

1st Question

```
In [3]: import pandas as pd
```

```
In [4]: salary_Data = pd.read_csv('/content/Salary_Data.csv')
salary_Data = salary_Data.fillna(0)
salary_Data
```

```
Out[4]:
```

	YearsExperience	Salary
0	1.1	39343.0
1	1.3	46205.0
2	1.5	37731.0
3	2.0	43525.0
4	2.2	39891.0
5	2.9	56642.0
6	3.0	60150.0
7	3.2	54445.0
8	3.2	64445.0
9	3.7	57189.0
10	3.9	63218.0
11	4.0	55794.0
12	4.0	56957.0
13	4.1	57081.0
14	4.5	61111.0
15	4.9	67938.0
16	5.1	66029.0
17	5.3	83088.0
18	5.9	81363.0
19	6.0	93940.0
20	6.8	91738.0
21	7.1	98273.0
22	7.9	101302.0
23	8.2	113812.0
24	8.7	109431.0
25	9.0	105582.0
26	9.5	116969.0
27	9.6	112635.0
28	10.3	122391.0
29	10.5	121872.0

```
In [5]: sal = salary_Data['Salary']
```

```
exp = salary_Data.drop('Salary',axis=1)
```

```
In [6]: import matplotlib.pyplot as plt
```

```
In [9]: plt.figure(figsize=(10,8))
plt.scatter(exp,sal, color='red')
plt.xlabel('Years of Experince')
plt.ylabel('Salary')
plt.title('Experience vs Salary')
plt.show()
```



```
In [10]: Norm_data = (salary_Data-salary_Data.min())/(salary_Data.max()-salary_Data.min())
Norm_data
```

```
Out[10]:
```

	YearsExperience	Salary
0	0.000000	0.019041
1	0.021277	0.100094
2	0.042553	0.000000
3	0.095745	0.068438
4	0.117021	0.025514
5	0.191489	0.223376
6	0.202128	0.264812
7	0.223404	0.197425

8	0.223404	0.315545
9	0.276596	0.229837
10	0.297872	0.301051
11	0.308511	0.213359
12	0.308511	0.227097
13	0.319149	0.228561
14	0.361702	0.276163
15	0.404255	0.356804
16	0.425532	0.334255
17	0.446809	0.535755
18	0.510638	0.515379
19	0.521277	0.663938
20	0.606383	0.637928
21	0.638298	0.715119
22	0.723404	0.750898
23	0.755319	0.898665
24	0.808511	0.846917
25	0.840426	0.801453
26	0.893617	0.935956
27	0.904255	0.884763
28	0.978723	1.000000
29	1.000000	0.993870

2nd Question

```
In [11]: diabetes_Data = pd.read_csv('/content/diabetes_data_upload.csv')
diabetes_Data = diabetes_Data.fillna(0)
diabetes_Data.head()
```

```
Out[11]:
```

	Age	Gender	Polyuria	Polydipsia	sudden weight loss	weakness	Polyphagia	Genital thrush	visual blurring	Itching	Irritability	de he
0	40	Male	No	Yes	No	Yes	No	No	No	Yes	No	
1	58	Male	No	No	No	Yes	No	No	Yes	No	No	
2	41	Male	Yes	No	No	Yes	Yes	No	No	Yes	No	
3	45	Male	No	No	Yes	Yes	Yes	Yes	No	Yes	No	
4	60	Male	Yes	Yes	Yes	Yes	Yes	No	Yes	Yes	Yes	

```
In [12]: print(diabetes_Data.dtypes)

Age                int64
Gender             object
Polyuria           object
Polydipsia         object
```

```
sudden weight loss    object
weakness              object
Polyphagia            object
Genital thrush        object
visual blurring       object
Itching              object
Irritability          object
delayed healing       object
partial paresis       object
muscle stiffness      object
Alopecia              object
Obesity               object
class                 object
dtype: object
```

```
In [13]: cls = diabetes_Data['class'] #Target
fea = diabetes_Data.drop('class',axis=1) #Features
age = diabetes_Data['Age']
gender = diabetes_Data['Gender']
polyuria = diabetes_Data['Polyuria']
polydipsia = diabetes_Data['Polydipsia']
sudden_weight_loss = diabetes_Data['sudden weight loss']
weakness = diabetes_Data['weakness']
polyphagia = diabetes_Data['Polyphagia']
genital_thrush = diabetes_Data['Genital thrush']
visual_blurring = diabetes_Data['visual blurring']
itching = diabetes_Data['Itching']
irritability = diabetes_Data['Irritability']
delayed_healing = diabetes_Data['delayed healing']
partial_paresis = diabetes_Data['partial paresis']
muscle_stiffness = diabetes_Data['muscle stiffness']
alopecia = diabetes_Data['Alopecia']
obesity = diabetes_Data['Obesity']
```

```
In [14]: diabetes_Data = diabetes_Data.replace({'Yes':1,'No':0,'Positive':1,'Negative':0,'Male':1,
diabetes_Data.head()
```

```
Out[14]:
```

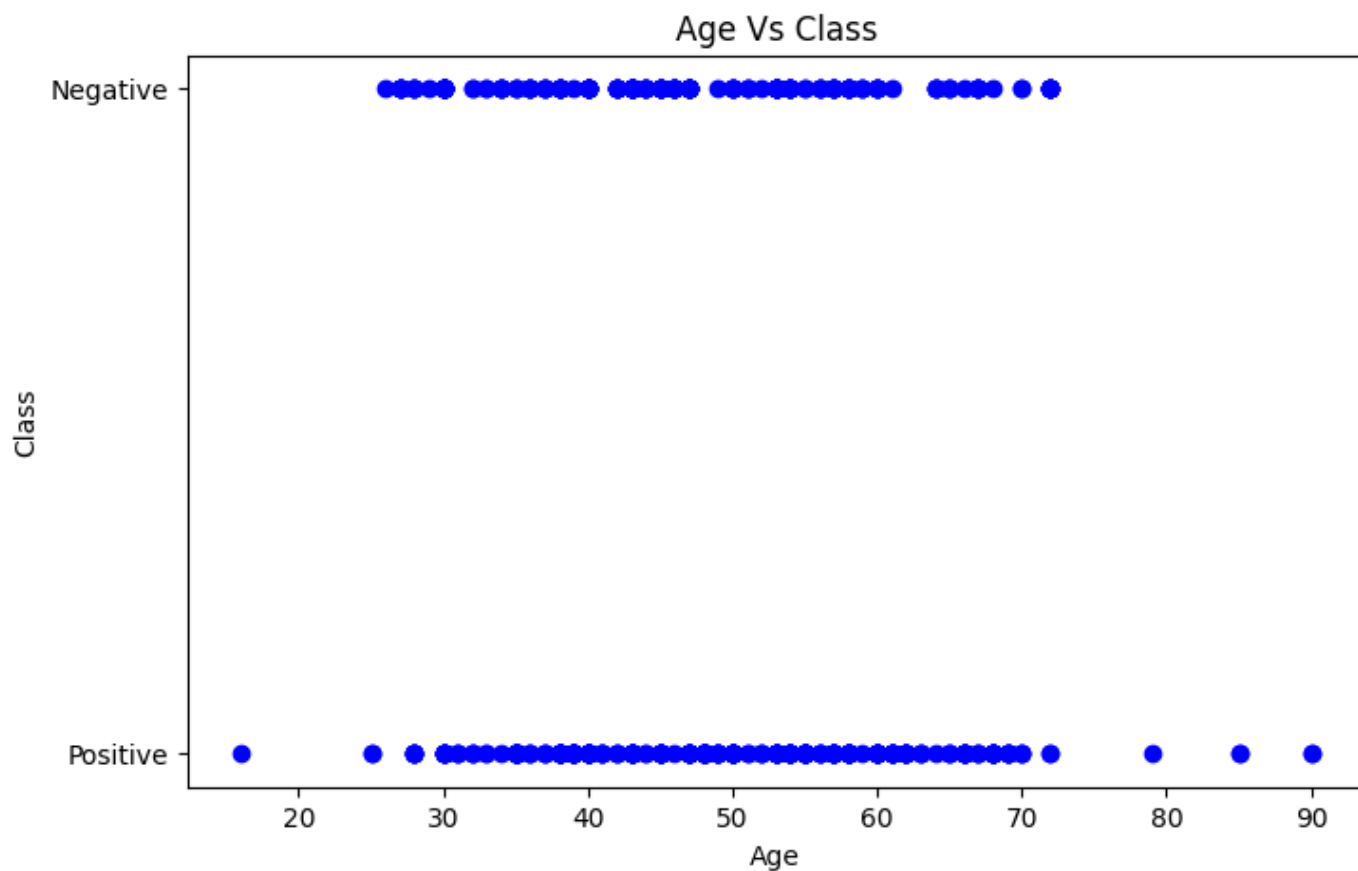
	Age	Gender	Polyuria	Polydipsia	sudden weight loss	weakness	Polyphagia	Genital thrush	visual blurring	Itching	Irritability	de he
0	40	1	0	1	0	1	0	0	0	1	0	
1	58	1	0	0	0	1	0	0	1	0	0	
2	41	1	1	0	0	1	1	0	0	1	0	
3	45	1	0	0	1	1	1	1	0	1	0	
4	60	1	1	1	1	1	1	0	1	1	1	

```
In [15]: norm_data2=(diabetes_Data-diabetes_Data.min())/(diabetes_Data.max()-diabetes_Data.min())
norm_data2.head()
```

```
Out[15]:
```

	Age	Gender	Polyuria	Polydipsia	sudden weight loss	weakness	Polyphagia	Genital thrush	visual blurring	Itching	Irritability	
0	0.324324	1.0	0.0	1.0	0.0	1.0	0.0	0.0	0.0	1.0	0.0	
1	0.567568	1.0	0.0	0.0	0.0	1.0	0.0	0.0	1.0	0.0	0.0	
2	0.337838	1.0	1.0	0.0	0.0	1.0	1.0	0.0	0.0	1.0	0.0	
3	0.391892	1.0	0.0	0.0	1.0	1.0	1.0	1.0	0.0	1.0	0.0	
4	0.594595	1.0	1.0	1.0	1.0	1.0	1.0	0.0	1.0	1.0	1.0	

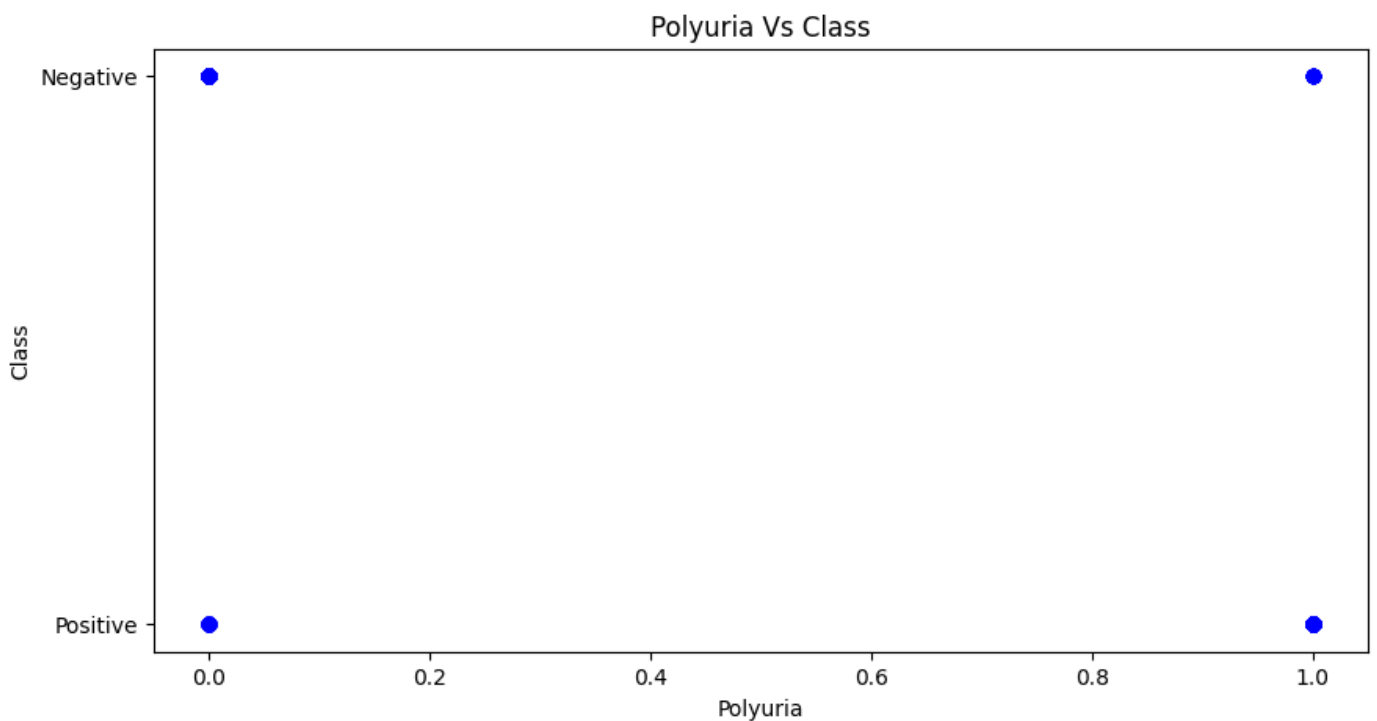
```
In [26]: plt.figure(figsize=(8,5))
plt.scatter(age,cls, color='blue')
plt.xlabel('Age')
plt.ylabel('Class')
plt.title('Age Vs Class')
plt.show()
```



```
In [22]: plt.figure(figsize=(8,5))
plt.scatter(gender,cls)
plt.title('Age Vs Class')
plt.xlabel('Gender')
plt.ylabel('Class')
plt.show()
```

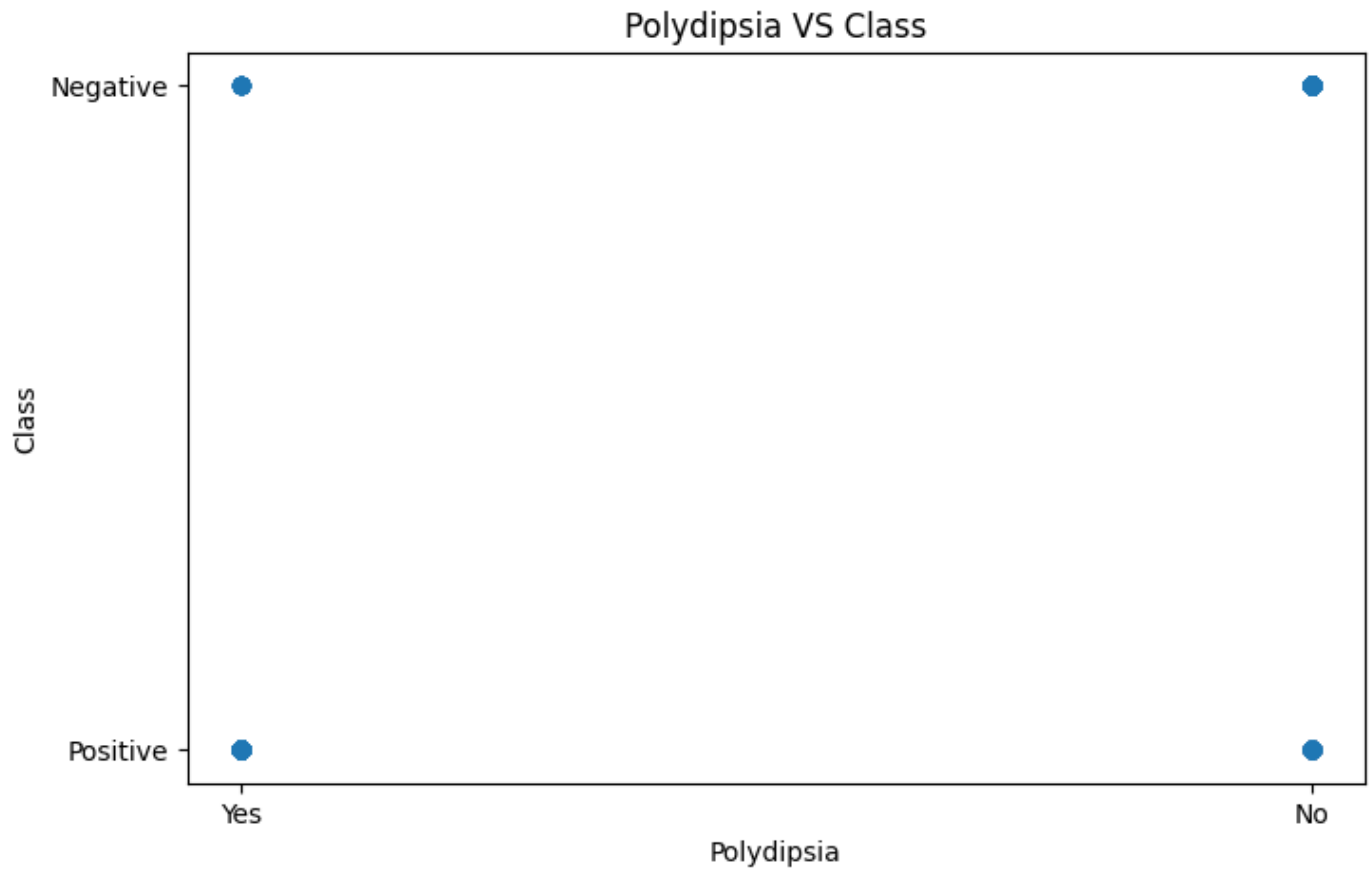


```
In [ ]: ployuria = diabetes_Data['Polyuria']  
  
plt.figure(figsize=(10,5))  
plt.title('Polyuria Vs Class')  
plt.scatter(ployuria, cls, color='blue')  
plt.xlabel('Polyuria')  
plt.ylabel('Class')  
plt.show()
```

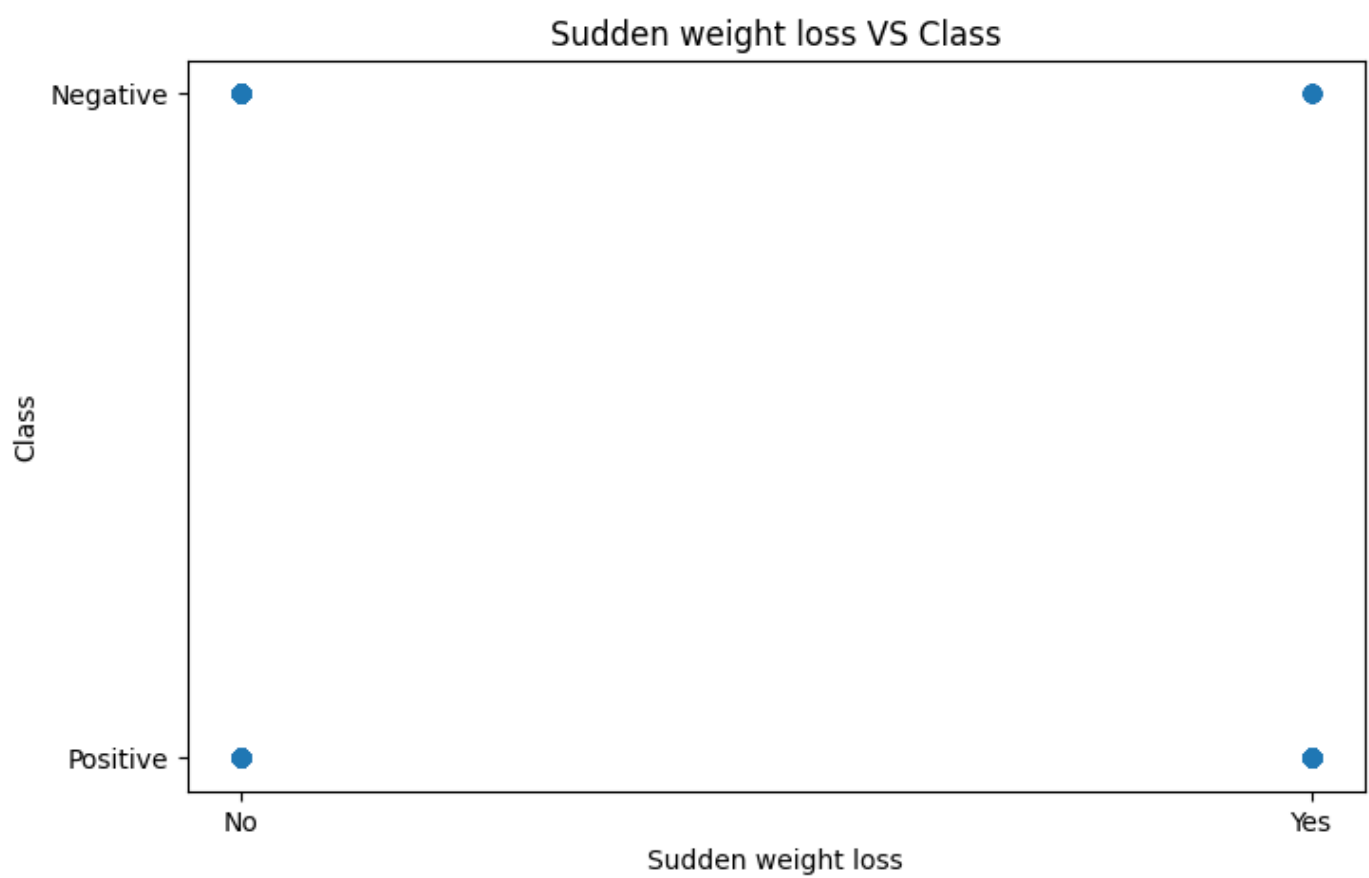


```
In [ ]: plt.figure(figsize=(8,5))  
plt.scatter(polydipsia,cls)  
plt.xlabel('Polydipsia')
```

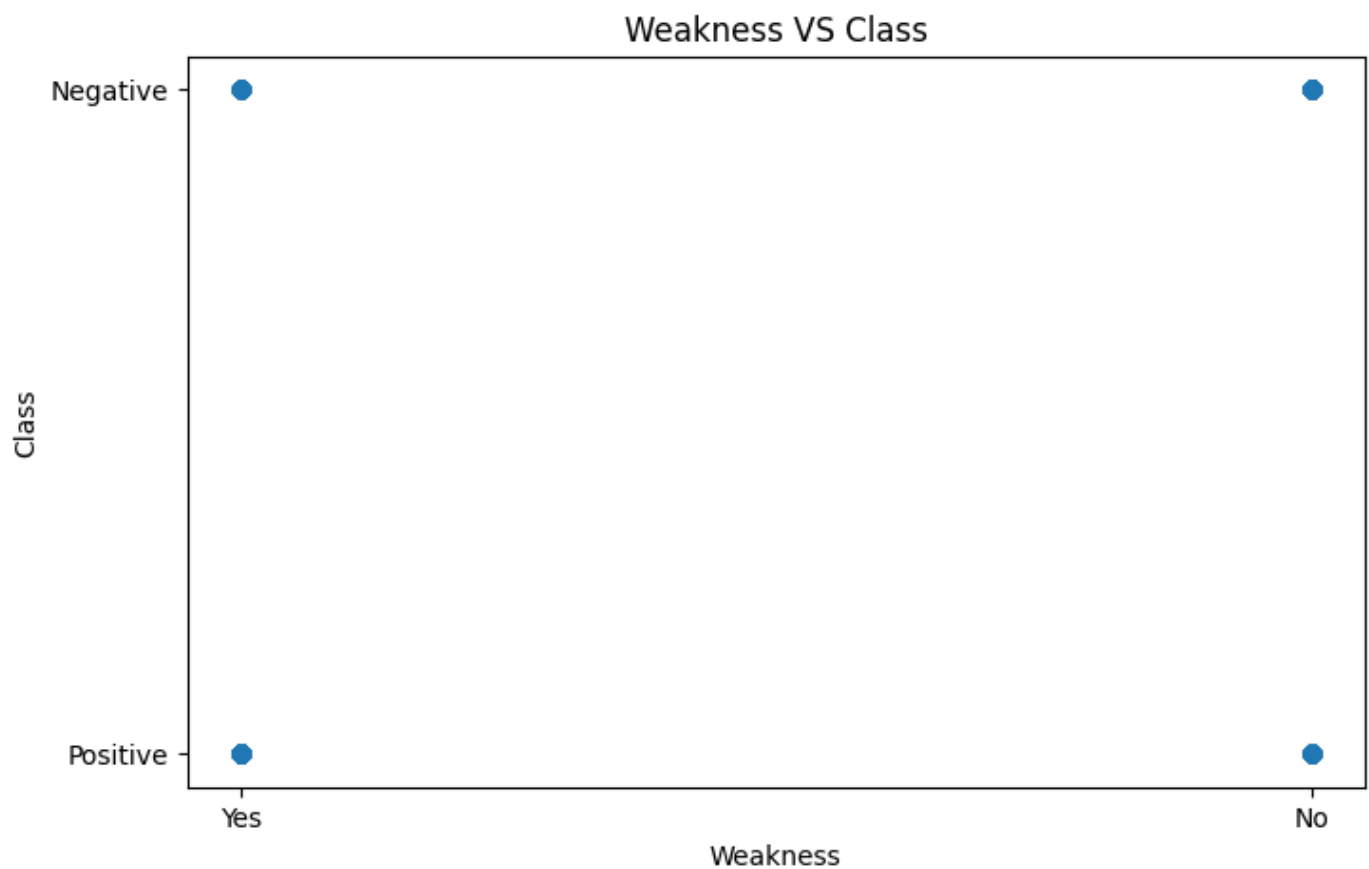
```
plt.ylabel('Class')
plt.title('Polydipsia VS Class')
plt.show()
```



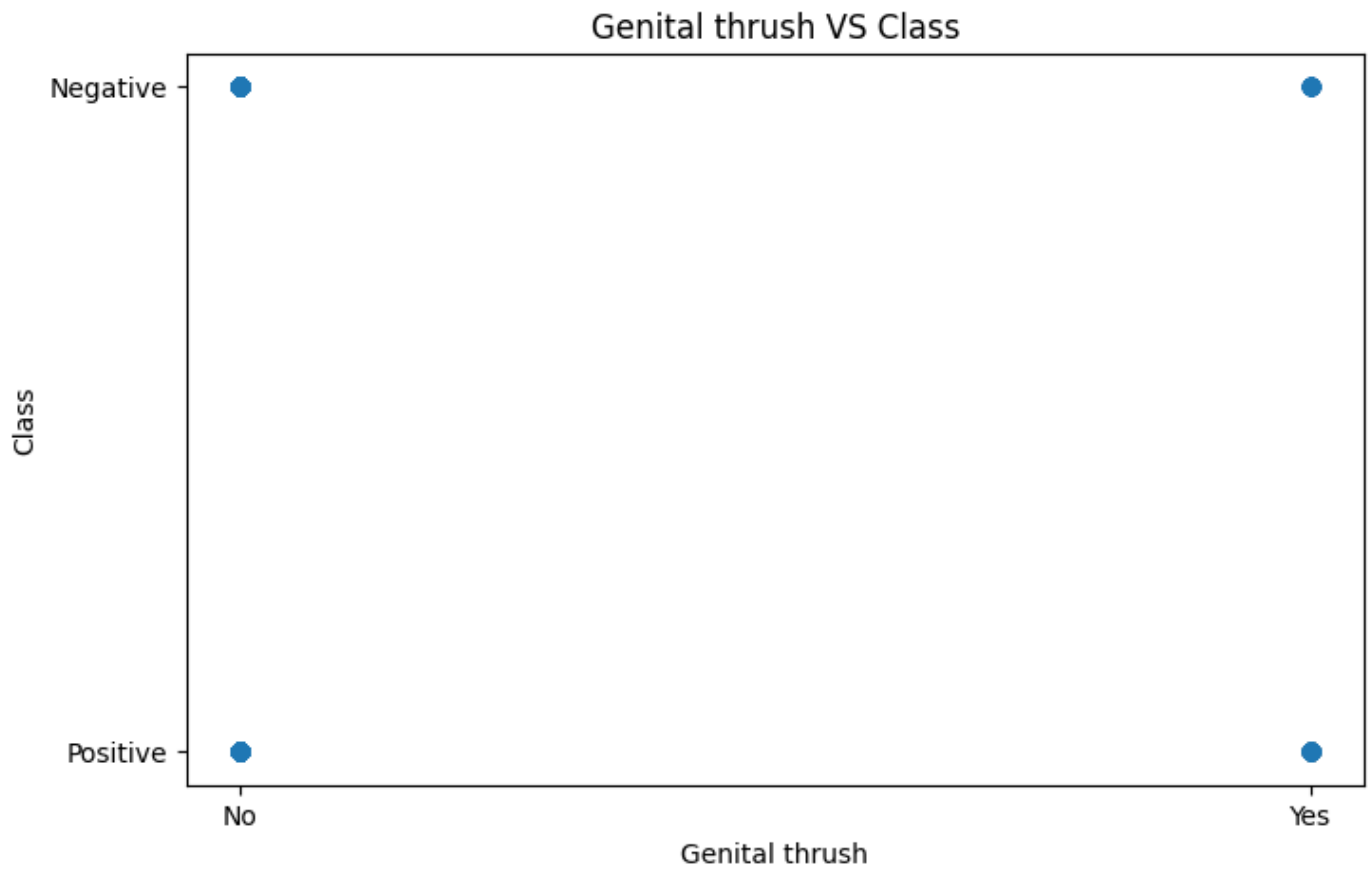
```
In [ ]: plt.figure(figsize=(8,5))
plt.scatter(sudden_weight_loss,cls)
plt.xlabel('Sudden weight loss')
plt.ylabel('Class')
plt.title('Sudden weight loss VS Class')
plt.show()
```



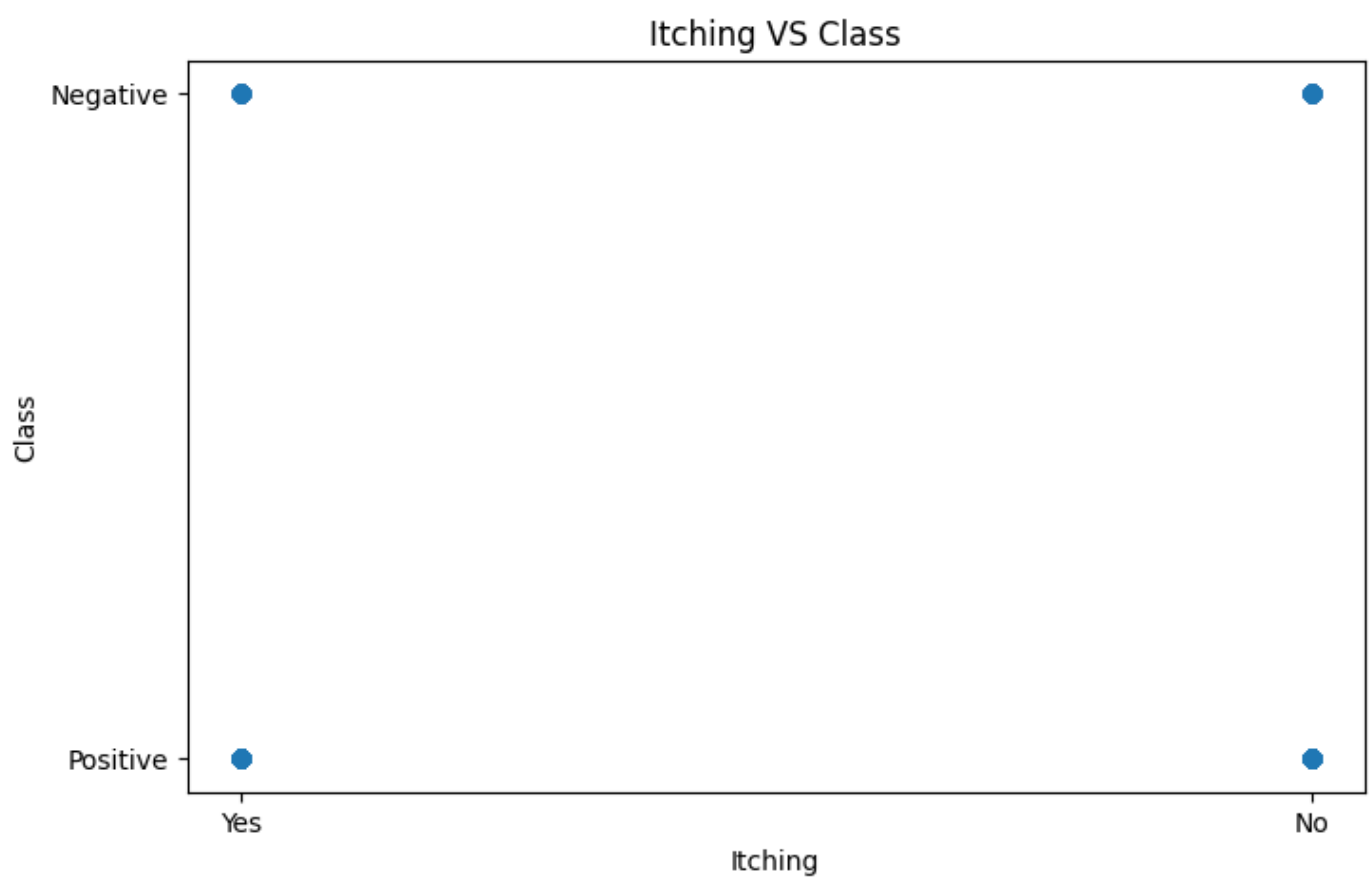
```
In [ ]: plt.figure(figsize=(8,5))
plt.scatter(weakness,cls)
plt.xlabel('Weakness')
plt.ylabel('Class')
plt.title('Weakness VS Class')
plt.show()
```



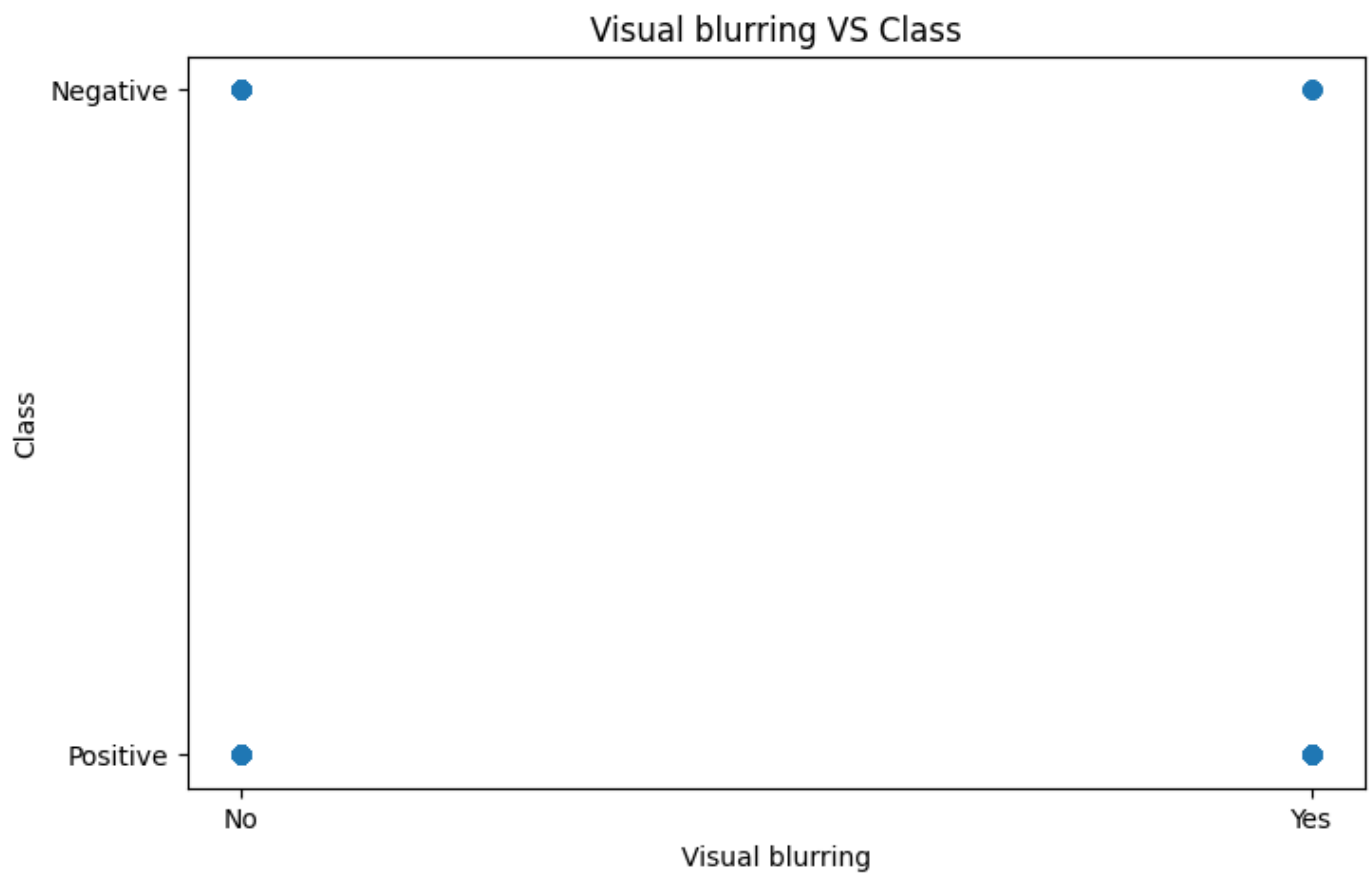

```
In [ ]: plt.figure(figsize=(8,5))
plt.scatter(genital_thrush,cls)
plt.xlabel('Genital thrush')
plt.ylabel('Class')
plt.title('Genital thrush VS Class')
plt.show()
```



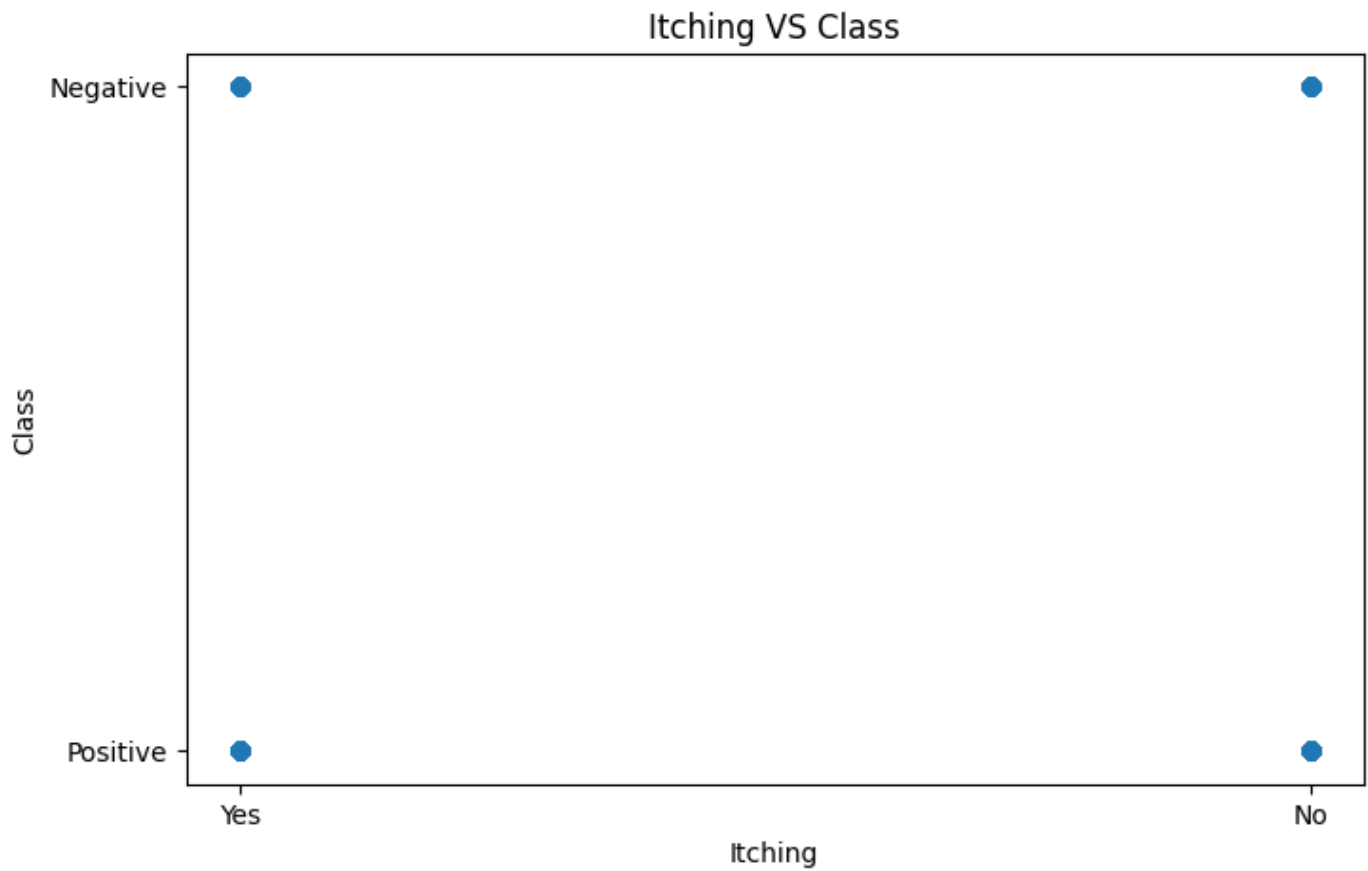
```
In [ ]: plt.figure(figsize=(8,5))
plt.scatter(itching,cls)
plt.xlabel('Itching')
plt.ylabel('Class')
plt.title('Itching VS Class')
plt.show()
```



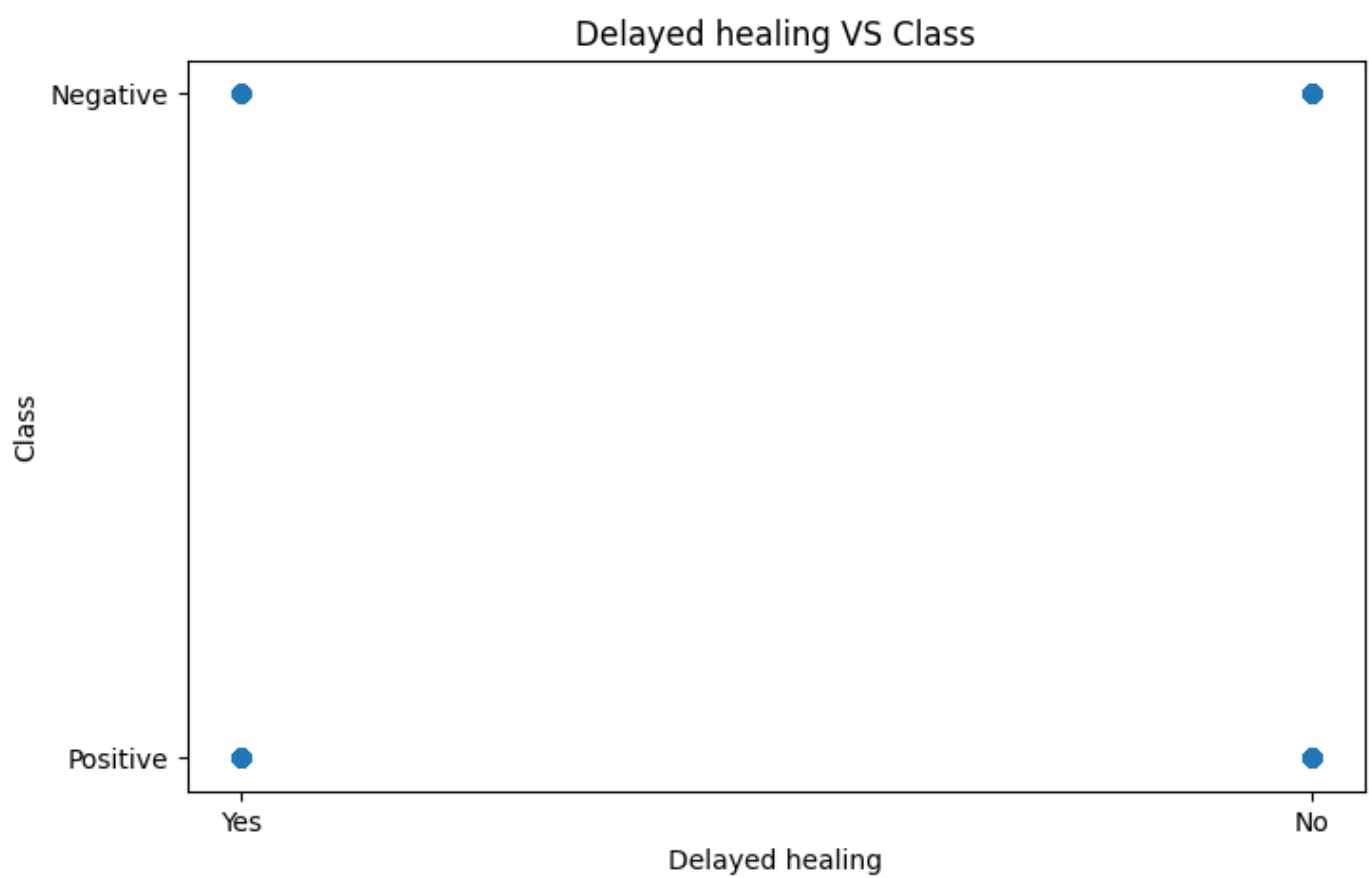
```
In [ ]: plt.figure(figsize=(8,5))
plt.scatter(visual_blurring,cls)
plt.xlabel('Visual blurring')
plt.ylabel('Class')
plt.title('Visual blurring VS Class')
plt.show()
```



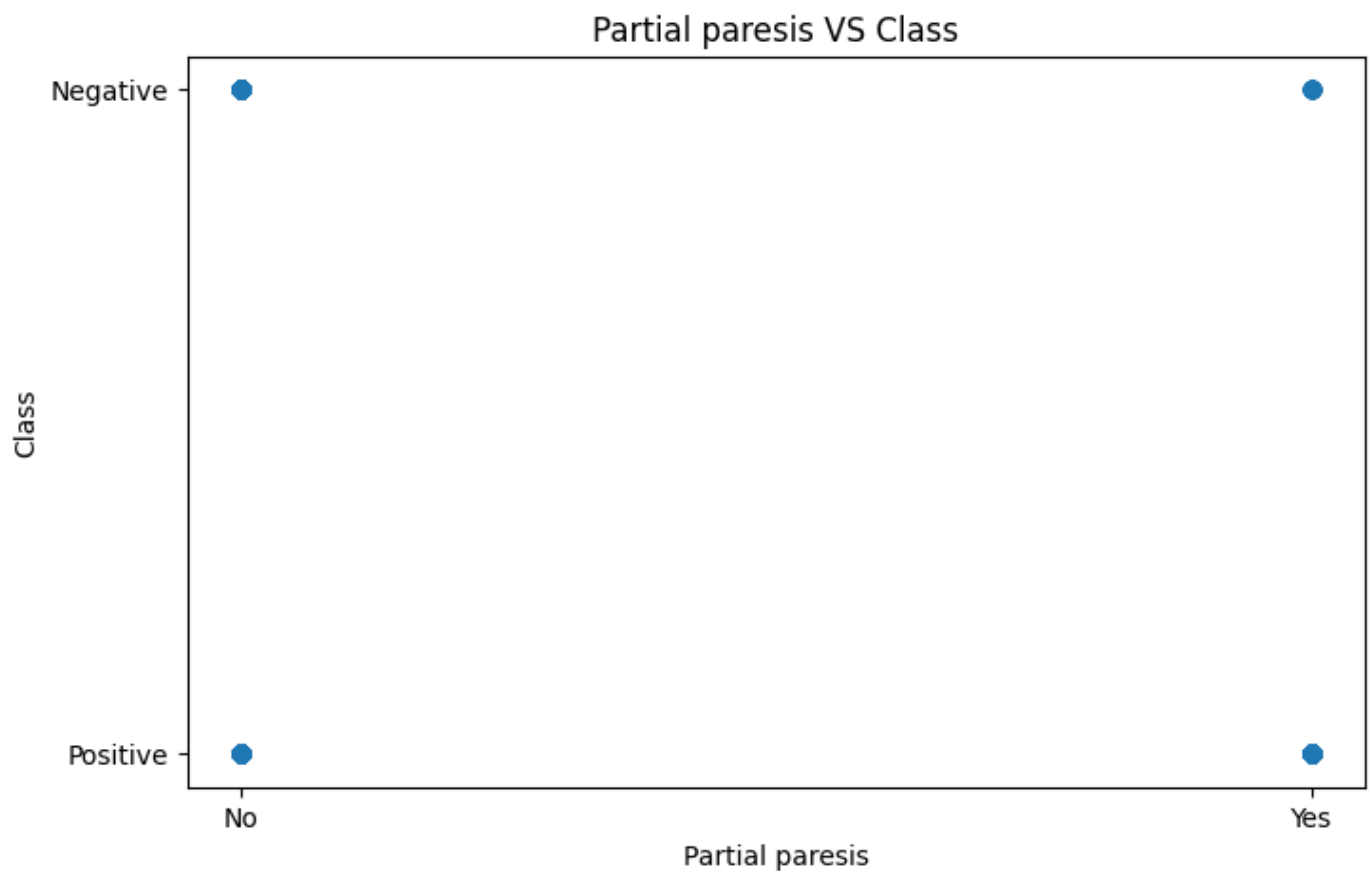
```
In [ ]: plt.figure(figsize=(8,5))
plt.scatter(itching,cls)
plt.xlabel('Itching')
plt.ylabel('Class')
plt.title('Itching VS Class')
plt.show()
```



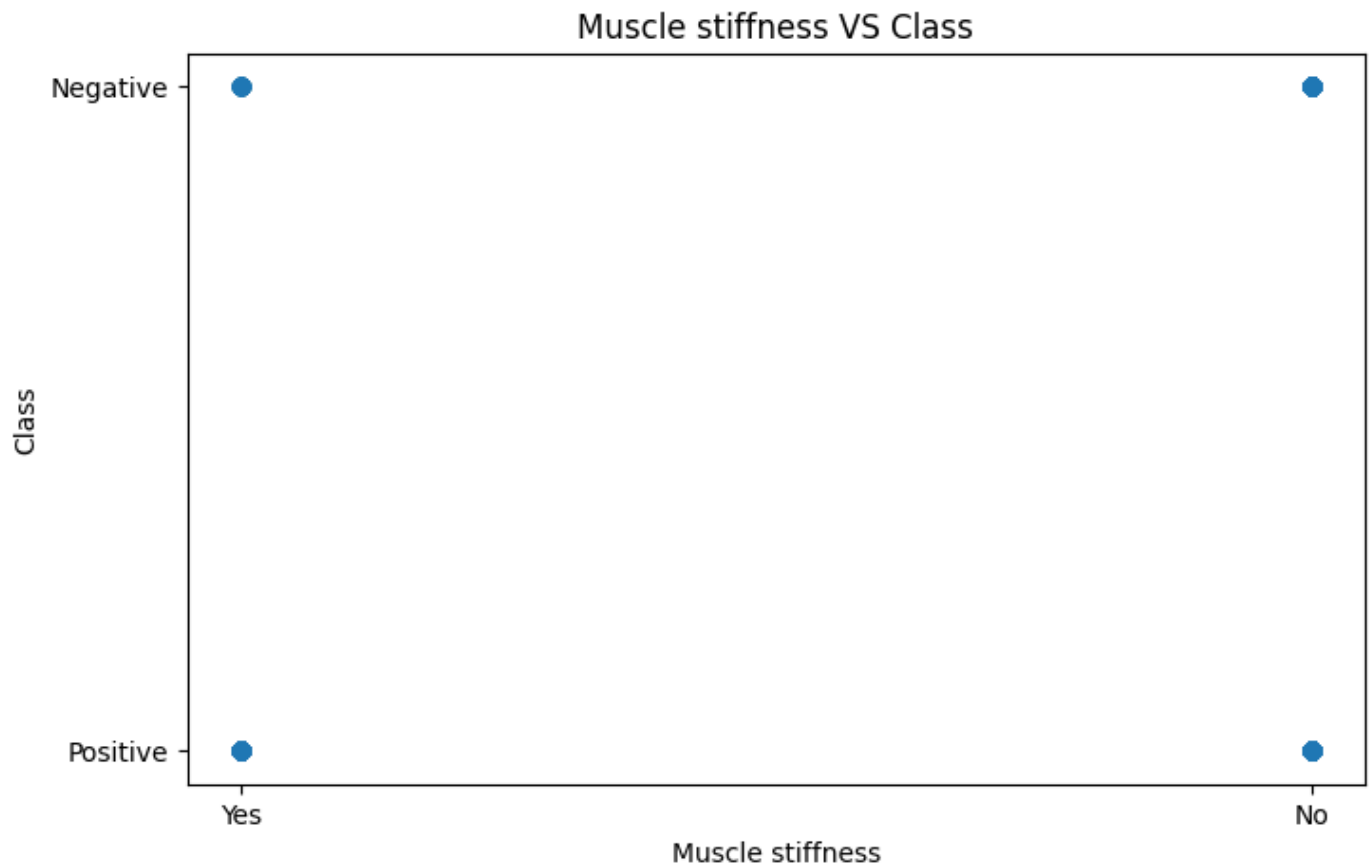
```
In [ ]: plt.figure(figsize=(8,5))
plt.scatter(delayed_healing,cls)
plt.xlabel('Delayed healing')
plt.ylabel('Class')
plt.title('Delayed healing VS Class')
plt.show()
```



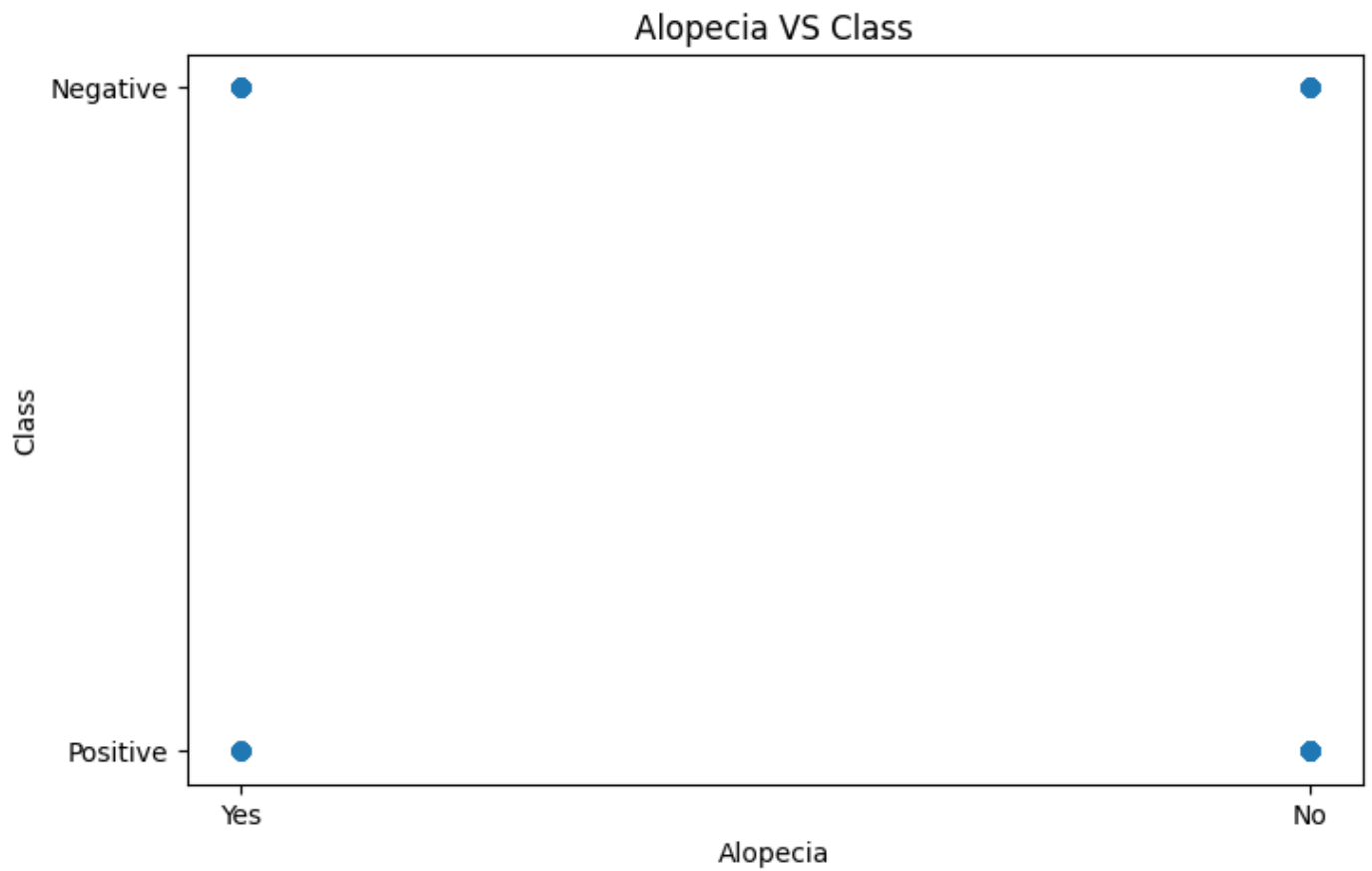
```
In [ ]: plt.figure(figsize=(8,5))
plt.scatter(partial_paresis,cls)
plt.xlabel('Partial paresis')
plt.ylabel('Class')
plt.title('Partial paresis VS Class')
plt.show()
```



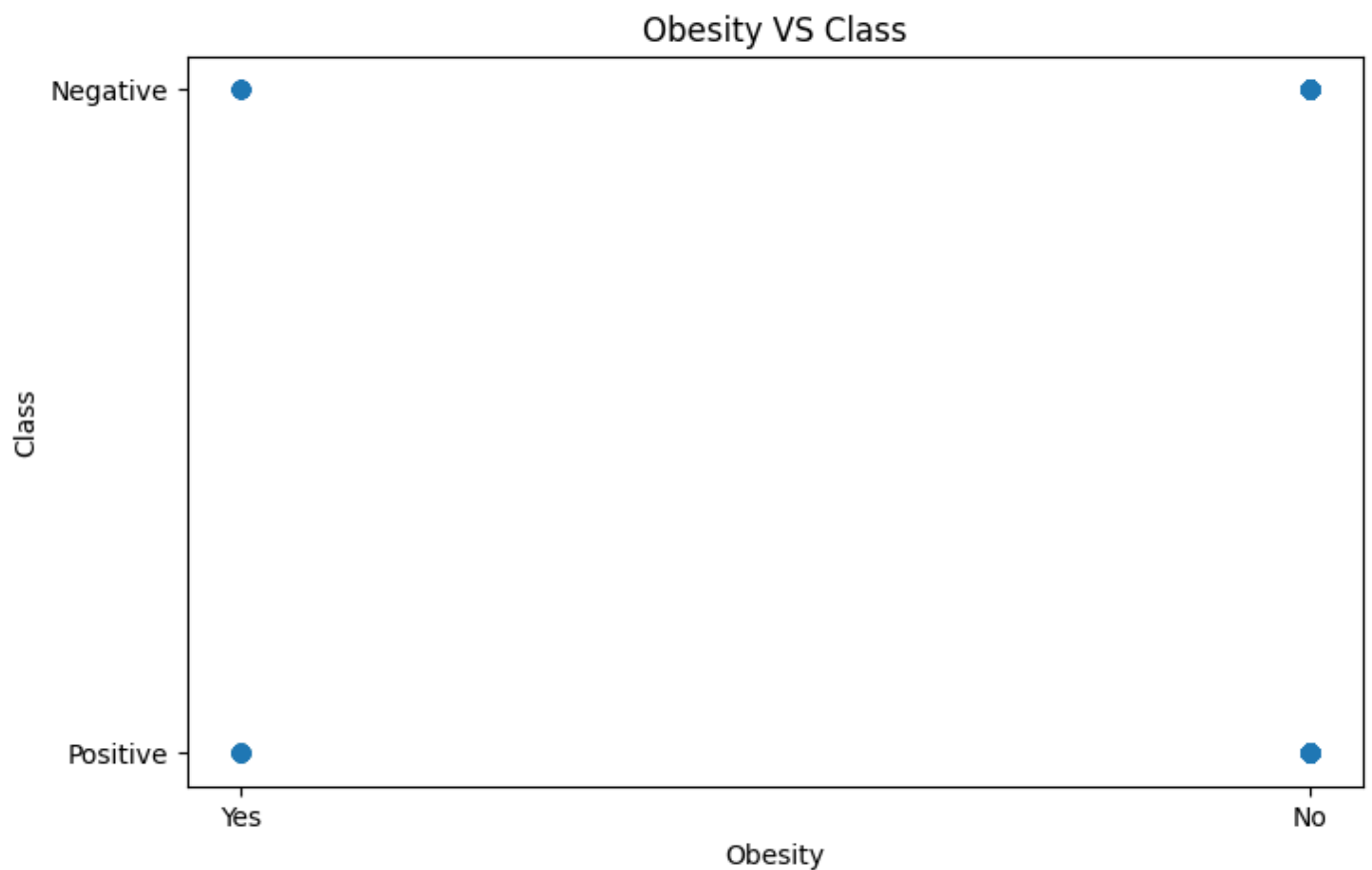
```
In [ ]: plt.figure(figsize=(8,5))
plt.scatter(muscle_stiffness,cls)
plt.xlabel('Muscle stiffness')
plt.ylabel('Class')
plt.title('Muscle stiffness VS Class')
plt.show()
```



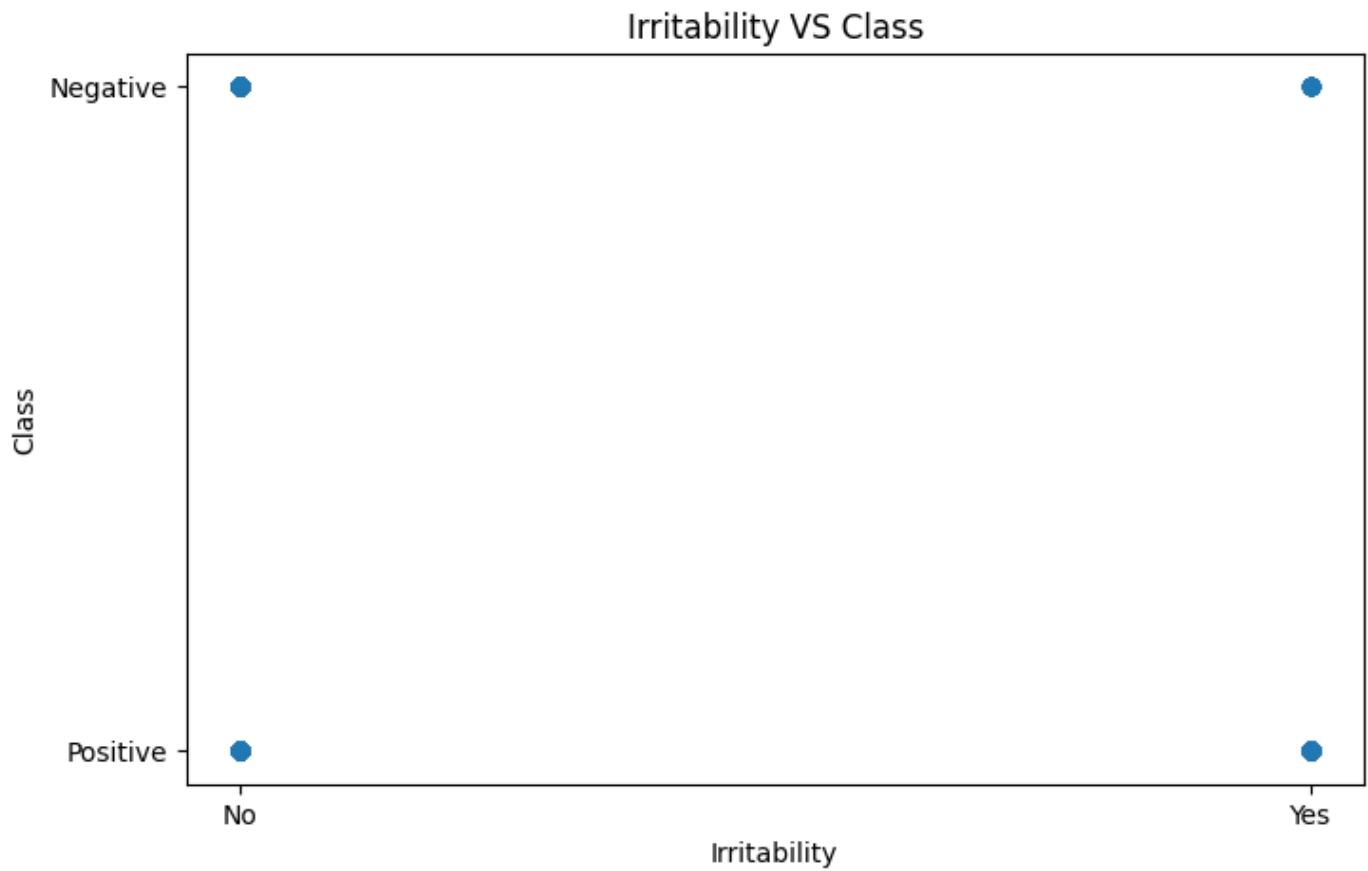
```
In [ ]: plt.figure(figsize=(8,5))
plt.scatter(alopecia,cls)
plt.xlabel('Alopecia')
plt.ylabel('Class')
plt.title('Alopecia VS Class')
plt.show()
```



```
In [ ]: plt.figure(figsize=(8,5))
plt.scatter(obesity,cls)
plt.xlabel('Obesity')
plt.ylabel('Class')
plt.title('Obesity VS Class')
plt.show()
```



```
In [ ]: plt.figure(figsize=(8,5))
plt.scatter(irritability,cls)
plt.xlabel('Irritability')
plt.ylabel('Class')
plt.title('Irritability VS Class')
plt.show()
```



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