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Problem Statement : Visualize data with matplotlib and seaborn libraries by plotting graphs

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

```
In [2]: raw_data = pd.read_csv("Heart.csv")
```

```
In [3]: raw_data.head()
```

1	2	67	1	asymptomatic	160	286	0	2	108	1	1.5	2	3.0	normal	Yes
2	3	67	1	asymptomatic	120	229	0	2	129	1	2.6	2	2.0	reversible	Yes
3	4	37	1	nonanginal	130	250	0	0	187	0	3.5	3	0.0	normal	No
4	5	41	0	nontypical	130	204	0	2	172	0	1.4	1	0.0	normal	No

```
In [4]: raw_data.describe()
```

```
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```

	count	303.000000	303.000000	303.000000	303.000000	303.000000	303.000000	303.000000	303.000000	303.000000	303.000000	299	
	mean	152.000000	54.438944	0.679868	131.689769	246.693069	0.148515	0.990099	149.607261	0.326733	1.039604	1.600660	0
	std	87.612784	9.038662	0.467299	17.599748	51.776918	0.356198	0.994971	22.875003	0.469794	1.161075	0.616226	0
	min	1.000000	29.000000	0.000000	94.000000	126.000000	0.000000	0.000000	71.000000	0.000000	0.000000	1.000000	0
	25%	76.500000	48.000000	0.000000	120.000000	211.000000	0.000000	0.000000	133.500000	0.000000	0.000000	1.000000	0
	50%	152.000000	56.000000	1.000000	130.000000	241.000000	0.000000	1.000000	153.000000	0.000000	0.800000	2.000000	0
	75%	227.500000	61.000000	1.000000	140.000000	275.000000	0.000000	2.000000	166.000000	1.000000	1.600000	2.000000	1
	max	303.000000	77.000000	1.000000	200.000000	564.000000	1.000000	2.000000	202.000000	1.000000	6.200000	3.000000	3

```
In [5]: df = raw_data.iloc[:,1:]
```

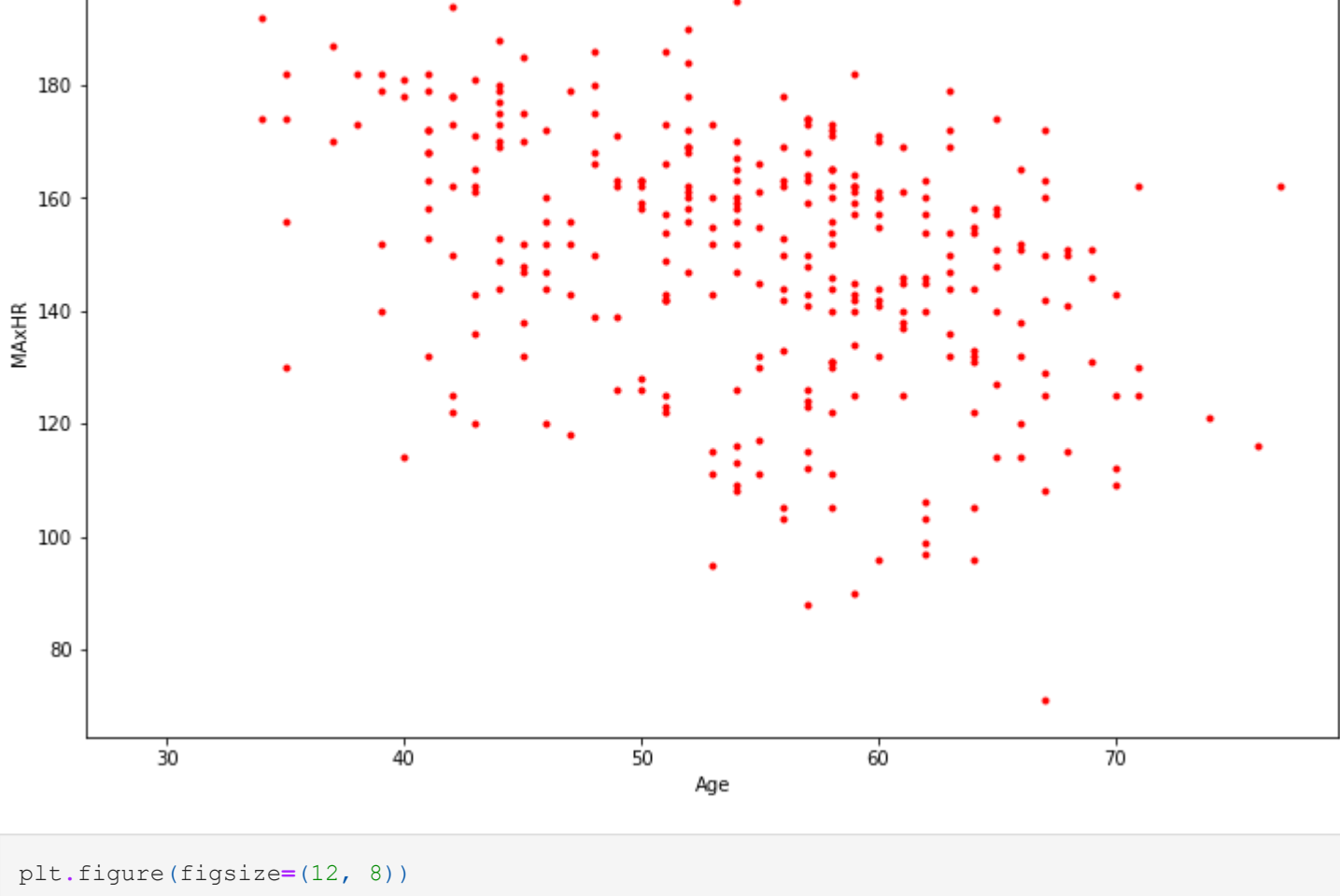
```
In [5]: df = raw_data.iloc[:,1:]
df
```

0	63	1	typical	145	233	1	2	150	0	2.3	3	0.0	fixed	No
1	67	1	asymptomatic	160	286	0	2	108	1	1.5	2	3.0	normal	Yes
2	67	1	asymptomatic	120	229	0	2	129	1	2.6	2	2.0	reversible	Yes
3	37	1	nonanginal	130	250	0	0	187	0	3.5	3	0.0	normal	No
4	41	0	nontypical	130	204	0	2	172	0	1.4	1	0.0	normal	No
...	...	...	...	...	...	...	...	...	...	...	...	...	...	...
298	45	1	typical	110	264	0	0	132	0	1.2	2	0.0	reversible	Yes
299	68	1	asymptomatic	144	193	1	0	141	0	3.4	2	2.0	reversible	Yes
300	57	1	asymptomatic	130	131	0	0	115	1	1.2	2	1.0	reversible	Yes
301	57	0	nontypical	130	236	0	2	174	0	0.0	2	1.0	normal	Yes
302	38	1	nonanginal	138	175	0	0	173	0	0.0	1	NaN	normal	No

303 rows x 14 columns

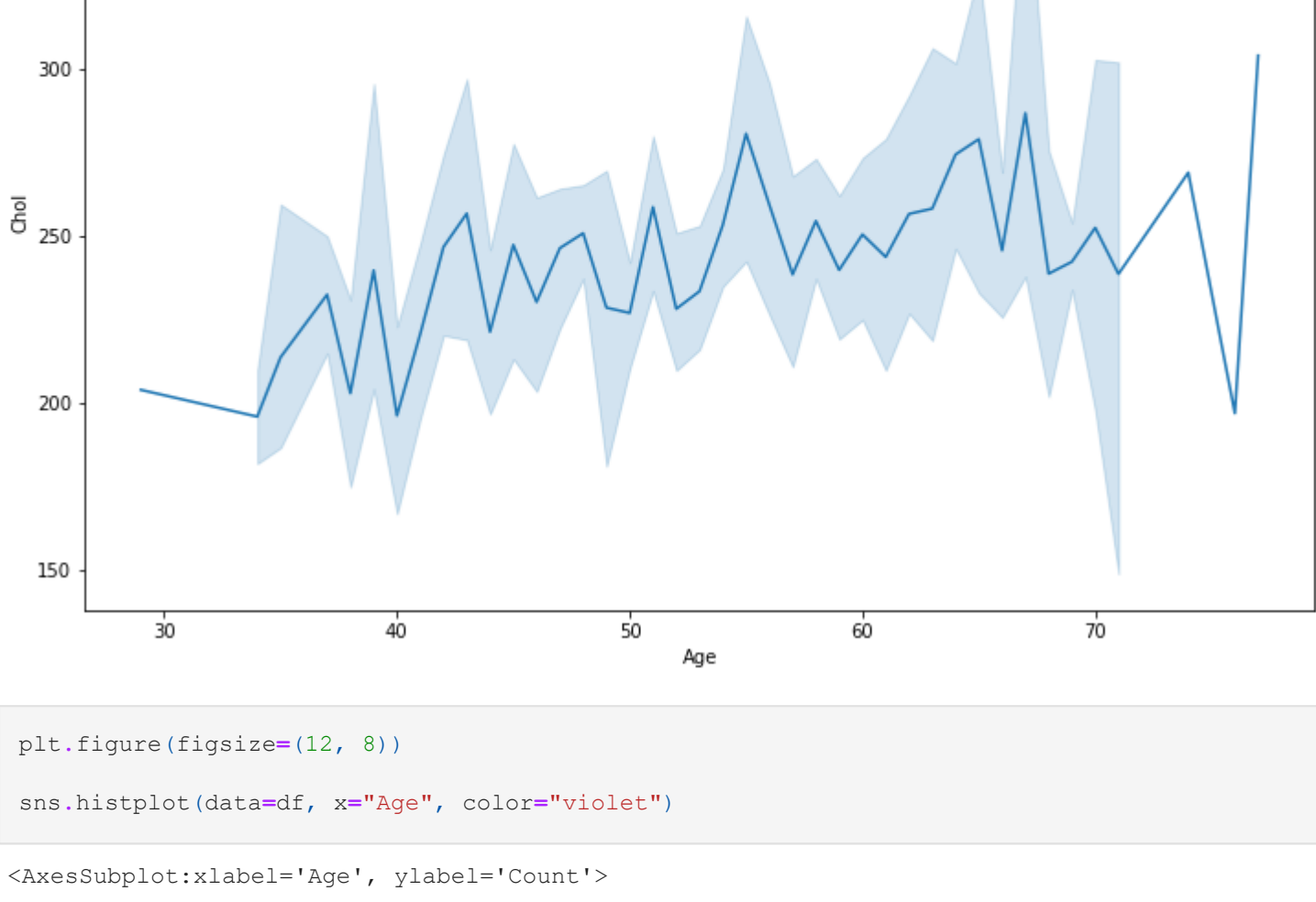
```
In [6]: plt.figure(figsize=(12, 8))
plt.scatter("Age", "MaxHR", data=df, color="red", marker=".")
plt.xlabel("Age")
plt.ylabel("MaxHR")
```

```
Out[6]: Text(0, 0.5, 'MaxHR')
```



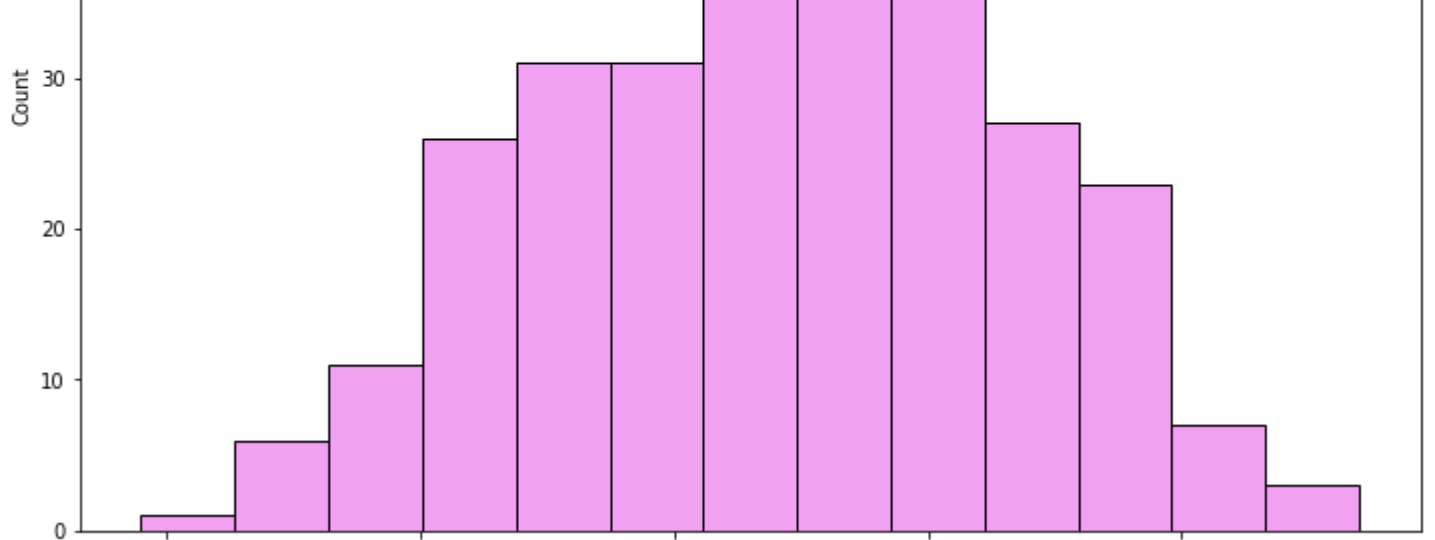
```
In [7]: plt.figure(figsize=(12, 8))
sns.lineplot(data=df, x="Age", y="Chol")
```

```
Out[7]: <AxesSubplot:xlabel='Age', ylabel='Chol'>
```



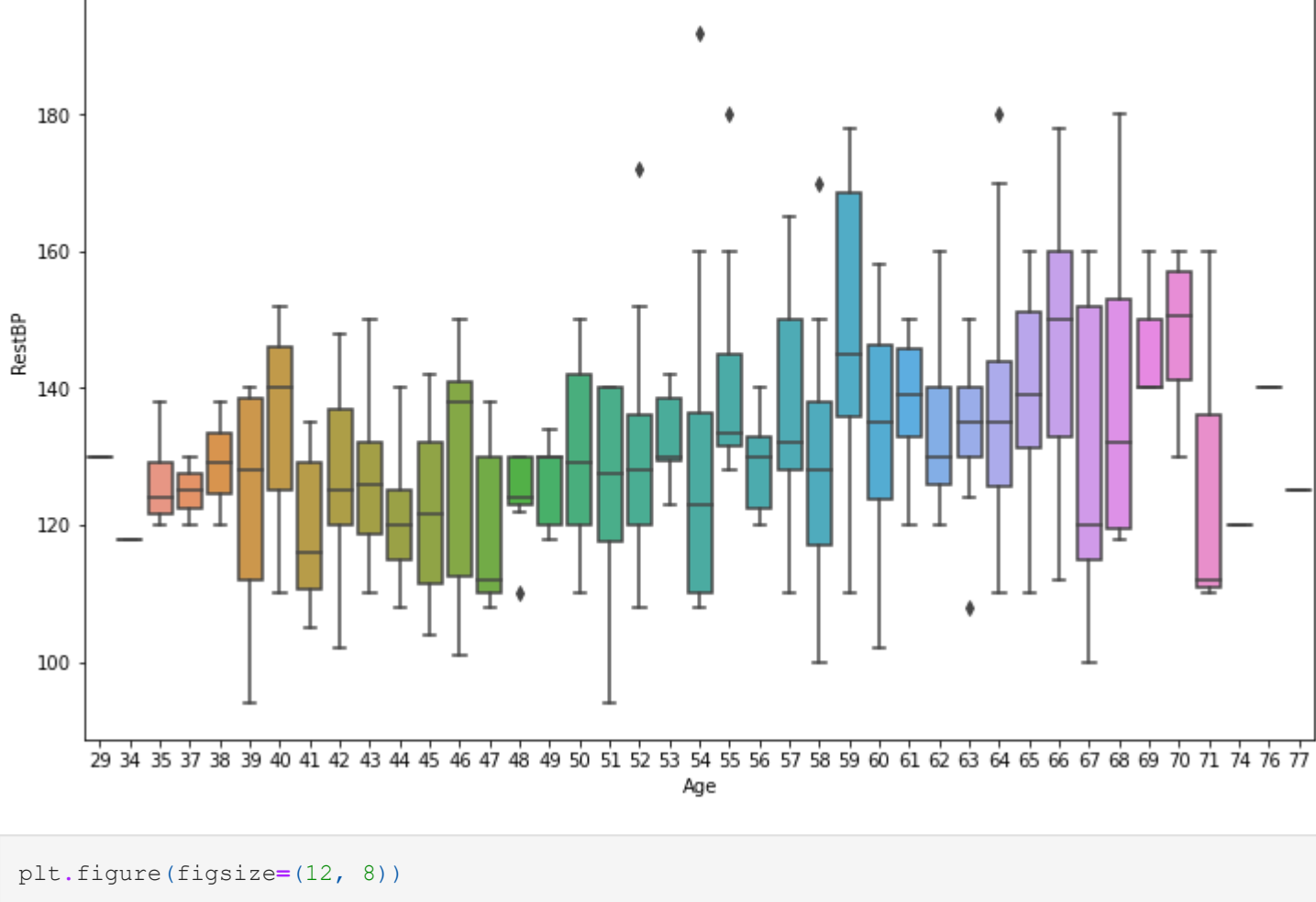
```
In [8]: plt.figure(figsize=(12, 8))
sns.histplot(data=df, x="Age", color="violet")
```

```
Out[8]: <AxesSubplot:xlabel='Age', ylabel='Count'>
```



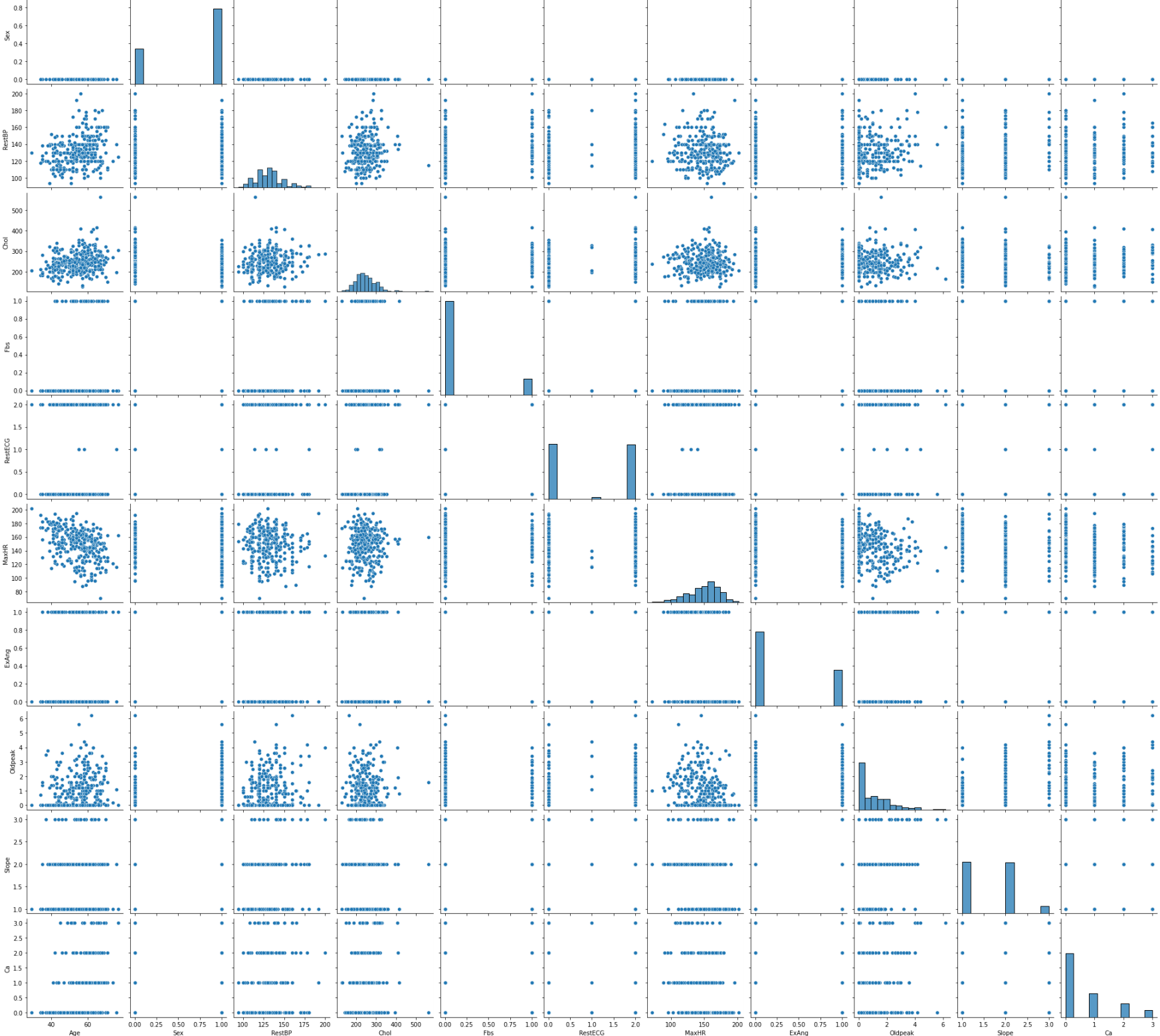
```
In [9]: plt.figure(figsize=(12, 8))
sns.boxplot(x="Age", y="RestBP", data=df)
```

```
Out[9]: <AxesSubplot:xlabel='Age', ylabel='RestBP'>
```

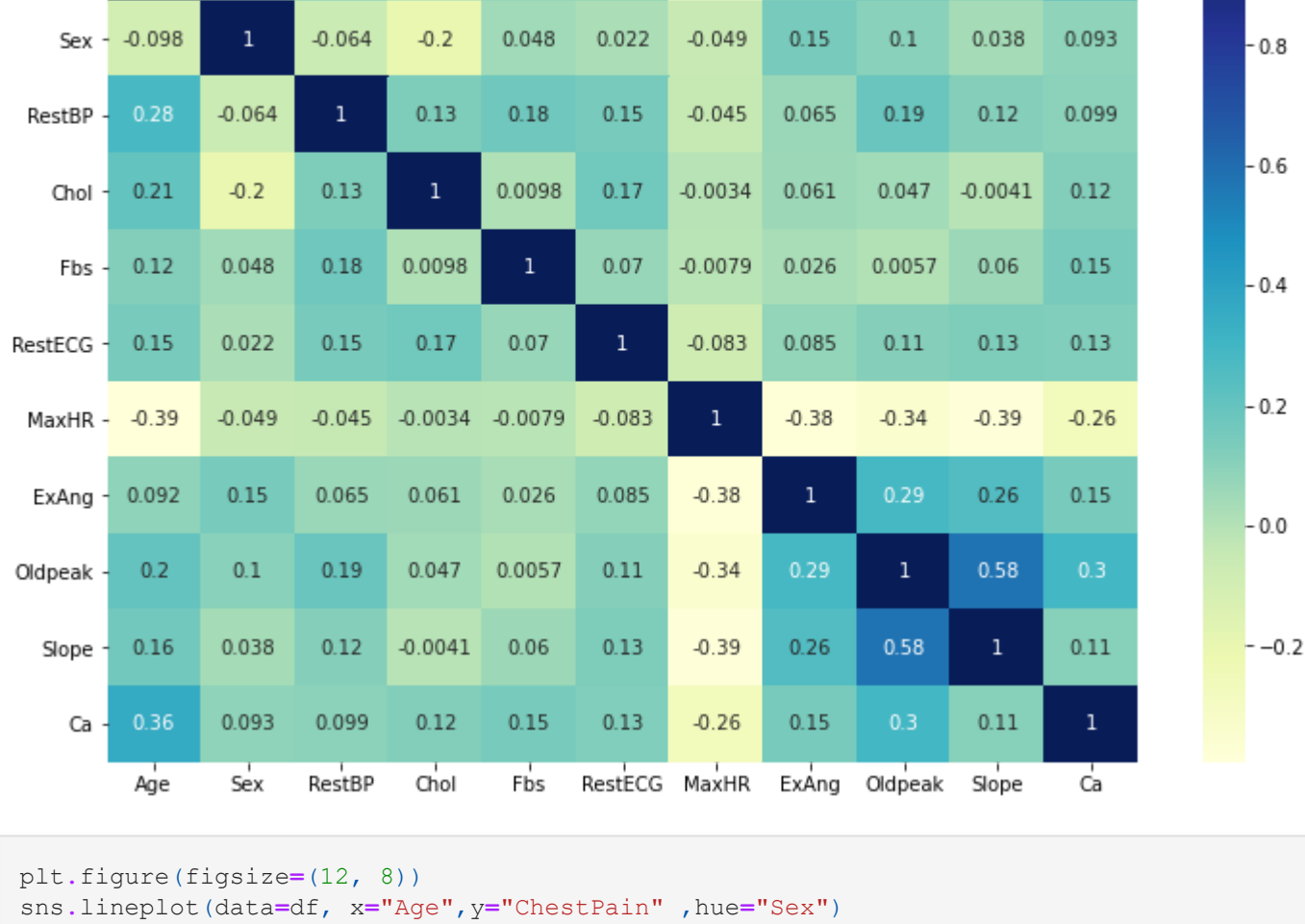


```
In [10]: plt.figure(figsize=(12, 8))
sns.pairplot(df, diag_kind="hist")
```

```
Out[10]: <seaborn.axisgrid.PairGrid at 0x226b68e2820>
```



```
In [11]: plt.figure(figsize=(12,8))
ax = sns.heatmap(df.corr(), cmap="YlGnBu", annot=True)
```



```
In [12]: plt.figure(figsize=(12, 8))
sns.lineplot(data=df, x="Age", y="ChestPain", hue="Sex")
```

```
Out[12]: <AxesSubplot:xlabel='Age', ylabel='ChestPain'>
```

