Using Play Tennis, we have predict which variables combination will have the highest impact on the decision.

Day 15 :- Outlook = Sunny, Temp = Cool, Humidity = High, Wind = Strong

$$V_{NB} = \underset{v_j \in [yes, no]}{\operatorname{argmax}} \; P(v_j) \prod_i P(a_i | v_j)$$

$$= \underset{v_j \in (yes, no)}{\operatorname{argmax}} \; P(v_j) * P(Outlook = Sunny | v_j) * P(Temp = Cool | v_j) * P(Humidity = high | v_j) * P(Wind = strong | v_j)$$

$$V_{NB}(yes) = P(yes) * P(Outlook = Sunny | yes) * P(Temp = Cool | yes) * P(Humidity = High | yes) * P(Wind = Strong | yes)$$

$$= (9/14) * (2/9) * (3/9) * (3/9) * (3/9)$$

$$= 0.0053$$

$$V_{NB}(No) = P(no) * P(sunny | no) * P(cool | no) * P(High | no) * P(Strong | no)$$

$$= (5/14) * (3/5) * (1/5) * (4/5) * (3/5)$$

$= (5/14) * (3/5) * (1/5) * (4/5) * (3/5)$

$= 0.0205$

$$V_{NB(yes)} = \frac{V_{NB(yes)}}{V_{NB(yes)} + V_{NB(No)}} = \frac{0.0053}{0.0053 + 0.0205}$$

$$= \underline{0.2054}$$

$$V_{NB(No)} = \frac{V_{NB(No)}}{V_{NB(yes)} + V_{NB(No)}} = \frac{0.0205}{0.0053 + 0.0205}$$

$$= 0.795$$

79.5% chance that person won't play tennis

20.5% chance that person will play tennis