In [1]:
```
import pandas as pd
import matplotlib.pyplot as plt
import seaborn as sns
```

In [4]:
```
df = pd.read_csv('heart.csv')
df
```

Out[4]:

	Unnamed: 0	Age	Sex	ChestPain	RestBP	Chol	Fbs	RestECG	MaxHR	ExAng	Oldpeak	Slope
0	1	63	1	typical	145	233	1	2	150	0	2.3	3
1	2	67	1	asymptomatic	160	286	0	2	108	1	1.5	2
2	3	67	1	asymptomatic	120	229	0	2	129	1	2.6	2
3	4	37	1	nonanginal	130	250	0	0	187	0	3.5	3
4	5	41	0	nontypical	130	204	0	2	172	0	1.4	1
...	...	...	...	...	...	...	...	...	...	...	...	...
298	299	45	1	typical	110	264	0	0	132	0	1.2	2
299	300	68	1	asymptomatic	144	193	1	0	141	0	3.4	2
300	301	57	1	asymptomatic	130	131	0	0	115	1	1.2	2
301	302	57	0	nontypical	130	236	0	2	174	0	0.0	2
302	303	38	1	nonanginal	138	175	0	0	173	0	0.0	1

303 rows × 15 columns

In [5]:
```
df.head()
```

Out[5]:

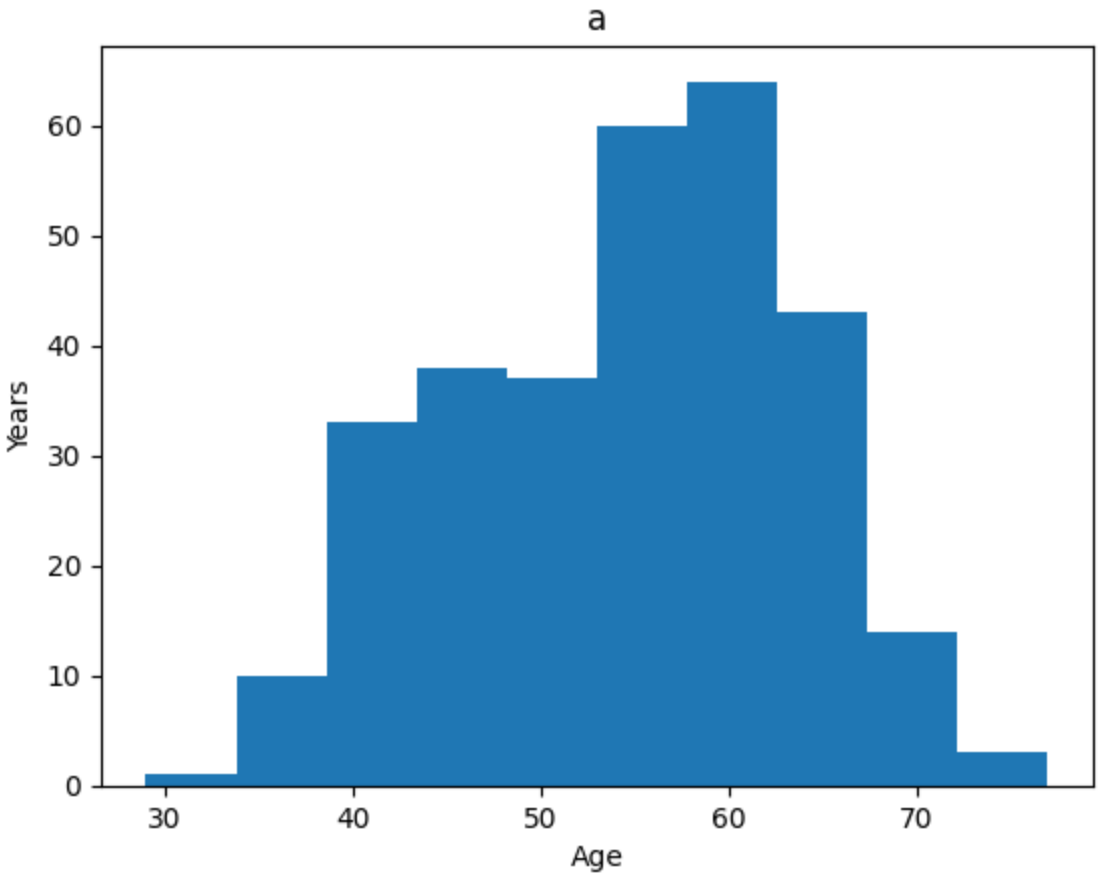
	Unnamed: 0	Age	Sex	ChestPain	RestBP	Chol	Fbs	RestECG	MaxHR	ExAng	Oldpeak	Slope	Ca
0	1	63	1	typical	145	233	1	2	150	0	2.3	3	0.0
1	2	67	1	asymptomatic	160	286	0	2	108	1	1.5	2	3.0
2	3	67	1	asymptomatic	120	229	0	2	129	1	2.6	2	2.0
3	4	37	1	nonanginal	130	250	0	0	187	0	3.5	3	0.0
4	5	41	0	nontypical	130	204	0	2	172	0	1.4	1	0.0

In [6]:
```
df.isnull().sum()
```

Out[6]:
```
Unnamed: 0    0
Age           0
Sex           0
ChestPain     0
RestBP        0
Chol          0
Fbs           0
RestECG       0
MaxHR         0
ExAng         0
Oldpeak       0
Slope         0
Ca            4
Thal          2
AHD           0
dtype: int64
```

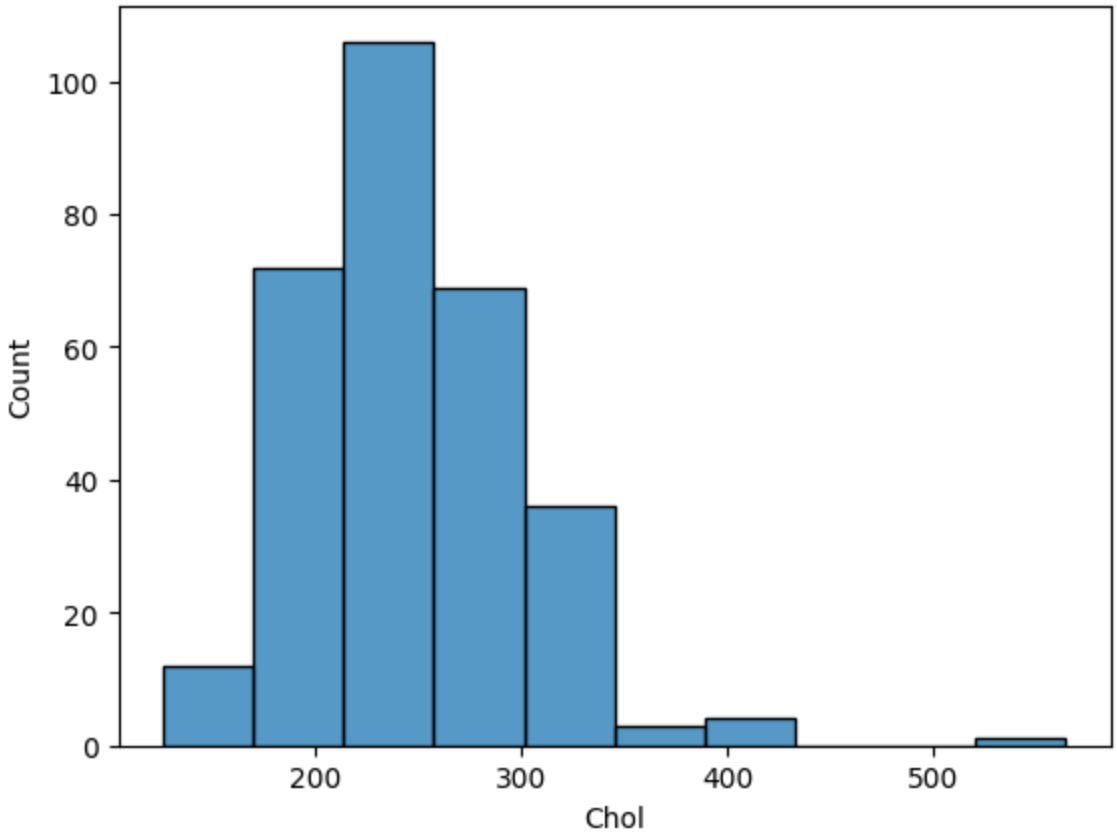
In [20]:
```
plt.hist(df['Age'],bins=10)
plt.xlabel('Age')
plt.ylabel('Years')
plt.title('a')
```

Out[20]:
```
Text(0.5, 1.0, 'a')
```



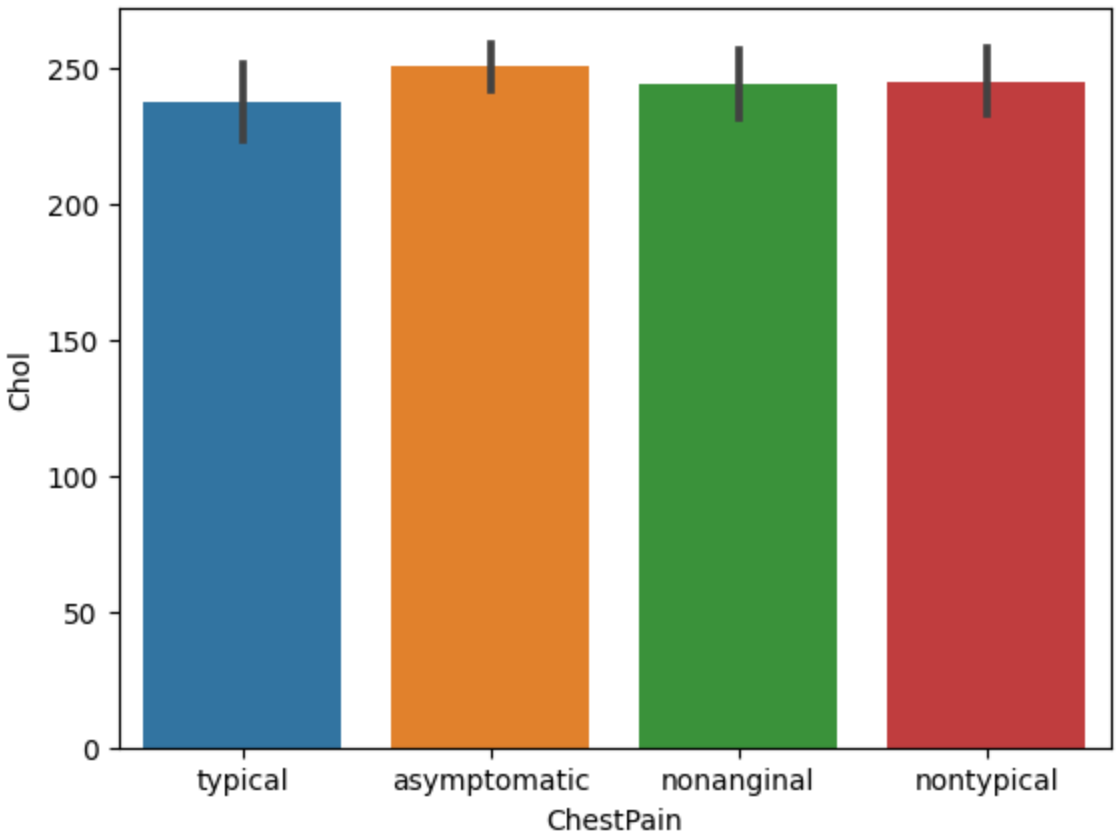
In [23]:
```
sns.histplot(df['Chol'],bins=10)
```

Out[23]: <AxesSubplot: xlabel='Chol', ylabel='Count'>



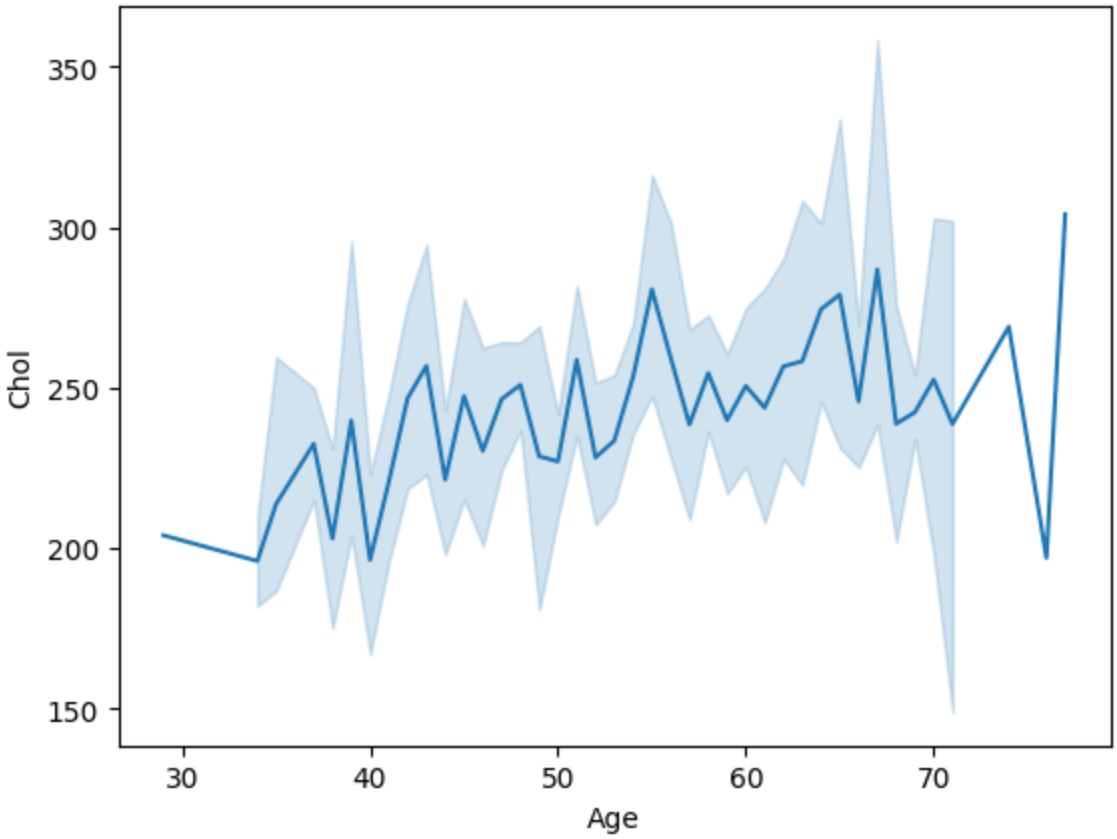
In [16]:
```
sns.barplot(data=df , y='Chol', x='ChestPain')
```

Out[16]: <AxesSubplot: xlabel='ChestPain', ylabel='Chol'>



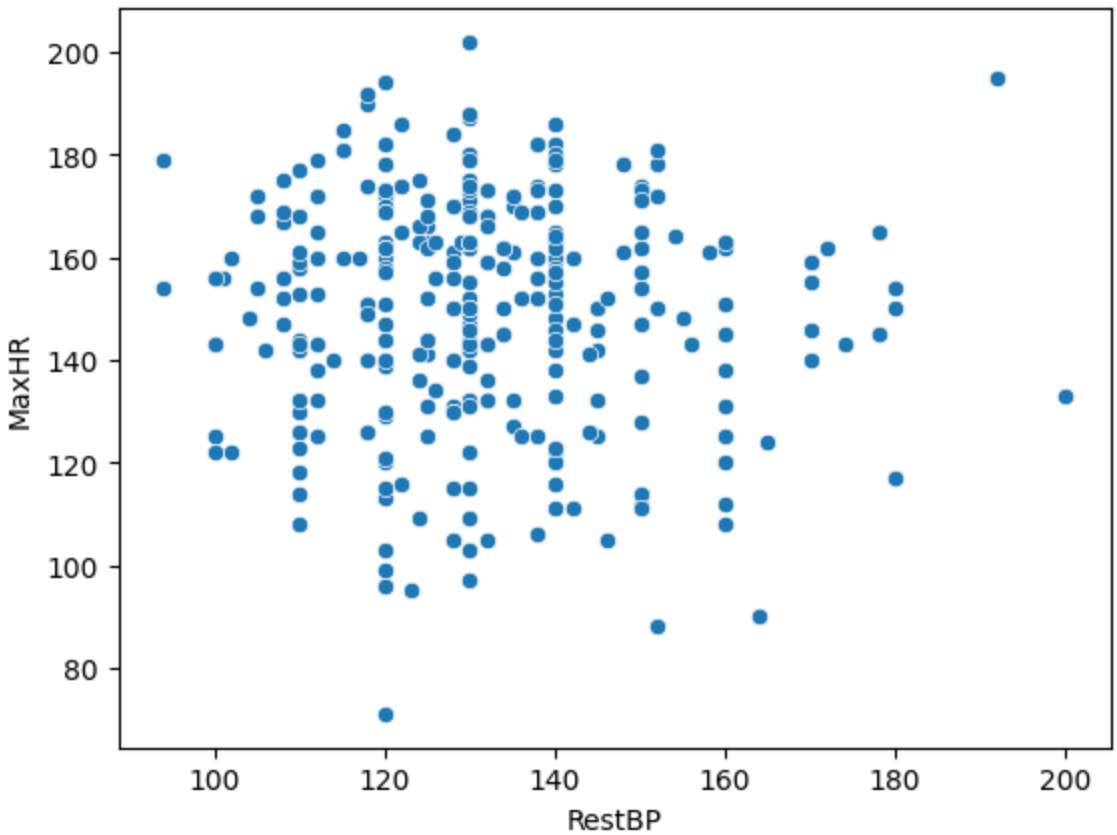
In [25]:
```
sns.lineplot(x='Age',y='Chol',data=df)
```

Out[25]: <AxesSubplot: xlabel='Age', ylabel='Chol'>



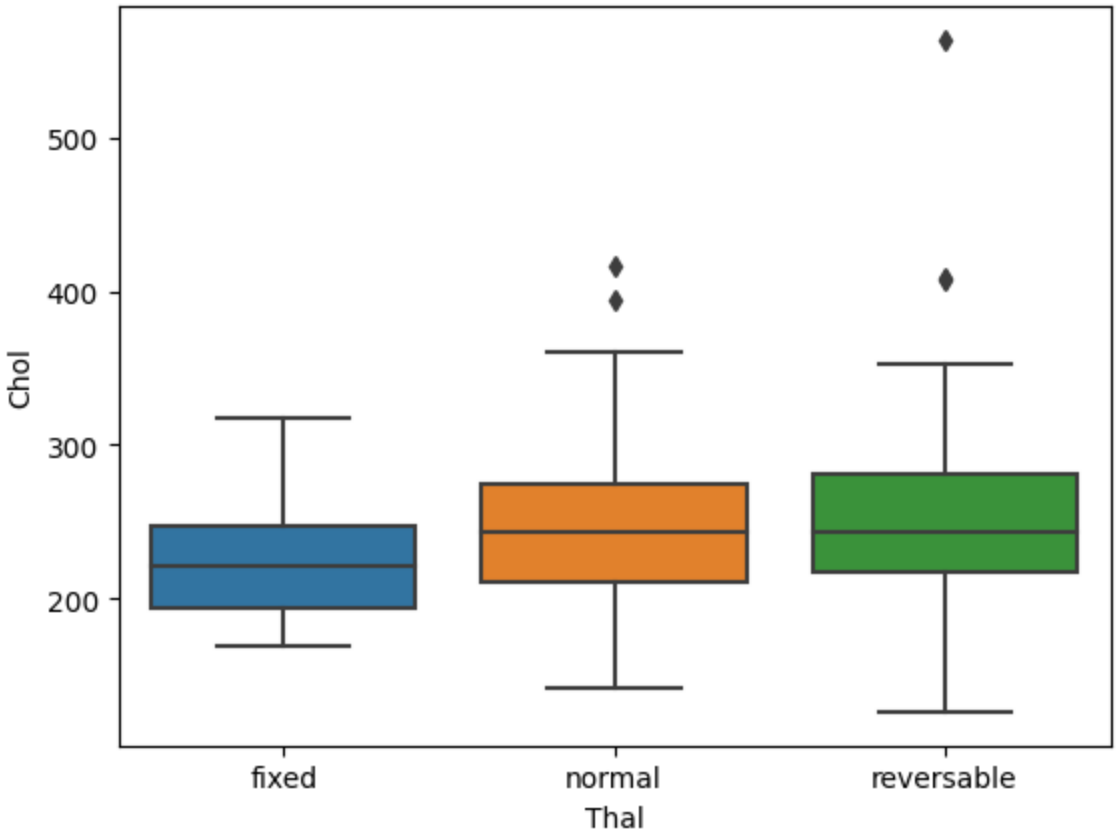
In [29]:
```
sns.scatterplot(x='RestBP',y='MaxHR',data=df)
```

Out[29]: <AxesSubplot: xlabel='RestBP', ylabel='MaxHR'>



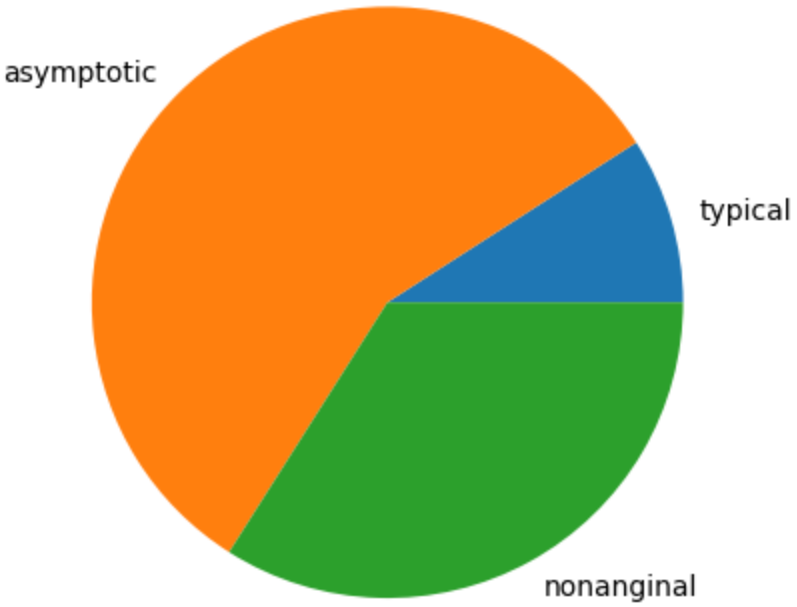
In [30]:
```
sns.boxplot(y='Chol',x='Thal',data=df)
```

Out[30]:
```
<AxesSubplot: xlabel='Thal', ylabel='Chol'>
```



In [38]:
```
data = [df.ChestPain[df.ChestPain == 'typical'].count(),df.ChestPain[df.ChestPa
labels = ['typical','asymptotic','nonanginal']
plt.pie(data , labels=labels)
```

Out[38]:
```
([<matplotlib.patches.Wedge at 0x7f5e26efd5a0>,
  <matplotlib.patches.Wedge at 0x7f5e26efda20>,
  <matplotlib.patches.Wedge at 0x7f5e26efdea0>],
 [Text(1.0554422683381766, 0.30990582150899426, 'typical'),
  Text(-0.7802282776632461, 0.7753991454306902, 'asymptotic'),
  Text(0.5301682679769142, -0.9638057935239647, 'nonanginal')])
```



In [ ]: