

The probability that it is Friday and that a student is absent is 3%. Since there are 5 school days in a week, the probability that it is Friday is 20%. What is the probability that a student is absent given that today is Friday? Apply Bayes' rule in python to get the result. (Ans:15%)

AIM: To find the probability that a student is absent given that today is Friday.

DESCRIPTION:

Machine learning is a method of data analysis that automates analytical model building of data set. Using the implemented algorithms that iteratively learn from data, machine learning allows computers to find hidden insights without being explicitly programmed where to look. Naive bayes algorithm is one of the most popular machine learning technique. In this article we will look how to implement Naive bayes algorithm using python.

Before someone can understand Bayes' theorem, they need to know a couple of related concepts first, namely, the idea of Conditional Probability, and Bayes' Rule.

Conditional Probability is just what is the probability that something will happen, given that something else has already happened.

Let say we have a collection of people. Some of them are singers. They are either male or female. If we select a random sample, what is the probability that this person is a male? what is the probability that this person is a male and singer? Conditional Probability is the best option here. We can calculate probability like,

$$P(\text{Singer \& Male}) = P(\text{Male}) \times P(\text{Singer} / \text{Male})$$

SOURCE CODE:

```
probAbsentFriday=0.03
```

```
probFriday=0.2
```

```
# bayes Formula
```

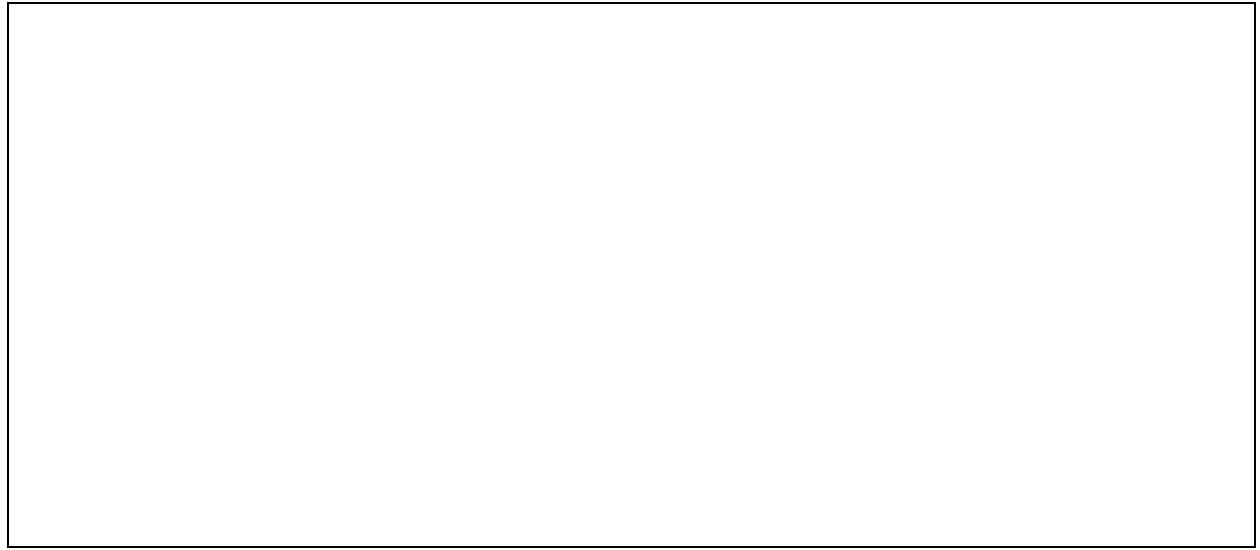
```
#p(Absent | Friday)=p(Friday | Absent)p(Absent)/p(Friday)
```

```
#p(Friday | Absent)=p(Friday∩Absent)/p(Absent) #
```

Therefore the result is:

```
bayesResult=(probAbsentFriday/probFriday) print(bayesResult *  
100)
```

Output: 15A screenshot of a Windows Command Prompt window. The title bar shows 'C:\Windows\System32\cmd.exe'. The window content displays the following text: 'Microsoft Windows [Version 10.0.19045.2846]', '(c) Microsoft Corporation. All rights reserved.', 'C:\Users\SR302-15\Desktop\IT>python3 1.py', '15.0', and 'C:\Users\SR302-15\Desktop\IT>'. The background of the command prompt is black with white text.



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