

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

```
In [2]: asd_data = pd.read_csv('C:/Users/Priyanka/Downloads/7th sem/PROJECT/Autism/Datasets/asd_dataset.csv', index_col=0)
```

```
In [3]: asd_data.head(10)
```

Out[3]:

	A1	A2	A3	A4	A5	A6	A7	A8	A9	A10	Age_Mons	Sex	Jaundice	Family_mem_with_ASD	Who_completed_the_test	Class
Case_No																
1	0	0	0	0	0	0	1	1	0	1	28	f	yes	no	family member	No
2	1	1	0	0	0	1	1	0	0	0	36	m	yes	no	family member	Yes
3	1	0	0	0	0	0	1	1	0	1	36	m	yes	no	family member	Yes
4	1	1	1	1	1	1	1	1	1	1	24	m	no	no	family member	Yes
5	1	1	0	1	1	1	1	1	1	1	20	f	no	yes	family member	Yes
6	1	1	0	0	1	1	1	1	1	1	21	m	no	no	family member	Yes
7	1	0	0	1	1	1	0	0	1	0	33	m	yes	no	family member	Yes
8	0	1	0	0	1	0	1	1	1	1	33	m	yes	no	family member	Yes
9	0	0	0	0	0	0	1	0	0	1	26	m	no	no	family member	No

```
In [4]: asd_data.tail()
```

Out[4]:

	A1	A2	A3	A4	A5	A6	A7	A8	A9	A10	Age_Mons	Sex	Jaundice	Family_mem_with_ASD	Who_completed_the_test	Class
Case_No																
1050	0	0	0	0	0	0	0	0	0	1	24	f	no	yes	family member	No
1051	0	0	1	1	1	0	1	0	1	0	12	m	yes	no	family member	Yes
1052	1	0	1	1	1	1	1	1	1	1	18	m	yes	no	family member	Yes
1053	1	0	0	0	0	0	0	1	0	1	19	m	no	yes	family member	No
1054	1	1	0	0	1	1	0	1	1	0	24	m	yes	yes	family member	Yes

```
In [5]: asd data.columns
```

```
Out[5]: Index(['A1', 'A2', 'A3', 'A4', 'A5', 'A6', 'A7', 'A8', 'A9', 'A10', 'Age_Mons',
              'Sex', 'Jaundice', 'Family_mem_with_ASD', 'Who_completed_the_test',
              'Class'],
              dtype='object')
```

```
In [6]: asd_data.Class.unique()
```

```
Out[6]: array(['No', 'Yes'], dtype=object)
```

```
In [7]: asd_data.describe()
```

Out[7]:

[illegible]

```
In [8]: asd_data.info()
```

```
<class 'pandas.core.frame.DataFrame'>
Int64Index: 1054 entries, 1 to 1054
Data columns (total 16 columns):
#   Column          Non-Null Count  Dtype
---  -
0   A1              1054 non-null   int64
1   A2              1054 non-null   int64
2   A3              1054 non-null   int64
3   A4              1054 non-null   int64
4   A5              1054 non-null   int64
5   A6              1054 non-null   int64
```

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


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In [9]:

asd_data.dtypes

Out[9]:


A1	int64
A2	int64
A3	int64
A4	int64
A5	int64
A6	int64
A7	int64
A8	int64
A9	int64
A10	int64
Age_Mons	int64
Sex	object
Jaundice	object
Family_mem_with_ASD	object
Who_completed_the_test	object
Class	object
dtype:	object

In [10]:

print(asd_data.isnull().sum())

A1	0
A2	0
A3	0
A4	0
A5	0
A6	0
A7	0
A8	0

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Code

```
dtype: int64

In [11]: asd_data.shape
Out[11]: (1054, 16)


In [12]: asd_data['Jaundice'].value_counts()
Out[12]: no      766
        yes     288
        Name: Jaundice, dtype: int64

In [13]: asd_data['Family_mem_with_ASD'].value_counts()
Out[13]: no      884
        yes     170
        Name: Family_mem_with_ASD, dtype: int64

In [14]: asd_data['Sex'].value_counts()
Out[14]: m      735
        f      319
        Name: Sex, dtype: int64

In [15]: asd_data['Who_completed_the_test'].value_counts()
Out[15]: family member      1018
        Health Care Professional      24
        Health care professional      5
        Self
```

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```
In [16]: asd_data['Class'].value_counts()
```

```
Out[16]: Yes    728  
        No     326  
        Name: Class, dtype: int64
```

```
In [17]: asd_data.groupby('Class').agg(['min'])
```

	A1	A2	A3	A4	A5	A6	A7	A8	A9	A10	Age_Mons	Sex	Jaundice	Family_mem_with_ASD	Who_completed_the_test	
	min	min	min	min	min	min	min	min	min	min		min	min	min	min	
Class	No	0	0	0	0	0	0	0	0	0	12	f	no		no	Health Care Professional
	Yes	0	0	0	0	0	0	0	0	0	12	f	no		no	Health Care Professional

```
In [18]: asd_data.groupby('Who_completed_the_test').agg(['min'])
```

Out[18]:																
	A1	A2	A3	A4	A5	A6	A7	A8	A9	A10	Age_Mons	Sex	Jaundice	Family_mem_with_ASD	Class	
	min	min	min	min	min	min	min	min	min	min	min	min	min	min	min	
Who_completed_the_test																
Health Care Professional	0	0	0	0	0	0	0	0	0	0	12	m	no		No	
Health care professional	0	0	0	0	0	0	0	0	0	0	12	f	no		No	
Others	1	1	0	0	0	0	1	0	0	0	24	m	no		Yes	



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```
In [19]: asd_data.groupby('Who_completed_the_test').agg(['max'])
```

Out[19]:

	A1	A2	A3	A4	A5	A6	A7	A8	A9	A10	Age_Mons	Sex	Jaundice	Family_mem_with_ASD	Class
	max	max	max	max	max	max	max	max	max	max		max	max	max	max
Who_completed_the_test															
Health Care Professional	1	1	1	1	1	1	1	1	1	1	36	m	yes	yes	Yes
Health care professional	1	1	1	1	1	1	1	1	1	1	36	f	no	no	Yes
Others	1	1	1	1	1	1	1	1	1	1	36	m	no	no	Yes
Self	1	1	1	1	1	1	1	1	1	1	36	m	yes	no	Yes
family member	1	1	1	1	1	1	1	1	1	1	36	m	yes	yes	Yes

```
In [20]: asd_data.groupby('Who_completed_the_test').agg(['mean'])
```

Out[20]:

	A1	A2	A3	A4	A5	A6	A7	A8	A9	A10	Age_Mons
	mean	mean	mean	mean	mean	mean	mean	mean	mean	mean	mean
Who_completed_the_test											
Health Care Professional	0.791667	0.541667	0.416667	0.500000	0.541667	0.708333	0.541667	0.583333	0.500000	0.666667	28.750000
Health care professional	0.200000	0.200000	0.200000	0.200000	0.400000	0.600000	0.400000	0.600000	0.400000	0.800000	21.400000
Others	1.000000	1.000000	0.666667	0.666667	0.666667	0.333333	1.000000	0.666667	0.333333	0.666667	30.000000
Self	0.250000	0.500000	0.500000	0.500000	0.750000	0.750000	0.750000	0.500000	0.250000	0.750000	30.500000



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	A1	A2	A3	A4	A5	A6	A7	A8	A9	A10	Age_mons
	mean	mean	mean	mean	mean	mean	mean	mean	mean	mean	mean
Who_completed_the_test											
Health Care Professional	0.791667	0.541667	0.416667	0.500000	0.541667	0.708333	0.541667	0.583333	0.500000	0.666667	28.750000
Health care professional	0.200000	0.200000	0.200000	0.200000	0.400000	0.600000	0.400000	0.600000	0.400000	0.800000	21.400000
Others	1.000000	1.000000	0.666667	0.666667	0.666667	0.333333	1.000000	0.666667	0.333333	0.666667	30.000000
Self	0.250000	0.500000	0.500000	0.500000	0.750000	0.750000	0.750000	0.500000	0.250000	0.750000	30.500000
family member	0.559921	0.445972	0.400786	0.513752	0.523576	0.573674	0.652259	0.454813	0.491159	0.582515	27.861493

In [21]: `asd_data.groupby('Who_completed_the_test').agg(['median'])`

Out[21]:

	A1	A2	A3	A4	A5	A6	A7	A8	A9	A10	Age_Mons
	median	median	median	median	median	median	median	median	median	median	median
Who_completed_the_test											
Health Care Professional	1	1.0	0.0	0.5	1	1	1	1.0	0.5	1	31.5
Health care professional	0	0.0	0.0	0.0	0	1	0	1.0	0.0	1	20.0
Others	1	1.0	1.0	1.0	1	0	1	1.0	0.0	1	30.0
Self	0	0.5	0.5	0.5	1	1	1	0.5	0.0	1	36.0
family member	1	0.0	0.0	1.0	1	1	1	0.0	0.0	1	30.0

In [22]: `#histogram`

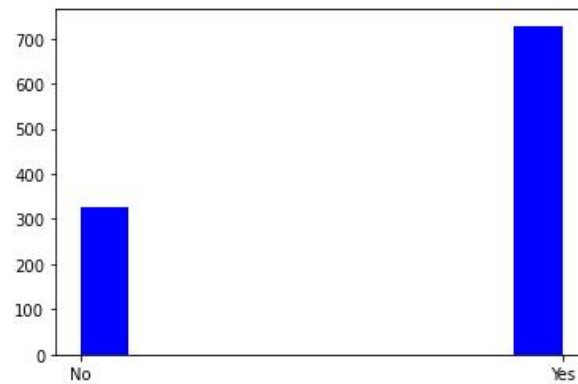


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```
In [22]: #histogram
plt.hist(asd_data["Class"],color='blue')
plt.show()
```



```
In [23]: plt.hist(asd_data["Who_completed_the_test"],color='green')
plt.show()
```





```
In [23]: plt.hist(asd_data["Who_completed_the_test"],color='green')
plt.show()
```



```
In [24]: plt.hist(asd_data["Sex"],color='red')
plt.show()
```





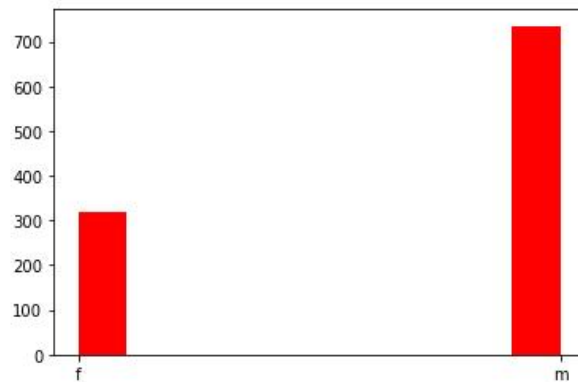
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```
In [24]: plt.hist(asd_data["Sex"],color='red')  
plt.show()
```



```
In [25]: plt.hist(asd_data["Family_mem_with_AS"],color='pink')  
plt.show()
```





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```
In [25]: plt.hist(asd_data["Family_mem_with_ASD"],color='pink')
plt.show()
```



```
In [26]: plt.hist(asd_data["Jaundice"],color='yellow')
plt.show()
```



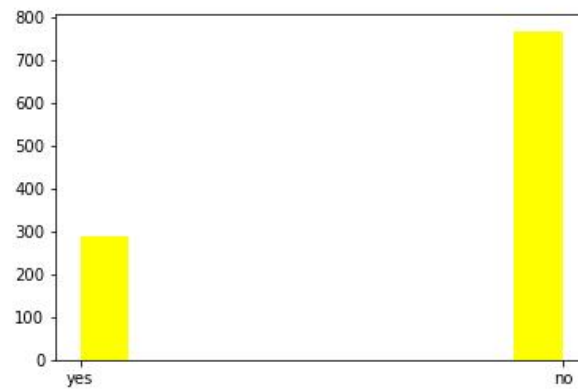
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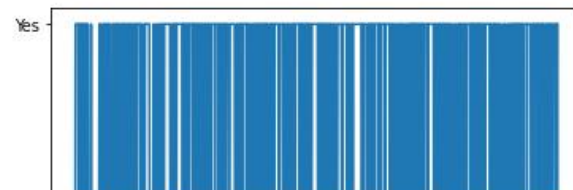
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```
In [26]: plt.hist(asd_data["Jaundice"],color='yellow')
plt.show()
```

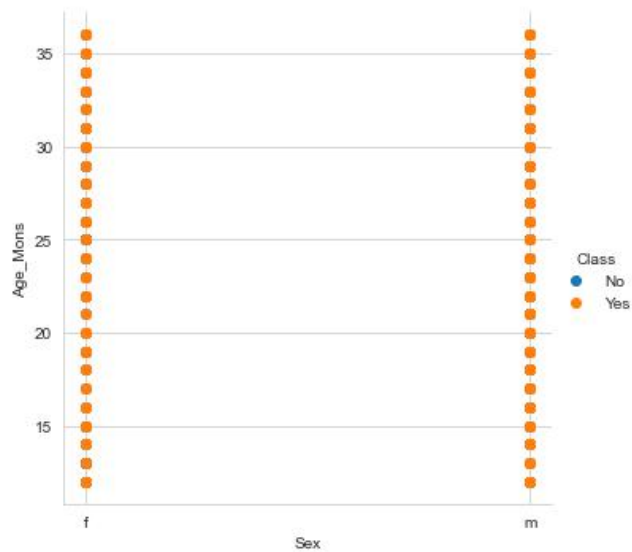


```
In [27]: plt.plot(asd_data["Class"])
plt.xlabel("No. of data points")
plt.show()
```





```
In [28]: sb.set_style('whitegrid');
sb.FacetGrid(asd_data,hue='Class',height=5).map(plt.scatter,'Sex','Age_Mons').add_legend();
plt.show();
```



```
In [29]: sb.set_style('whitegrid');
sb.FacetGrid(asd_data,hue='Class',height=5).map(plt.scatter,'Age_Mons','Family_mem_with_ASD').add_legend();
plt.show();
```



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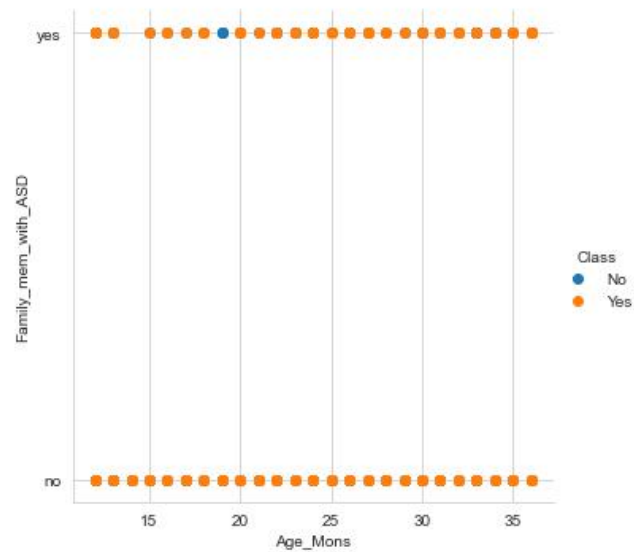
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```
In [29]: sb.set_style('whitegrid');
sb.FacetGrid(asd_data,hue='Class',height=5).map(plt.scatter,'Age_Mons','Family_mem_with_ASD').add_legend();
plt.show();
```



```
In [30]: sb.boxplot(x='A1',y='Age_Mons',data=asd_data)
plt.grid()
plt.show()
```



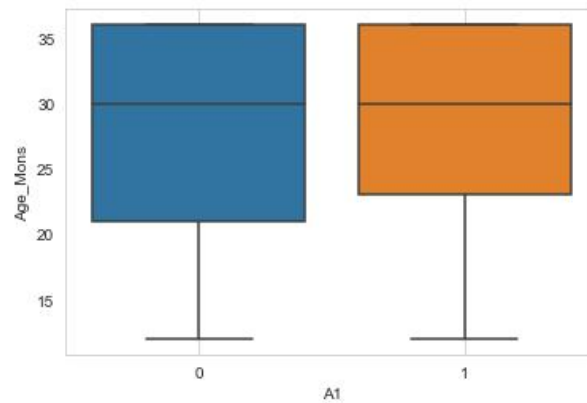
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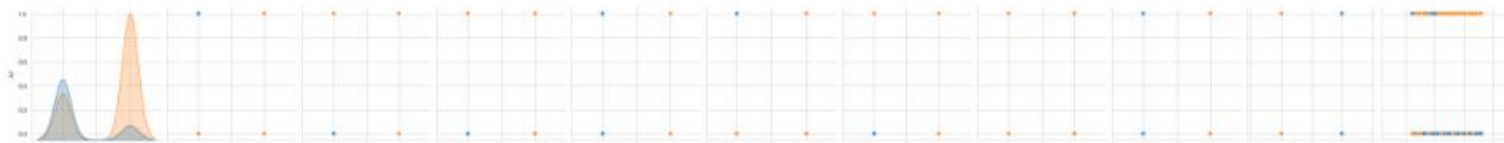
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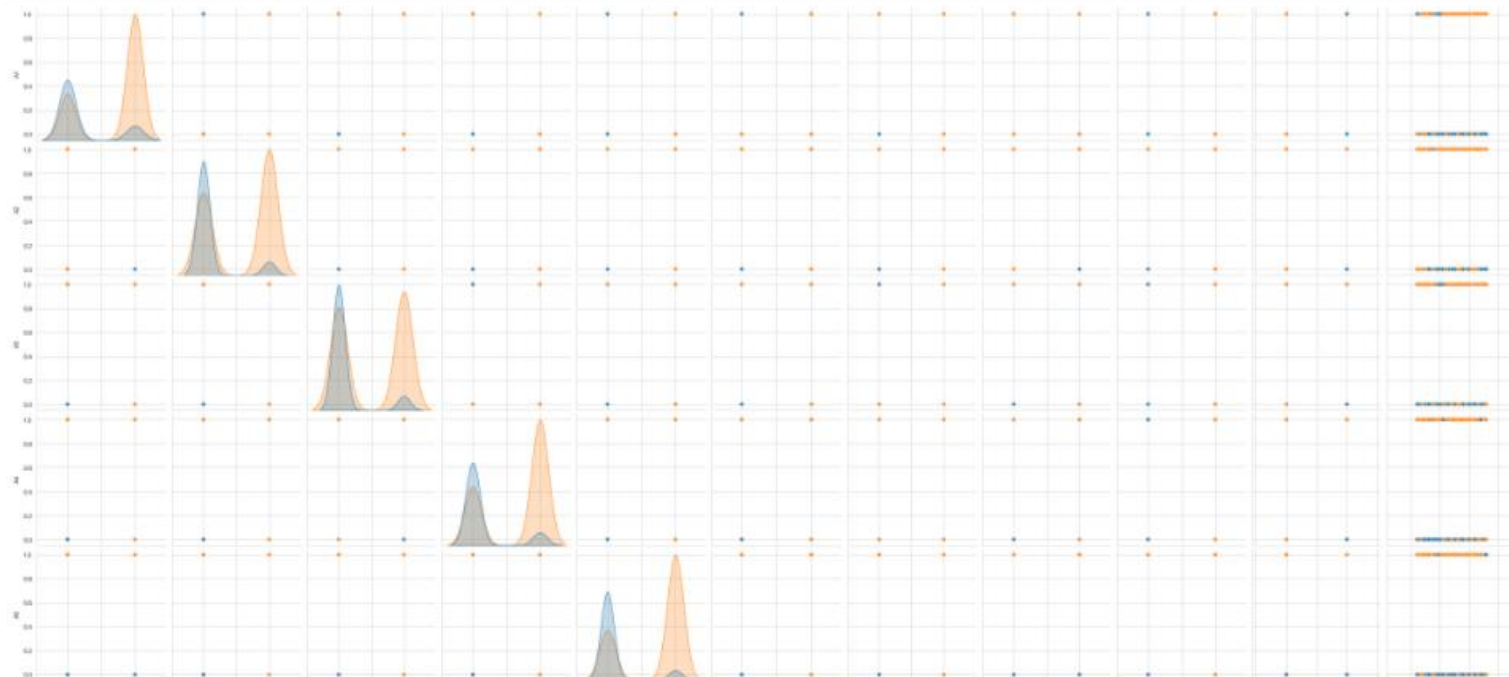
```
In [30]: sb.boxplot(x='A1',y='Age_Mons',data=asd_data)
plt.grid()
plt.show()
```



```
In [31]: sb.set_style('whitegrid')
sb.pairplot(asd_data,hue='Class',height=3)
plt.show()
```




```
In [31]: sb.set_style('whitegrid')
sb.pairplot(asd_data,hue='Class',height=3)
plt.show()
```

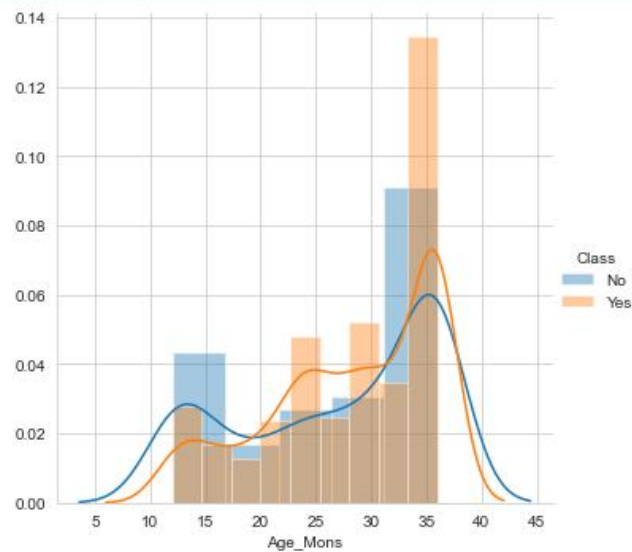




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In []:

In []:



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