In [2]:
```
import pandas as pd
df = pd.read_csv('/home/pg/Downloads/play_tennis.csv')
df.head()
```

Out[2]:

	day	outlook	temp	humidity	wind	play
0	D1	Sunny	Hot	High	Weak	No
1	D2	Sunny	Hot	High	Strong	No
2	D3	Overcast	Hot	High	Weak	Yes
3	D4	Rain	Mild	High	Weak	Yes
4	D5	Rain	Cool	Normal	Weak	Yes

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

Out[3]:

	day	outlook	temp	humidity	wind	play
count	14	14	14	14	14	14
unique	14	3	3	2	2	2
top	D1	Sunny	Mild	High	Weak	Yes
freq	1	5	6	7	8	9

In [7]:
```
df.drop(columns=['day'],inplace=True)
```

In [8]:
```
df.describe()
```

Out[8]:

	outlook	temp	humidity	wind	play
count	14	14	14	14	14
unique	3	3	2	2	2
top	Sunny	Mild	High	Weak	Yes
freq	5	6	7	8	9

In [21]:
```
P_yes=9/14
P_no=5/14
```

In [22]:
```
pd.crosstab(df.outlook,df.play)
```

Out[22]:

play	No	Yes
outlook		
Overcast	0	4
Rain	2	3
Sunny	3	2

In [23]:
```
Povercast_no=0/5
Povercast_yes=4/9
Prain_no=2/3
Prain_yes=3/9
Psun_no=3/5
Psun_yes=2/9
```

In [24]:
```
pd.crosstab(df.temp,df.play)
```

Out[24]:

play / temp	No	Yes
Cool	1	3
Hot	2	2
Mild	2	4

In [25]:
```
Pcool_no=1/5
Pcool_yes=3/9
Phot_no=2/5
Phot_yes=2/9
Pmild_no=2/5
Pmild_yes=4/9
```

In [26]:
```
pd.crosstab(df.humidity,df.play)
```

Out[26]:

play / humidity	No	Yes
High	4	3
Normal	1	6

In [27]:
```
Phigh_no=4/5
Phigh_yes=3/9
Pnormal_no=1/4
Pnormal_yes=6/9
```

In [28]:
```
pd.crosstab(df.wind,df.play)
```

Out[28]:

play / wind	No	Yes
Strong	3	3
Weak	2	6

In [29]:
```
Pstrong_no=3/5
Pstrong_yes=2/5
Pweak_no=1/3
Pweak_yes=2/3
```

In [30]:
```
P_p1_yes=P_yes*Psun_yes*Phot_yes*Phigh_yes*Pweak_yes
```

In [31]:
```
P_p1_no=P_no*Psun_no*Phot_no*Phigh_no*Pweak_no
```

In [32]:
```
print(P_p1_yes)
```

```
0.007054673721340388
```

In [33]:
```
print(P_p1_no)
```

```
0.022857142857142857
```

In [34]:
```
P_p2_yes=P_yes*Povercast_yes*Pcool_yes*Pnormal_yes*Pweak_yes
```

In [35]:
```
P_p2_no=P_no*Povercast_no*Pcool_no*Pnormal_no*Pweak_no
```

In [36]:
```
print(P_p2_yes)
```

```
0.042328042328042326
```

In [37]:
```
print(P_p2_no)
```

```
0.0
```

In [ ]: