In [ ]:

```
# Name :- Sarthak Pagar
# Roll No. :- 40
# Class :- TE(IT)
# Practical 6A :- Visualize the data using Python libraries matplotlib, seab
```

In [1]:

```
import numpy as np
import pandas as pd
import matplotlib.pyplot as plt
import seaborn as sns
```

In [2]:

```
df=pd.read_csv('heart.csv')
```

In [3]:

```
df.columns
```

Out[3]:

```
Index(['age', 'sex', 'cp', 'trtbps', 'chol', 'fbs', 'restecg', 'thalachh',
       'exng', 'oldpeak', 'slp', 'caa', 'thall', 'output'],
      dtype='object')
```

In [4]:

```
df
```

Out[4]:

	age	sex	cp	trtbps	chol	fbs	restecg	thalachh	exng	oldpeak	slp	c
0	63	1	3	145	233	1	0	150	0	2.3	0	
1	37	1	2	130	250	0	1	187	0	3.5	0	
2	41	0	1	130	204	0	0	172	0	1.4	2	
3	56	1	1	120	236	0	1	178	0	0.8	2	
4	57	0	0	120	354	0	1	163	1	0.6	2	
...	...	...	...	...	...	...	...	...	...	...	...	
298	57	0	0	140	241	0	1	123	1	0.2	1	
299	45	1	3	110	264	0	1	132	0	1.2	1	
300	68	1	0	144	193	1	1	141	0	3.4	1	
301	57	1	0	130	131	0	1	115	1	1.2	1	
302	57	0	1	130	236	0	0	174	0	0.0	1	

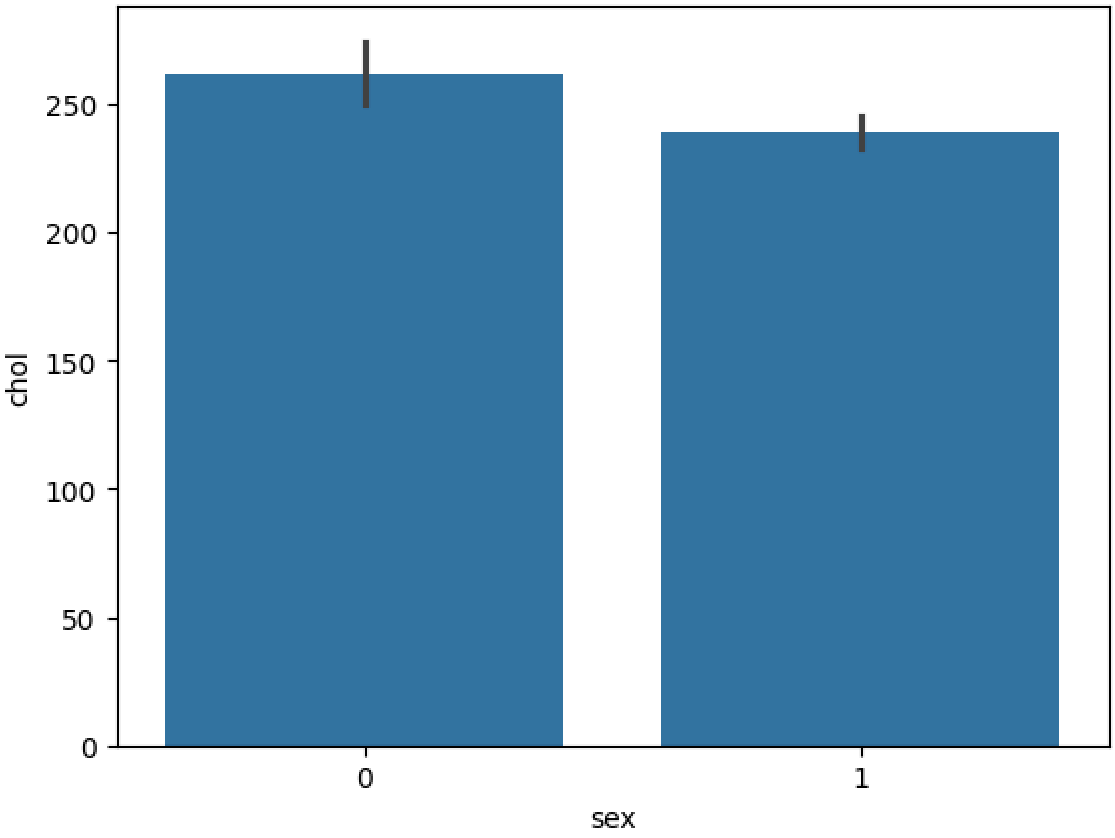
303 rows × 14 columns

In [5]:

```
# Bar Plot
sns.barplot(x='sex',y='chol',data=df)
```

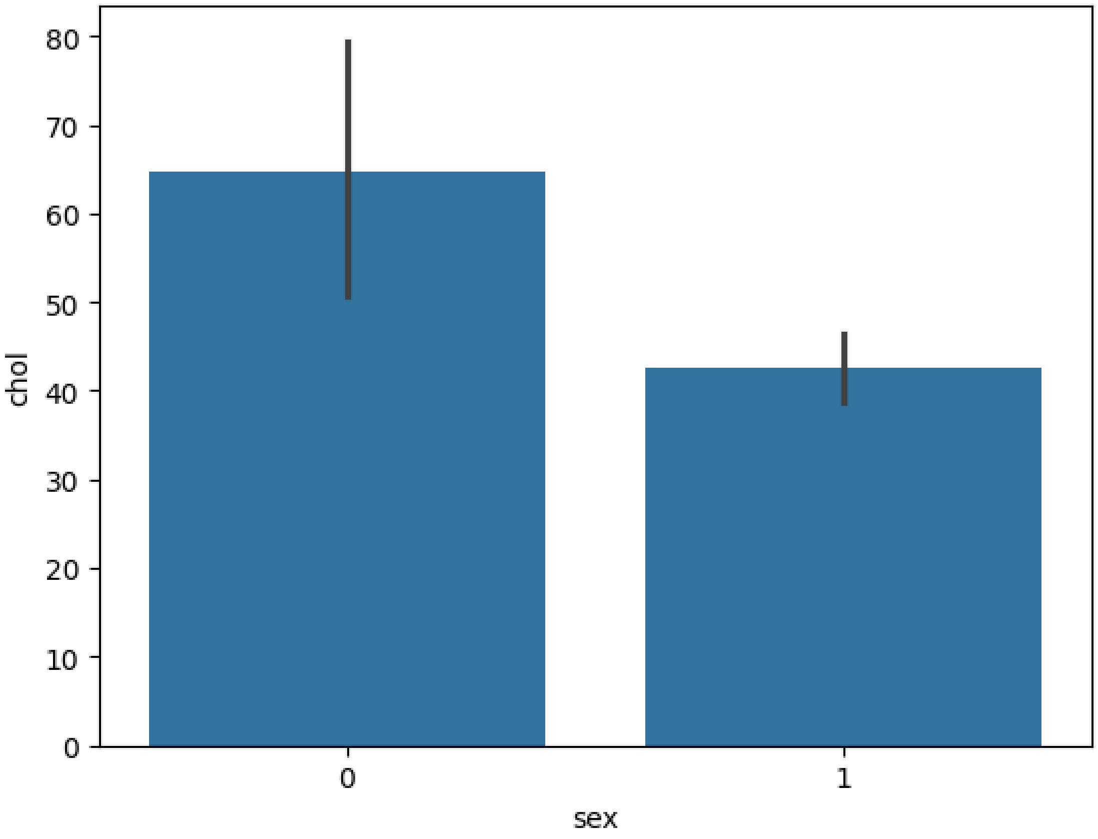
Out[5]:

```
<Axes: xlabel='sex', ylabel='chol'>
```



```
In [6]: sns.barplot(x='sex',y='chol',data=df,estimator=np.std)
```

```
Out[6]: <Axes: xlabel='sex', ylabel='chol'>
```

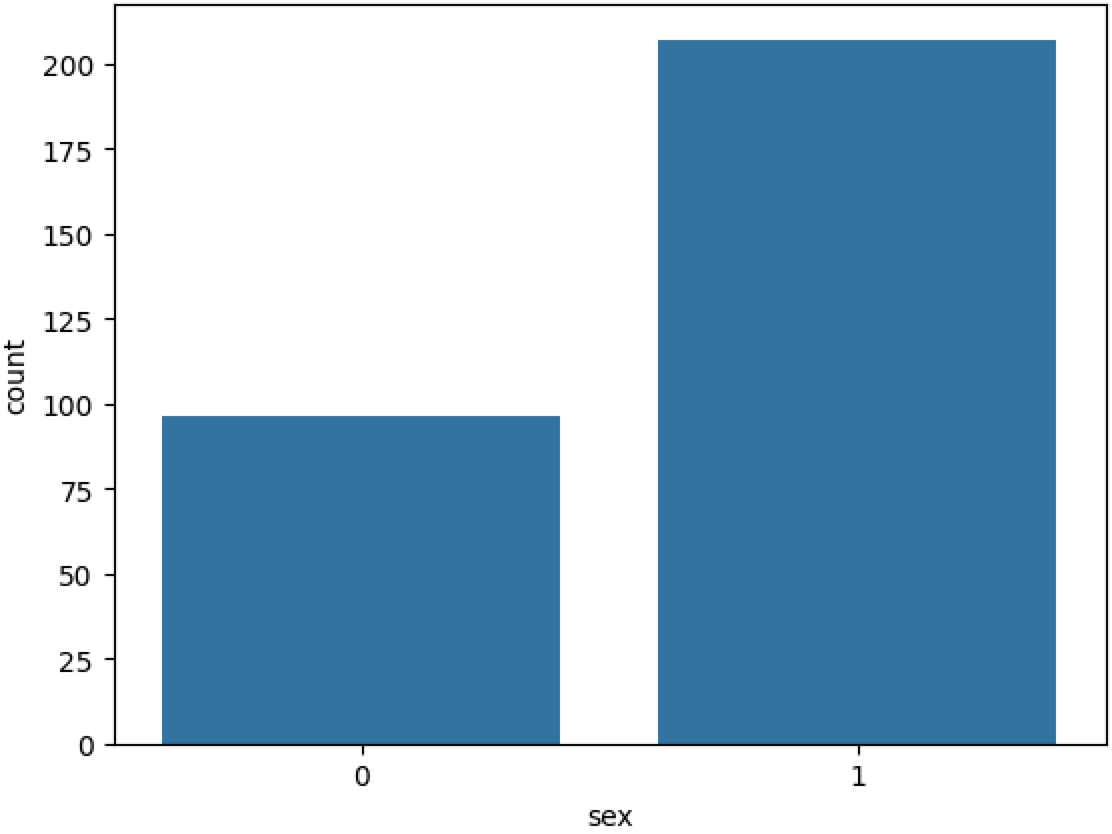


In [7]:

```
# Count Plot
sns.countplot(x='sex',data=df)
```

Out[7]:

```
<Axes: xlabel='sex', ylabel='count'>
```

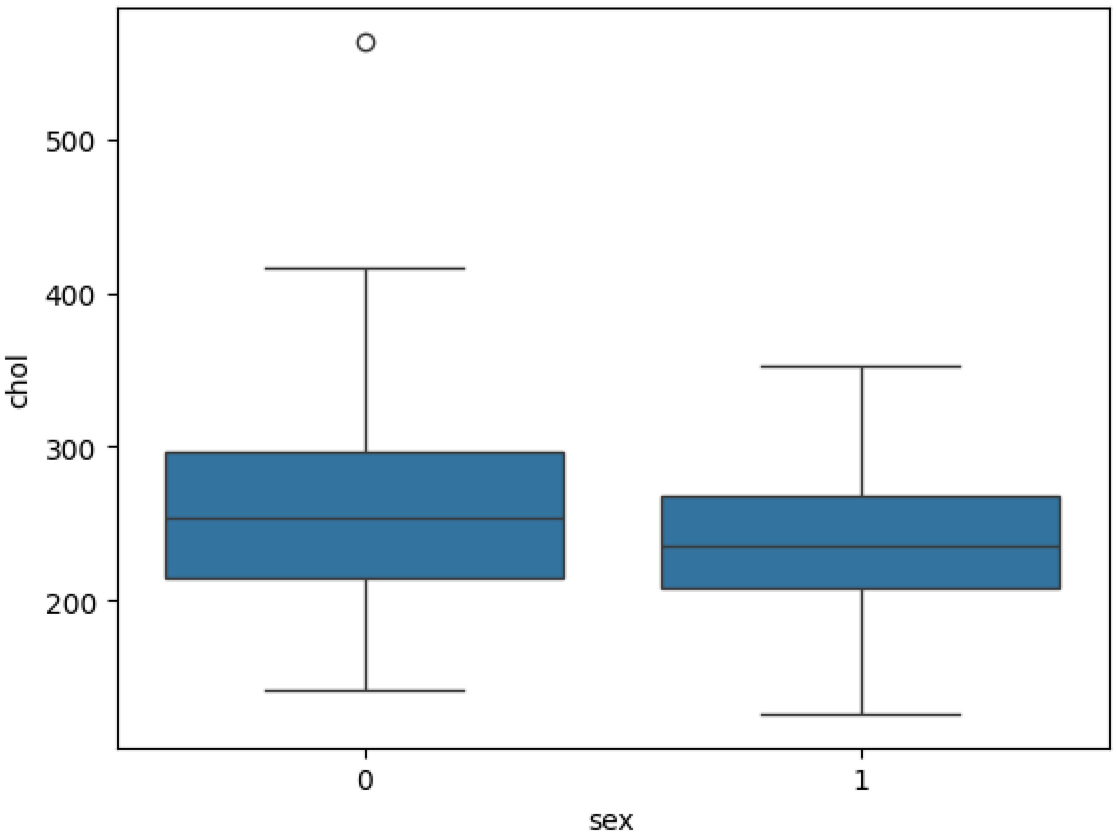


In [8]:

```
# Box Plot
sns.boxplot(x='sex',y='chol',data=df)
```

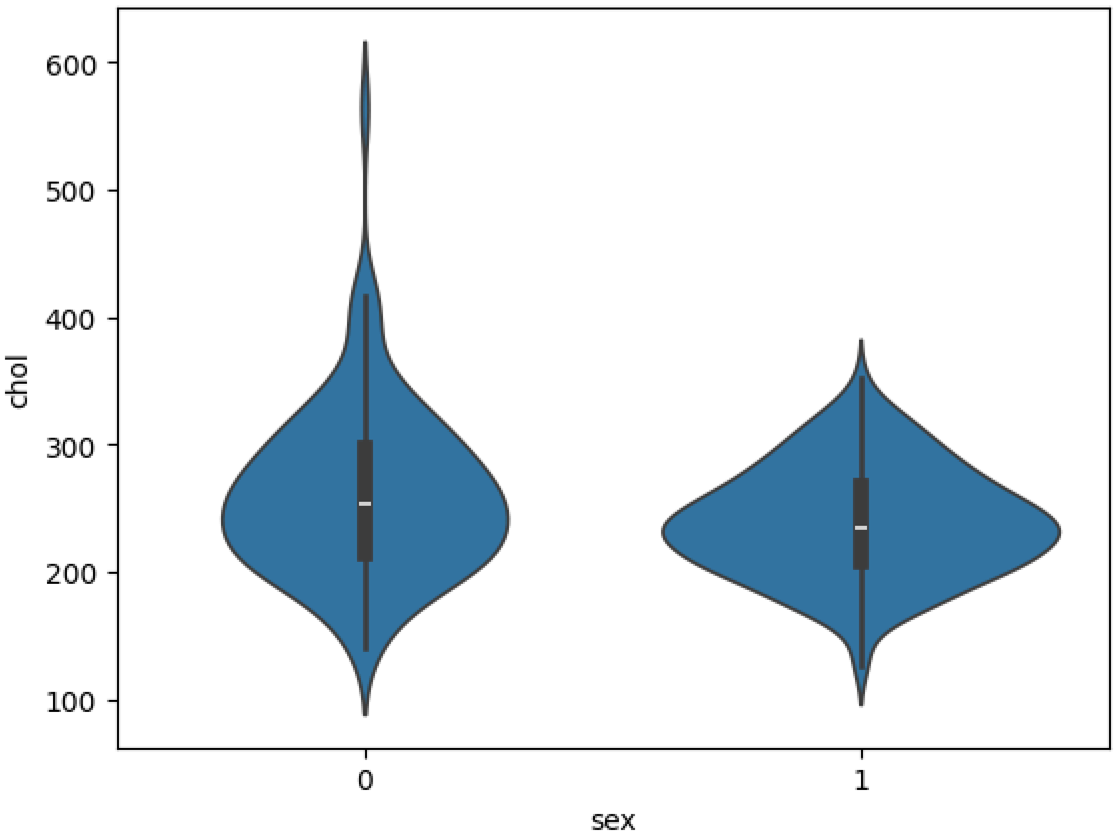
Out[8]:

```
<Axes: xlabel='sex', ylabel='chol'>
```

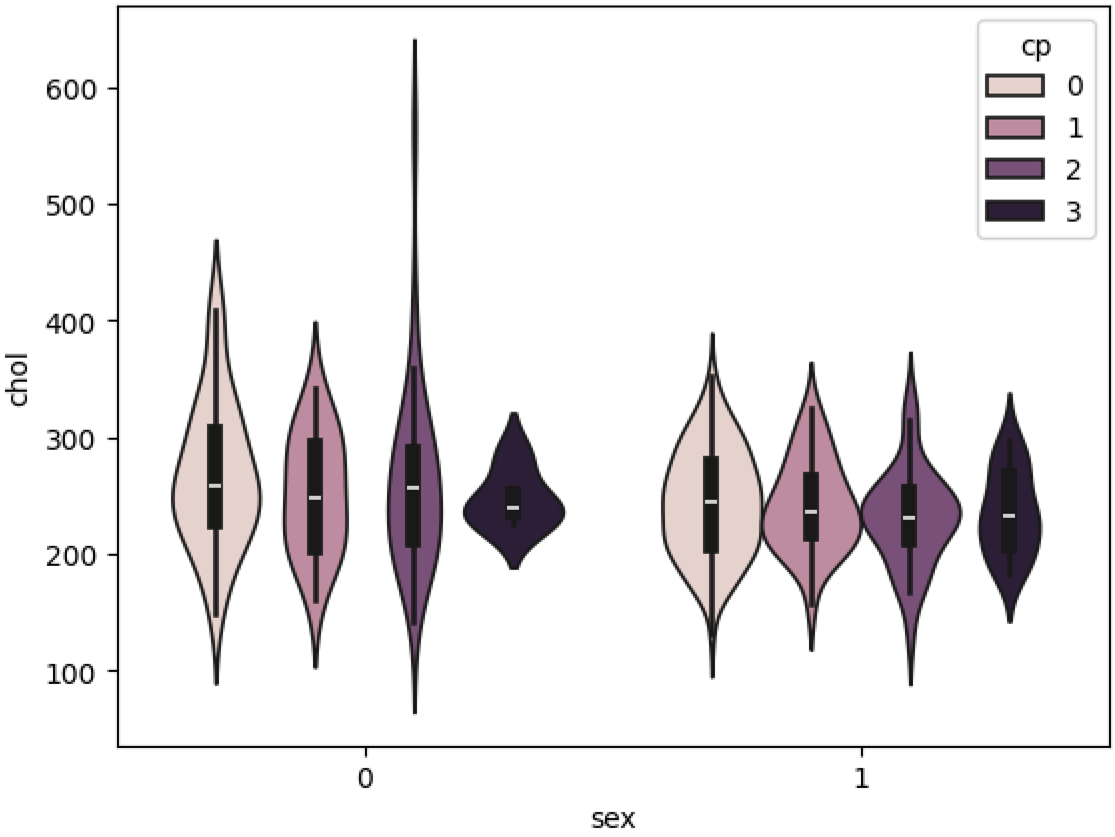


```
In [9]: # Violin Plot
        sns.violinplot(x='sex',y='chol',data=df)
```

```
Out[9]: <Axes: xlabel='sex', ylabel='chol'>
```



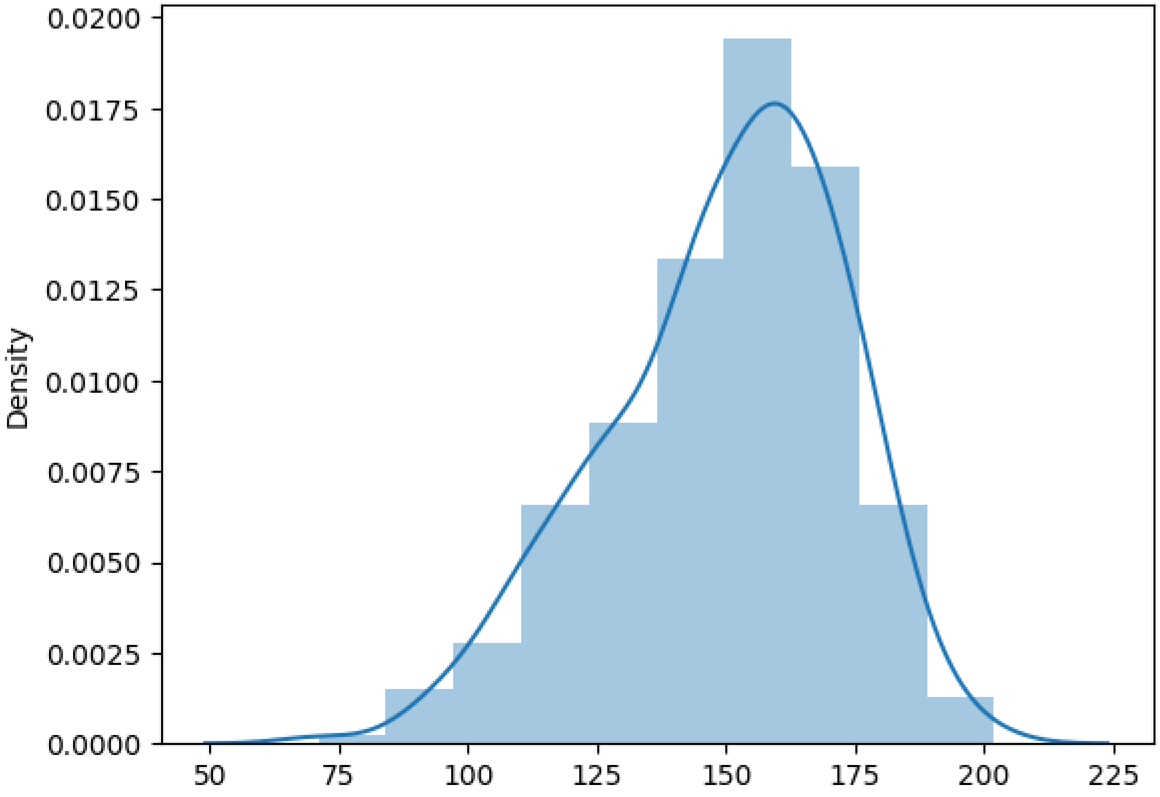
```
In [10]: sns.violinplot(x='sex',y='chol',data=df,hue='cp')

Out[10]: <Axes: xlabel='sex', ylabel='chol'>
```



```
In [11]: sns.distplot(x=df['thalachh'],bins=10)
```

```
C:\Users\sspag\AppData\Local\Temp\ipykernel_6084\1174550978.py:1: UserWarnin
g:

`distplot` is a deprecated function and will be removed in seaborn v0.14.0.

Please adapt your code to use either `displot` (a figure-level function with
similar flexibility) or `histplot` (an axes-level function for histograms).

For a guide to updating your code to use the new functions, please see
https://gist.github.com/mwaskom/de44147ed2974457ad6372750bbe5751

  sns.distplot(x=df['thalachh'],bins=10)
```

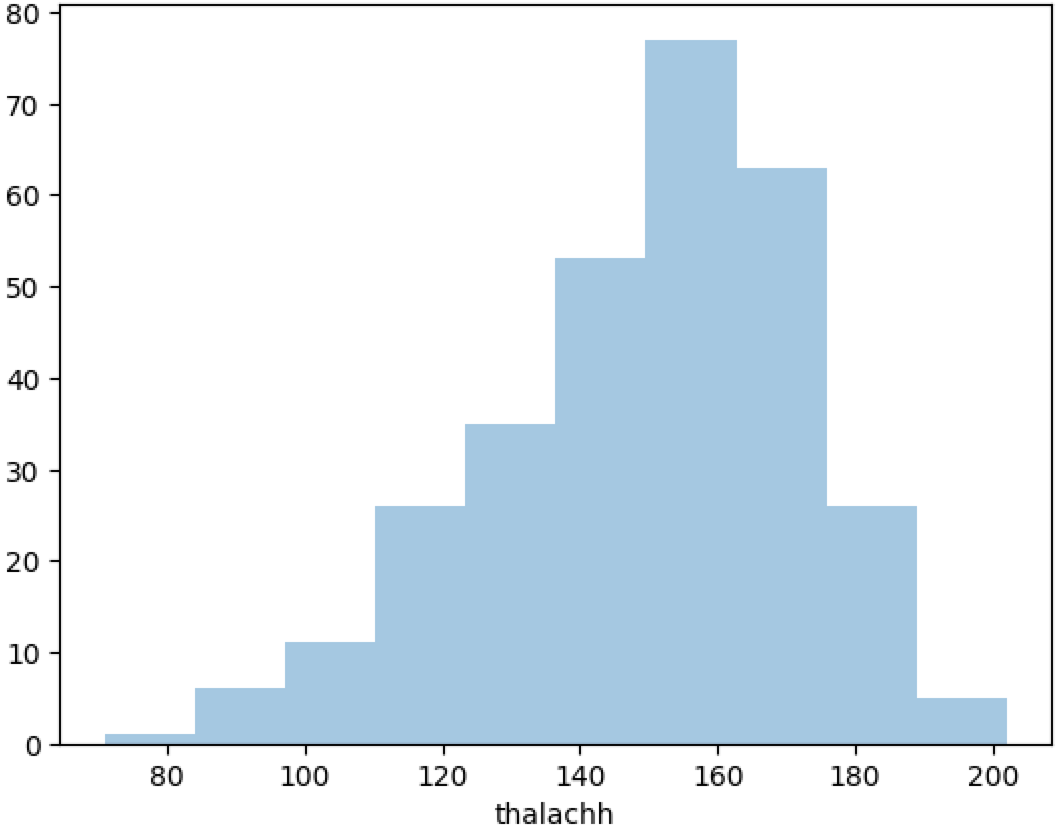
```
Out[11]: <Axes: ylabel='Density'>
```



```
In [12]: sns.distplot(df['thalachh'],bins=10,kde=False)
```

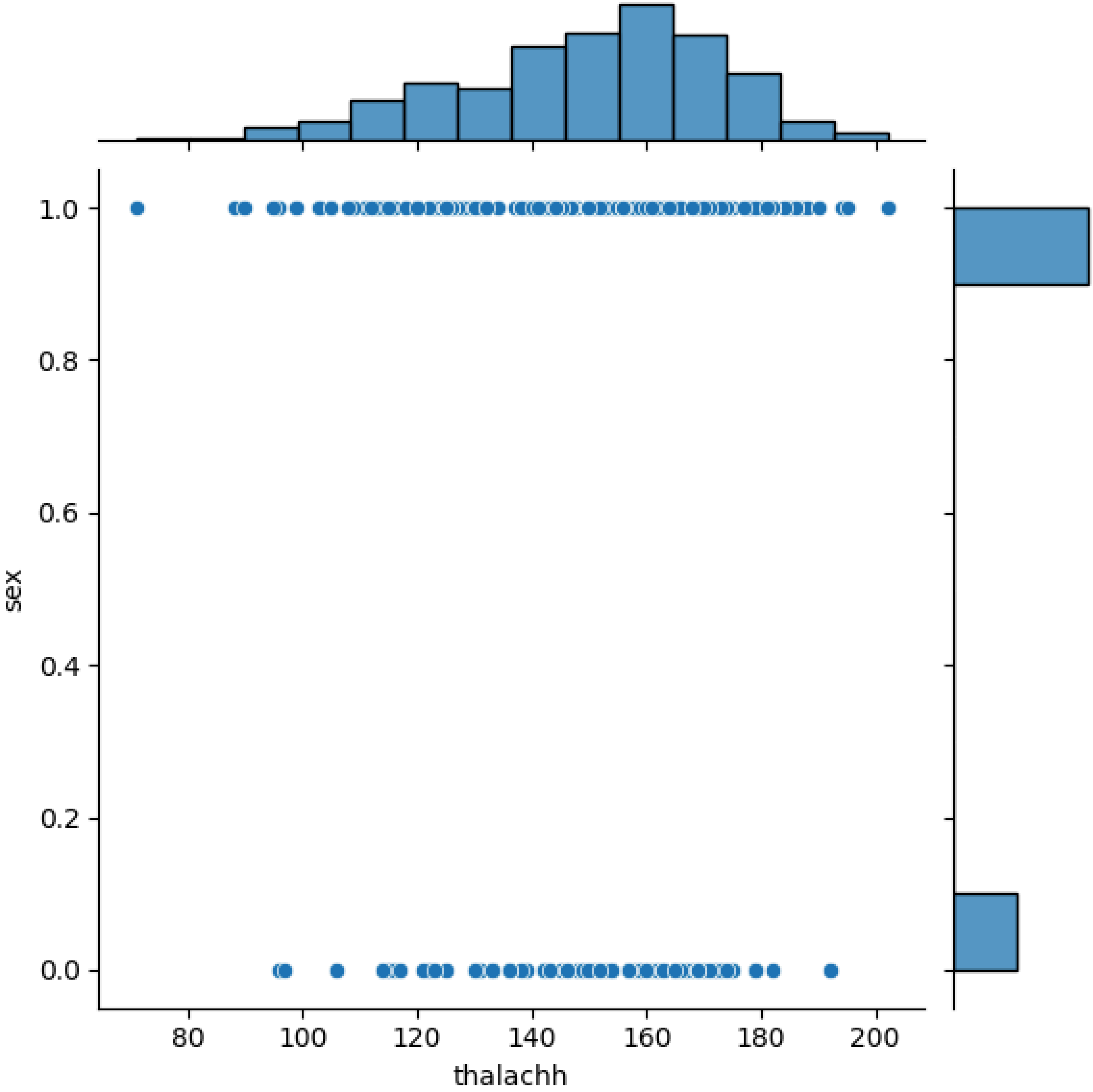
```
C:\Users\sspag\AppData\Local\Temp\ipykernel_6084\2465971988.py:1: UserWarnin
g:

`distplot` is a deprecated function and will be removed in seaborn v0.14.0.

Please adapt your code to use either `displot` (a figure-level function with
similar flexibility) or `histplot` (an axes-level function for histograms).

For a guide to updating your code to use the new functions, please see
https://gist.github.com/mwaskom/de44147ed2974457ad6372750bbe5751

  sns.distplot(df['thalachh'],bins=10,kde=False)
```

```
Out[12]: <Axes: xlabel='thalachh'>
```



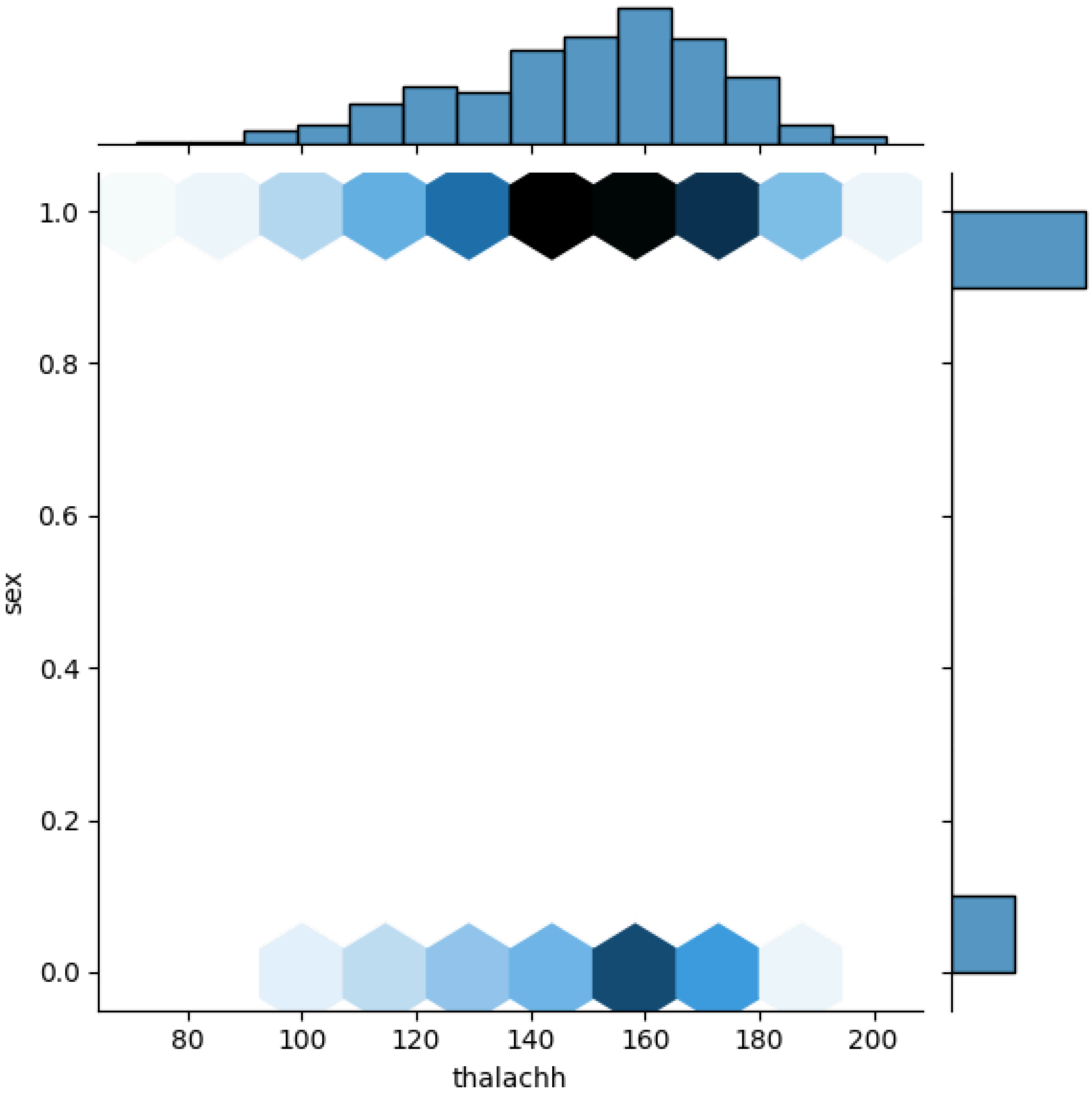
```
In [13]: # Joint Plot
sns.jointplot(x=df['thalachh'],y=df['sex'],kind='scatter')
```

```
Out[13]: <seaborn.axisgrid.JointGrid at 0x29047864e90>
```



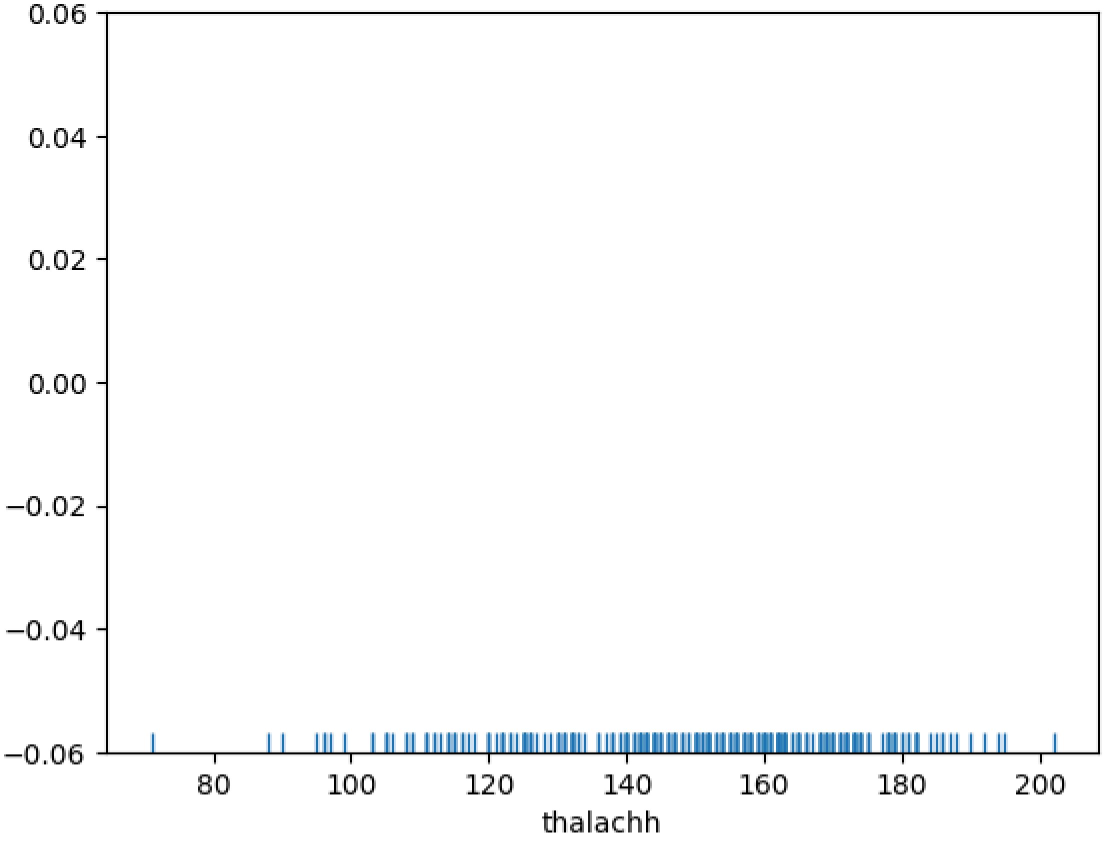
```
In [14]: sns.jointplot(x=df['thalachh'],y=df['sex'],kind='hex')
```

```
Out[14]: <seaborn.axisgrid.JointGrid at 0x29048abad10>
```



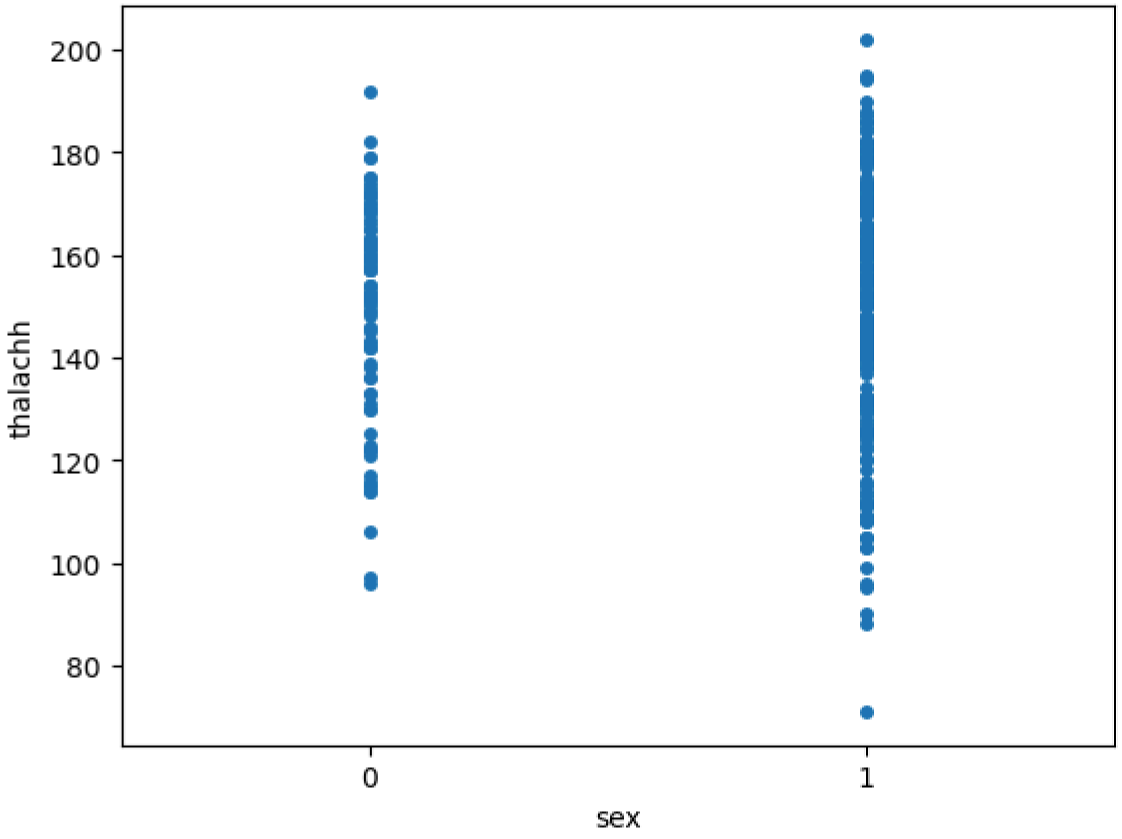
```
In [15]: # The Rug Plot
         sns.rugplot(df['thalachh'])
```

```
Out[15]: <Axes: xlabel='thalachh'>
```

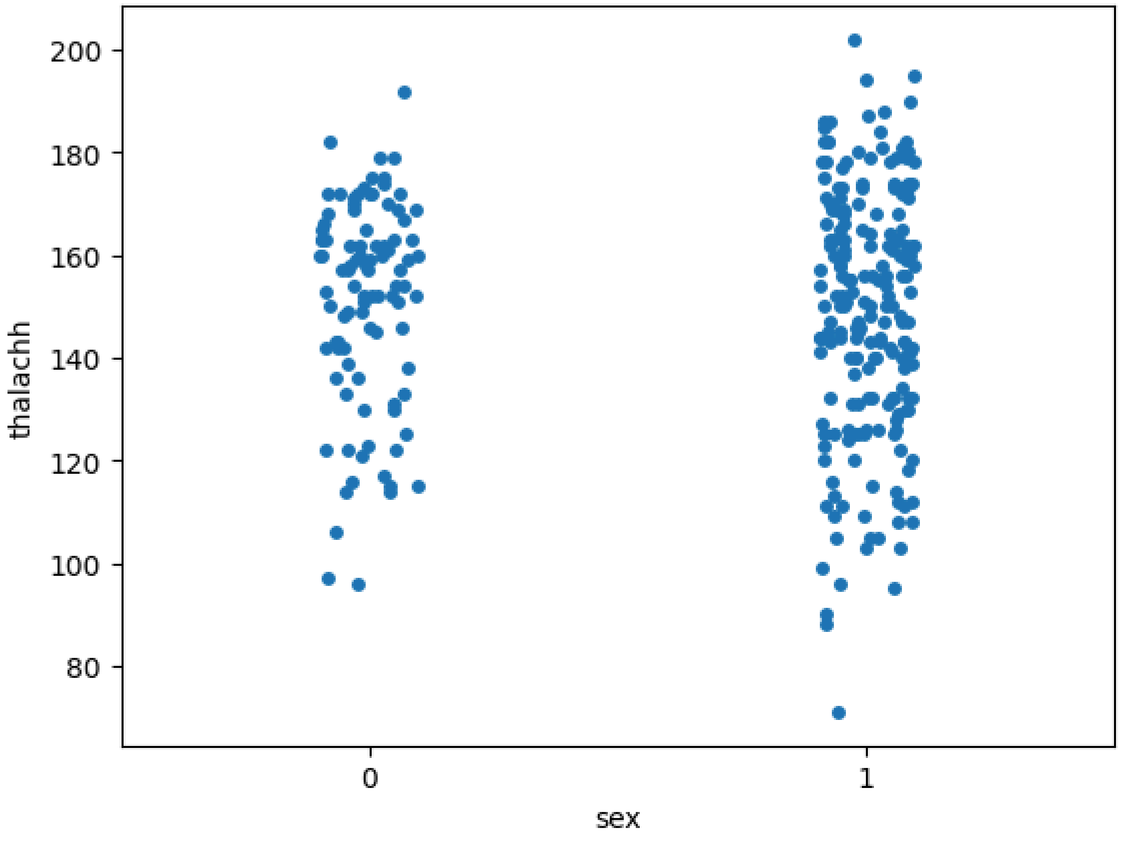


In [16]:
```
# Strip Plot
sns.stripplot(y='thalachh',x='sex',data=df,jitter= False)
```

Out[16]:
```
<Axes: xlabel='sex', ylabel='thalachh'>
```

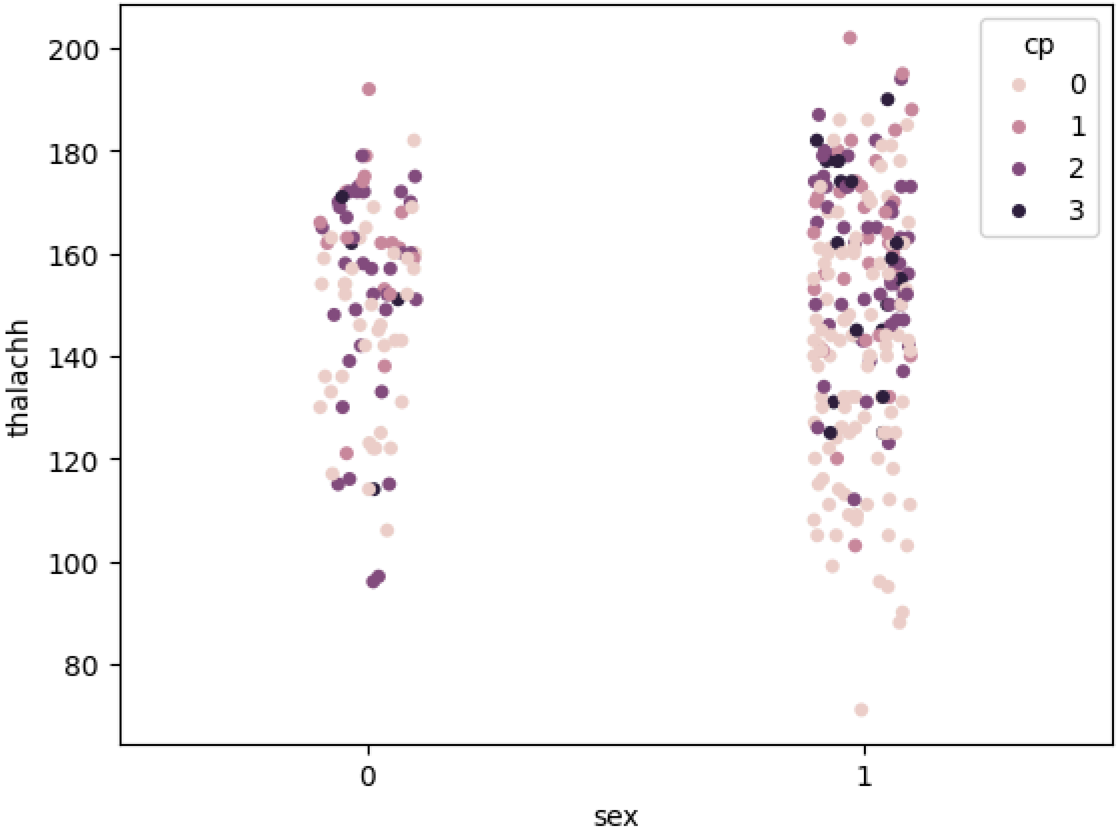


```
In [17]: sns.stripplot(y='thalachh',x='sex',data=df,jitter= True)

Out[17]: <Axes: xlabel='sex', ylabel='thalachh'>
```



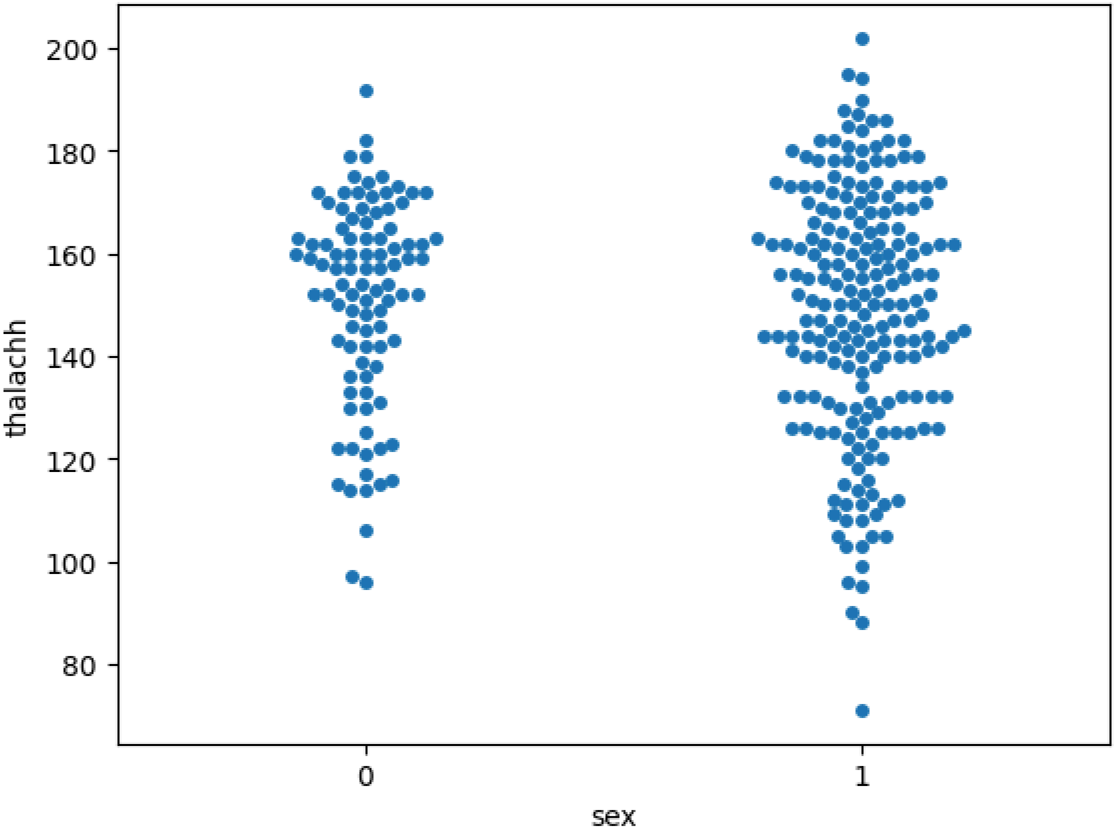
```
In [18]: sns.stripplot(x='sex',y='thalachh',data=df,jitter=True,hue='cp')
```

```
Out[18]: <Axes: xlabel='sex', ylabel='thalachh'>
```



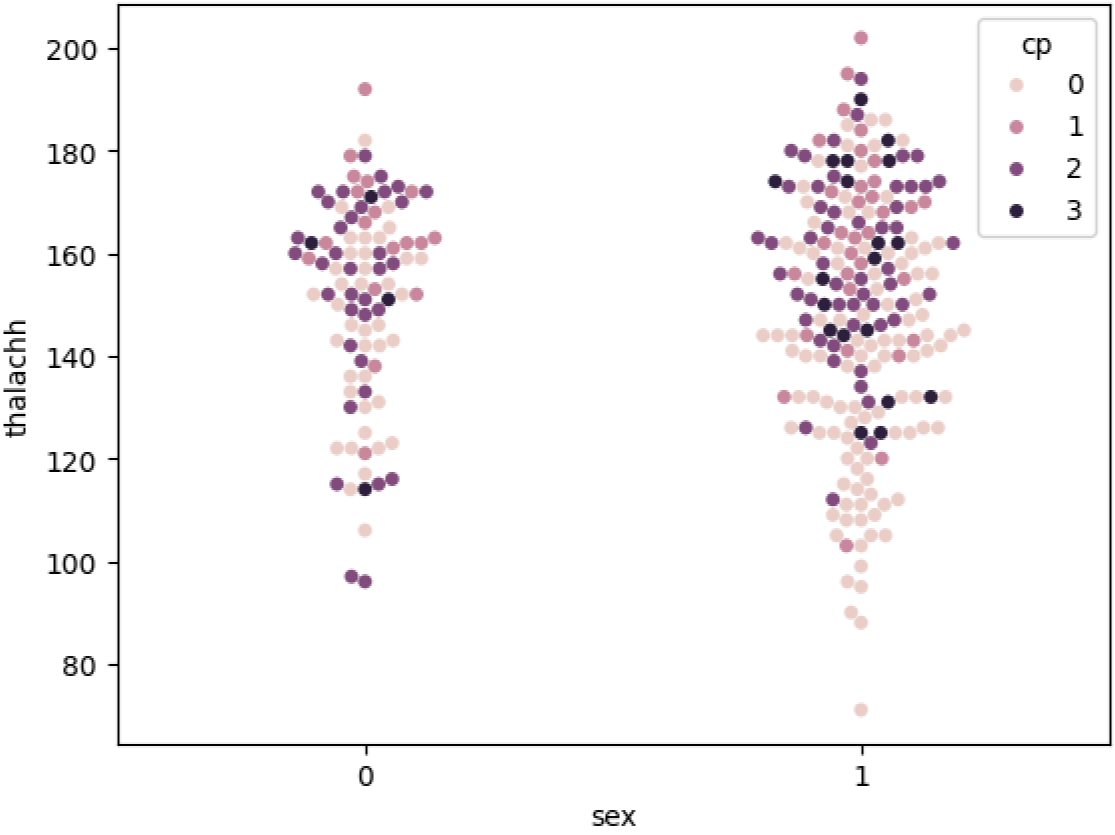
```
In [19]: # Swarm Plot
         sns.swarmplot(x='sex',y='thalachh',data=df)
```

```
Out[19]: <Axes: xlabel='sex', ylabel='thalachh'>
```



```
In [20]: sns.swarmplot(x='sex',y='thalachh',data=df,hue='cp')
```

```
Out[20]: <Axes: xlabel='sex', ylabel='thalachh'>
```



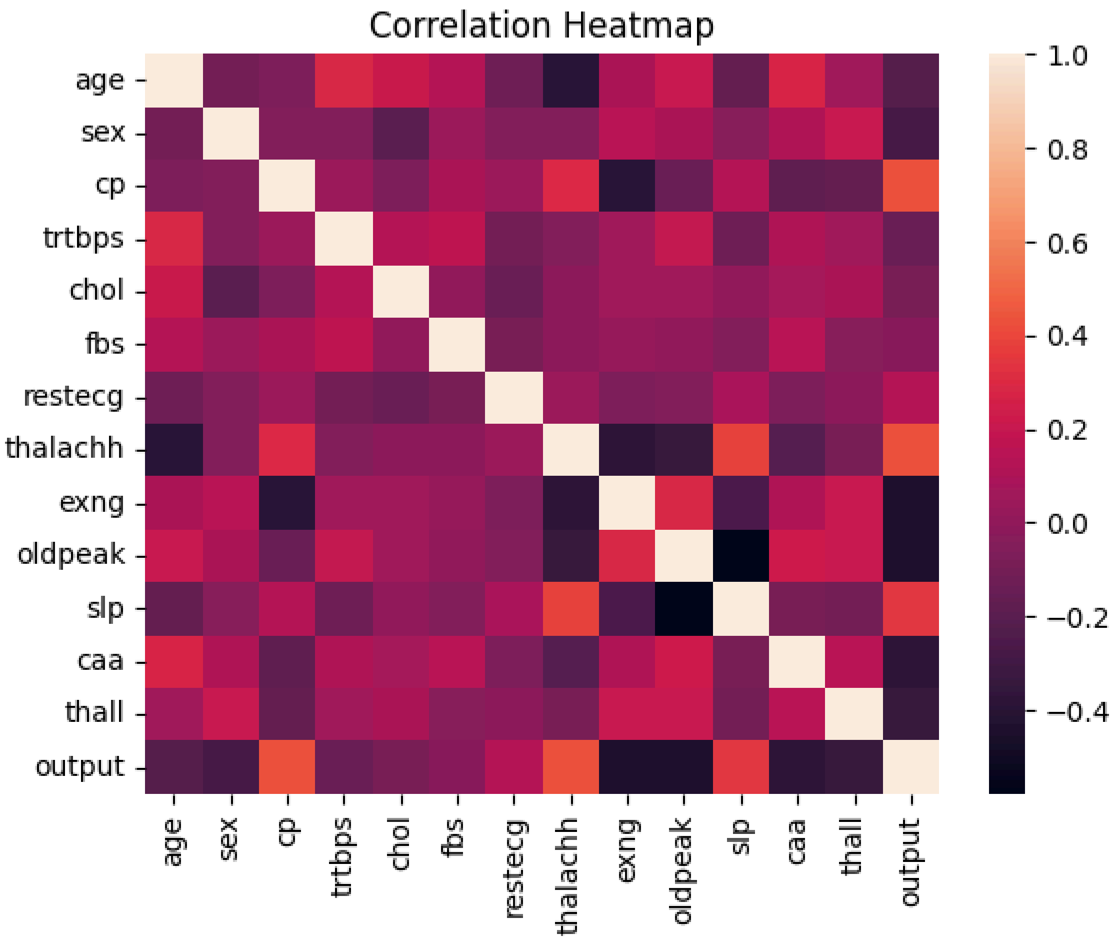
In [21]:
```
df.corr()
```

Out[21]:

	age	sex	cp	trtbps	chol	fbs	rest
age	1.000000	-0.098447	-0.068653	0.279351	0.213678	0.121308	-0.116
sex	-0.098447	1.000000	-0.049353	-0.056769	-0.197912	0.045032	-0.058
cp	-0.068653	-0.049353	1.000000	0.047608	-0.076904	0.094444	0.044
trtbps	0.279351	-0.056769	0.047608	1.000000	0.123174	0.177531	-0.114
chol	0.213678	-0.197912	-0.076904	0.123174	1.000000	0.013294	-0.151
fbs	0.121308	0.045032	0.094444	0.177531	0.013294	1.000000	-0.084
restecg	-0.116211	-0.058196	0.044421	-0.114103	-0.151040	-0.084189	1.000
thalachh	-0.398522	-0.044020	0.295762	-0.046698	-0.009940	-0.008567	0.044
exng	0.096801	0.141664	-0.394280	0.067616	0.067023	0.025665	-0.070
oldpeak	0.210013	0.096093	-0.149230	0.193216	0.053952	0.005747	-0.058
slp	-0.168814	-0.030711	0.119717	-0.121475	-0.004038	-0.059894	0.093
caa	0.276326	0.118261	-0.181053	0.101389	0.070511	0.137979	-0.072
thall	0.068001	0.210041	-0.161736	0.062210	0.098803	-0.032019	-0.011
output	-0.225439	-0.280937	0.433798	-0.144931	-0.085239	-0.028046	0.137

In [22]:
```
corr = df.corr()
sns.heatmap(corr)
plt.title('Correlation Heatmap')
```

Out[22]:
```
Text(0.5, 1.0, 'Correlation Heatmap')
```

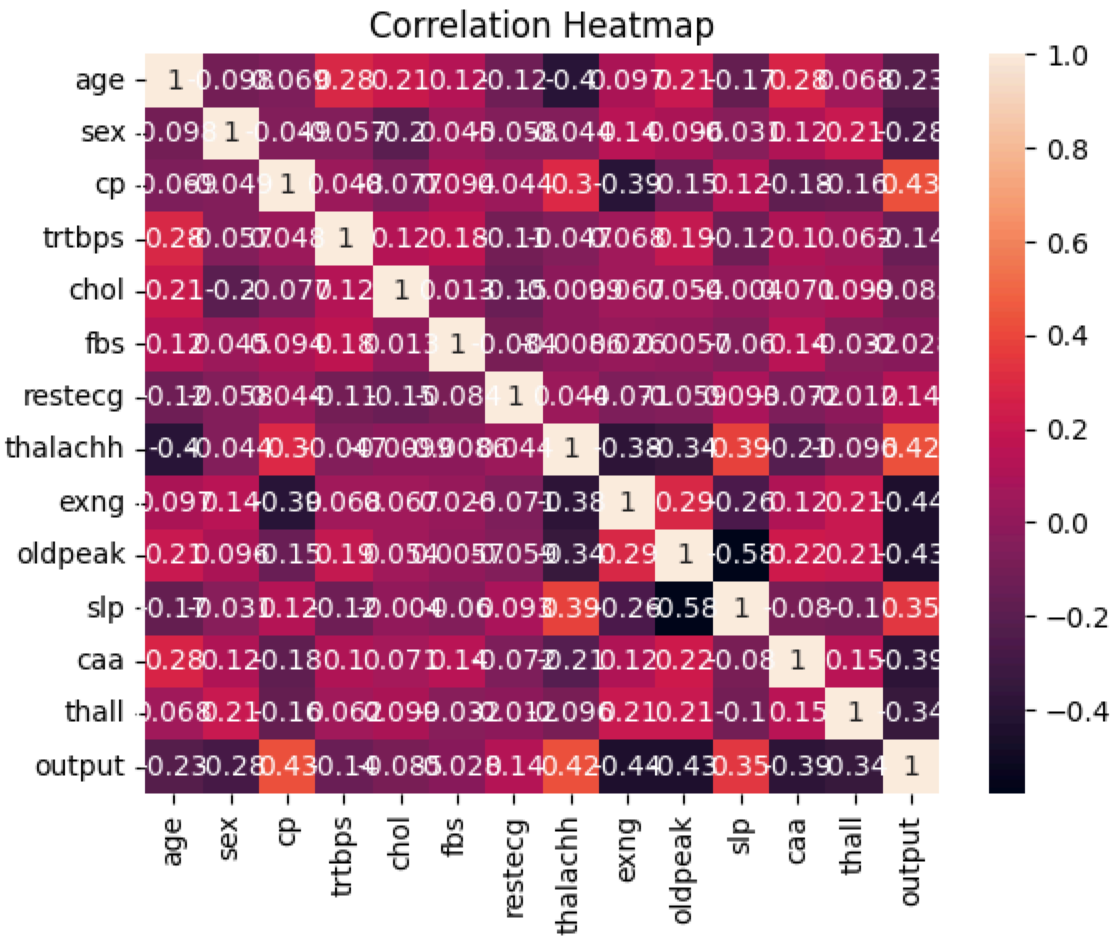


In [24]:

```
corr = df.corr()
sns.heatmap(corr, annot=True)
plt.title('Correlation Heatmap')
```

Out[24]:

```
Text(0.5, 1.0, 'Correlation Heatmap')
```



In [ ]:

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