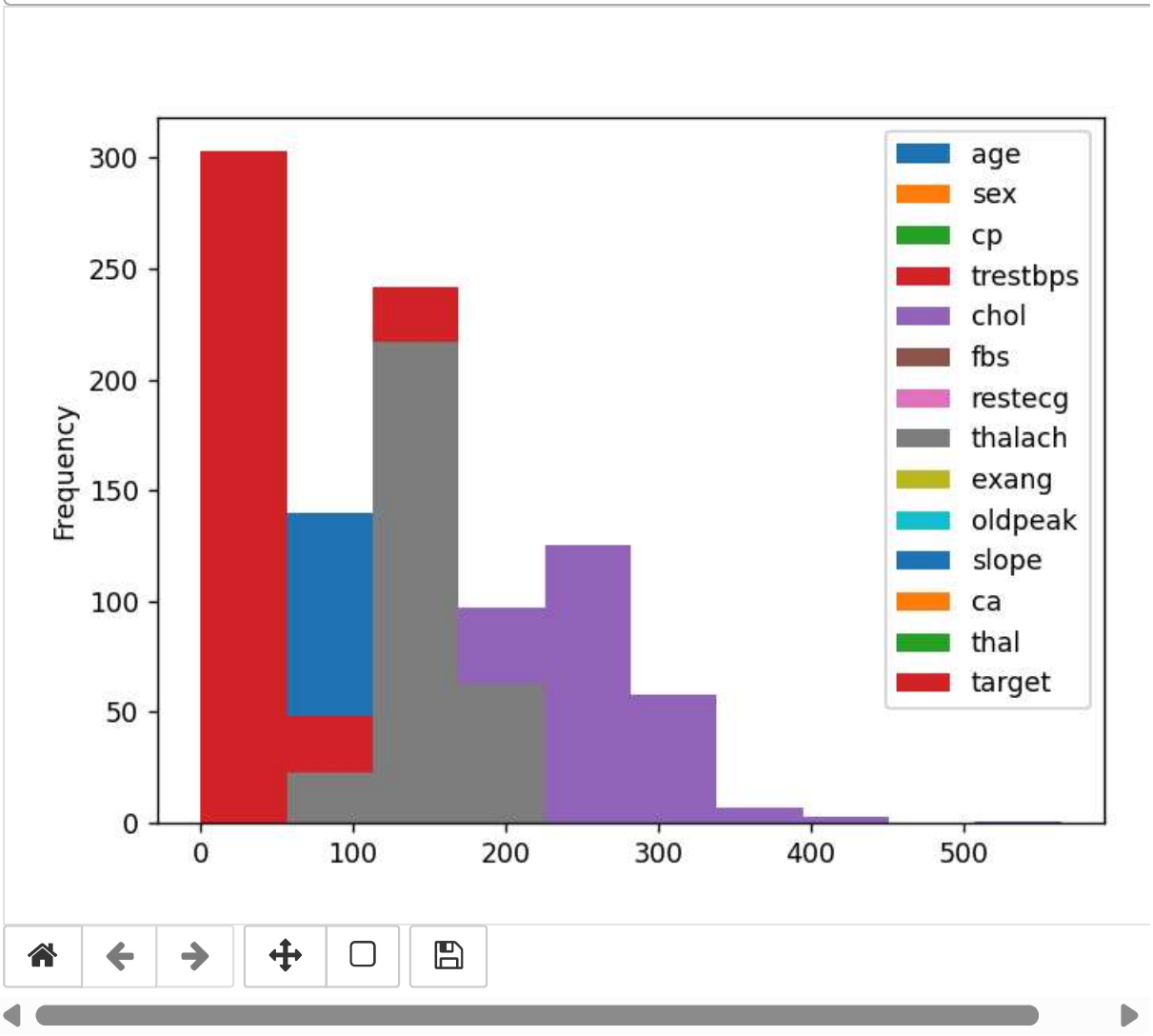



```
C:\ProgramData\anaconda3\Lib\site-packages\seaborn\axisgrid.py:118: UserWarni
ng: The figure layout has changed to tight
  self._figure.tight_layout(*args, **kwargs)
```

Out[8]: <seaborn.axisgrid.FacetGrid at 0x204afa7d950>

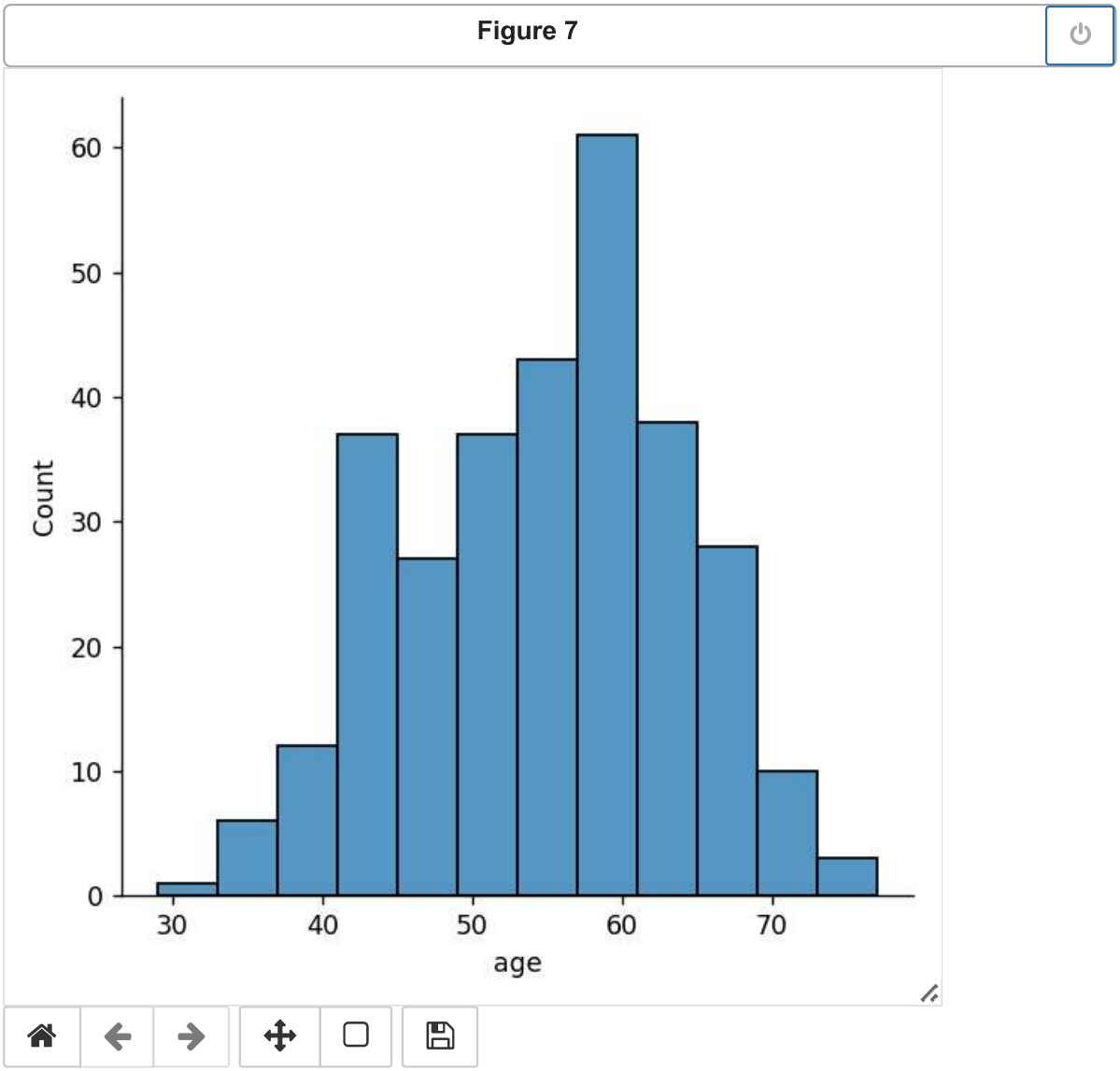
In [9]:
```
plt.figure()
ds_heart.plot(kind='hist')
```

**Figure 5**




Out[9]: <Axes: ylabel='Frequency'>

In [10]:
```
plt.figure()
sns.displot(ds_heart.age)
```

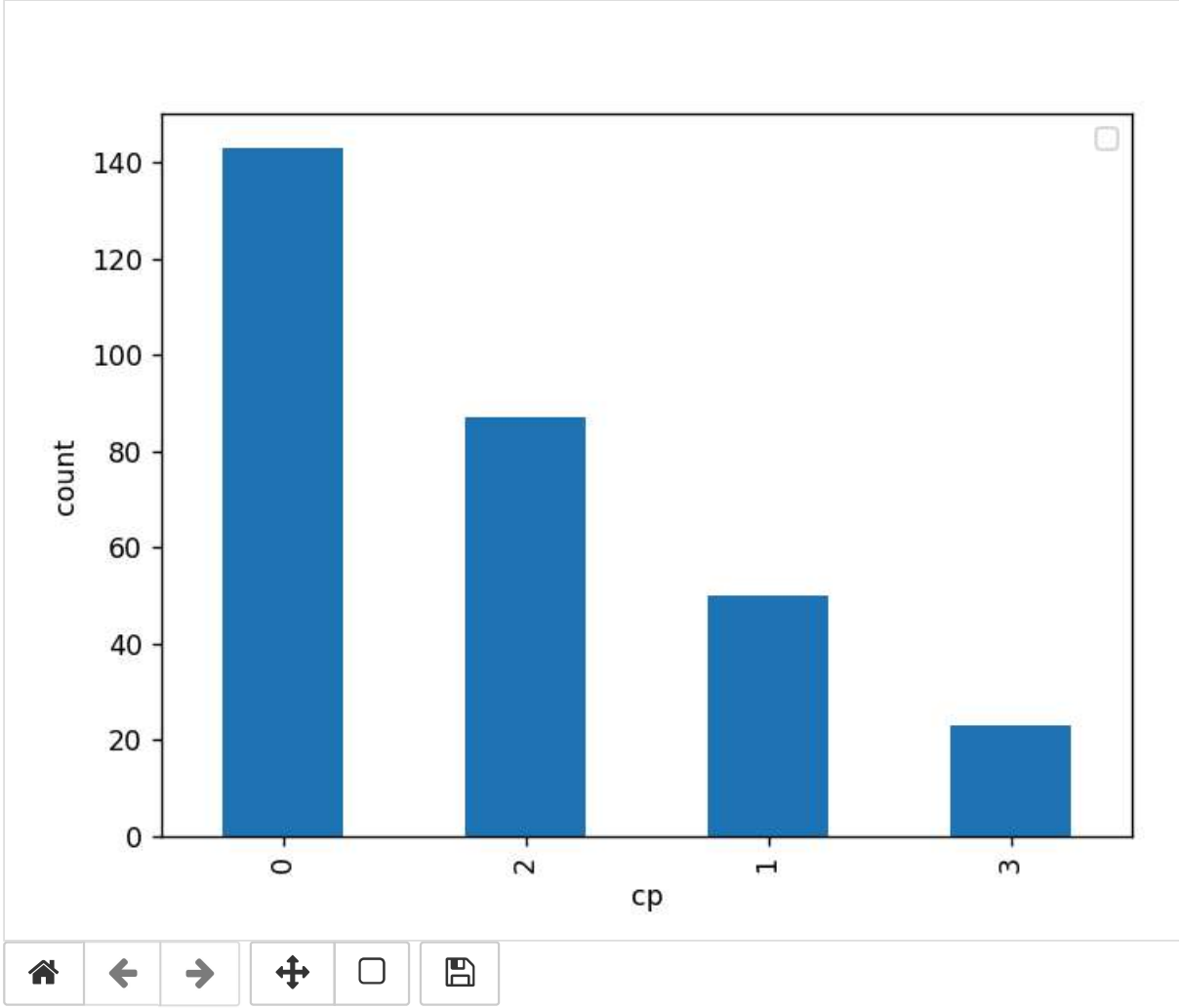



```
C:\ProgramData\anaconda3\Lib\site-packages\seaborn\axisgrid.py:118: UserWarni
ng: The figure layout has changed to tight
  self._figure.tight_layout(*args, **kwargs)
```

Out[10]: <seaborn.axisgrid.FacetGrid at 0x204b05238d0>

In [11]:
```
plt.figure()
plt.xlabel('cp')
plt.ylabel('count')
plt.legend()
ds_heart.cp.value_counts().plot(kind='bar')
```

**Figure 8**



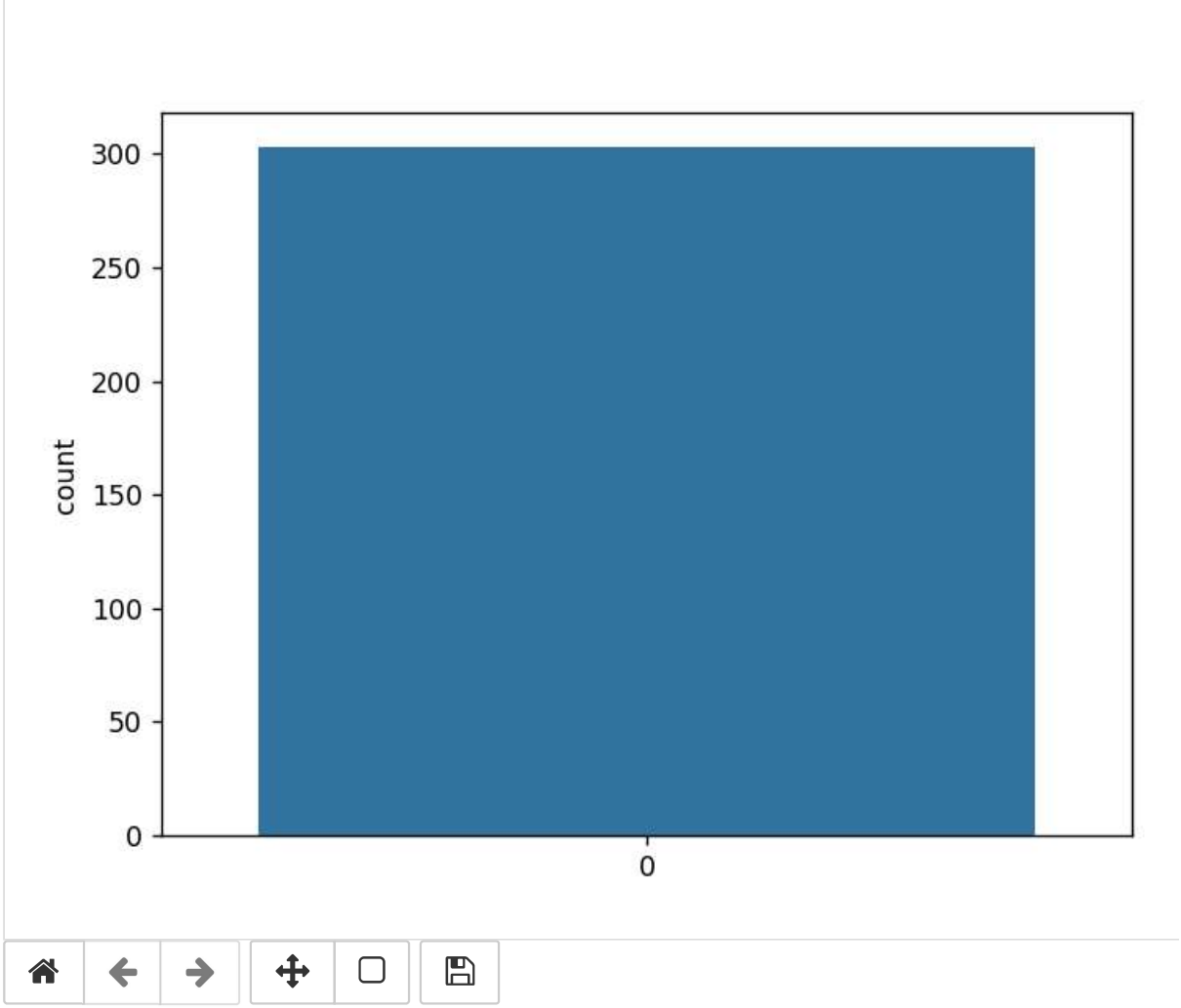

Left button pans, Right button zooms x/y fixes axis, CTRL fixes

```
No artists with labels found to put in legend.  Note that artists whose label
start with an underscore are ignored when legend() is called with no argumen
t.
```

Out[11]: <Axes: xlabel='cp', ylabel='count'>

In [12]:
```
plt.figure()
sns.countplot(ds_heart.cp)
```

**Figure 9**

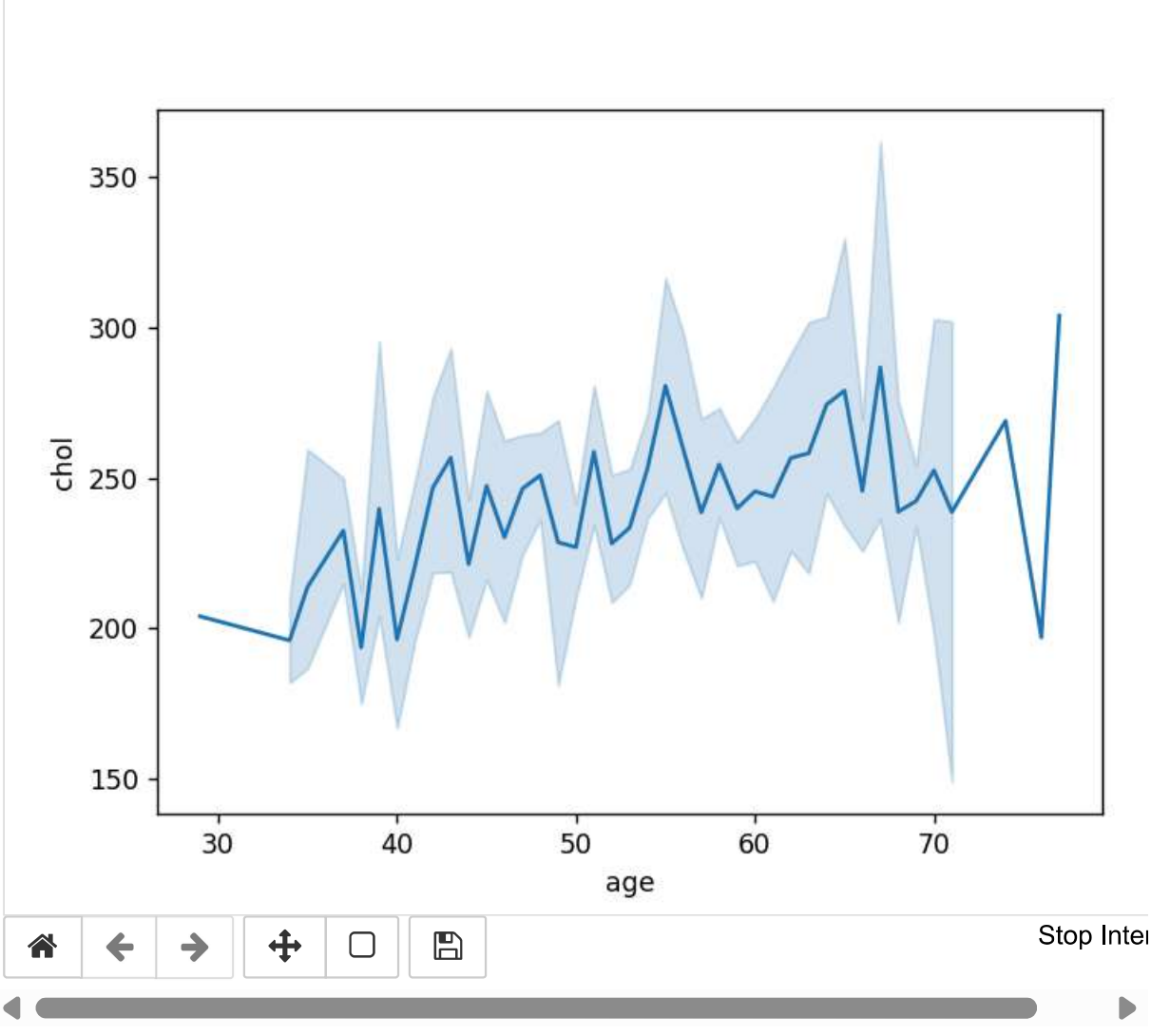



Left button pans, Right button zooms x/y fixes axis, CTRL fixes

Out[12]:
```
<Axes: ylabel='count'>
```

In [13]:
```
plt.figure()
sns.lineplot(x='age', y='chol', data=ds_heart)
```

**Figure 10**




Out[13]:
```
<Axes: xlabel='age', ylabel='chol'>
```

In [ ]:

In [ ]:

In [ ]: