NAMA : I'ROFUL BARIYAH

NIM : 17.51.004

1. Soal no1

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

In [2]:
```
df=pd.read_csv('dataset_soal No.1.csv',delimiter=';')
```

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

Out[3]:

	Age	Income	Student	Credit_rating	Class (buy_computer)
0	<=30	High	No	Fair	No
1	<=30	High	No	Excellent	No
2	31..40	High	No	Fair	Yes
3	> 40	Medium	No	Fair	Yes
4	> 40	Low	Yes	Fair	Yes

In [4]:
```
df.shape
```

Out[4]:
```
(51, 5)
```

In [5]:
```
#student
df['Student'].value_counts()
```


Out[5]:
```
Yes    27
No     24
```

In [6]:
```
PYes = 27/51
PNo = 24/51
```

In [7]:
```
print(PYes)
```
```
0.5294117647058824
```

In [8]:
```
print(PNo)
```
```
0.47058823529411764
```

In [9]:
```
#income with student
pd.crosstab(df['Income'], df['Student'])
```

Out[9]:

Student	No	Yes
Income		
High	9	2
Low	1	20
Medium	14	5

In [10]:
```
PHighNo = 9/24
PLowNo = 1/24
PMediumNo= 14/24

PHighYes = 2/27
PLowYes = 20/27
PMediumYes = 5/27

PHigh = 11/51
PLow = 21/51
PMedium = 19/51

print(PHighNo)
```
```
0.375
```

In [11]:
```
print(PLowNo)
```
```
0.041666666666666664
```

In [12]:
```
print(PMediumNo)
```
```
0.5833333333333334
```

In [13]:
```
print(PHighYes)
```
```
0.07407407407407407
```

In [14]:
```
print(PLowYes)
```

```
0.7407407407407407
```

In [15]:
```
print(PMediumYes)
```

```
0.18518518518518517
```

In [16]:
```
print(PHigh)
```

```
0.21568627450980393
```

In [17]:
```
print(PLow)
```

```
0.4117647058823529
```

In [18]:
```
print(PMedium)
```

```
0.37254901960784315
```

In [19]:
```
#credit rating with student
pd.crosstab(df['Credit_rating'], df['Student'])
```

Out[19]:

Student	No	Yes
Credit_rating		
Excellent	8	12
Fair	16	15

In [20]:
```
PExcellentNo = 8/24
PFairNo = 16/24

PExcellentYes = 12/27
PFairYes = 15/27

PExcellent = 20/51
PFair = 31/51

print(PExcellentNo)
```

```
0.3333333333333333
```

In [21]:
```
print(PFairNo)
```

```
0.6666666666666666
```


In [22]:
```
print(PExcellentYes)
```

```
0.4444444444444444
```

In [23]:
```
print(PFairYes)
```

```
0.5555555555555556
```

In [24]:
```
print(PExcellent)
```

```
0.39215686274509803
```

In [25]:
```
print(PFair)
```

```
0.6078431372549019
```

In [26]:
```
#income with class(buy_computer)
pd.crosstab(df['Income'], df['Class (buy_computer)'])
```

Out[26]:

Class (buy_computer)	No	Yes
Income		
High	6	5
Low	11	10
Medium	5	14

In [27]:
```
PHighNo = 6/22
PLowNo = 11/22
PMediumNo= 5/22

PHighYes = 5/29
PLowYes = 10/29
PMediumYes = 24/29

PHigh = 11/51
PLow = 21/51
PMedium = 19/51

print(PHighNo)
```

```
0.2727272727272727
```

In [28]:
```
print(PLowNo)
```

```
0.5
```

In [29]:
```
print(PMediumNo)
```

```
0.22727272727272727
```

In [30]:
```
print(PHighYes)
```

```
0.1724137931034483
```


In [31]:
```
print(PLowYes)
```

```
0.3448275862068966
```

In [32]:
```
print(PMediumYes)
```

```
0.8275862068965517
```

In [33]:
```
#credit rating with class(buy_computer)
pd.crosstab(df['Credit_rating'], df['Class (buy_computer)'])
```

Out[33]:

Class (buy_computer)	No	Yes
Credit_rating		
Excellent	8	12
Fair	14	17

In [34]:
```
PExcellentNo = 8/22
PFairNo = 14/22

PExcellentYes = 12/29
PFairYes = 17/29

PExcellent = 20/51
PFair = 31/51

print(PExcellentNo)
```

```
0.36363636363636365
```

In [35]:
```
print(PFairNo)
```

```
0.6363636363636364
```

In [36]:
```
print(PExcellentYes)
```

```
0.41379310344827586
```

In [37]:
```
print(PFairYes)
```

```
0.5862068965517241
```