

Practical 3:

Aim: write program in R of Naive baye's theorem

Requirement:

R tool

Code:

```
data(iris)
```

```
str(iris)
```

```
install.packages("e1071")
```

```
install.packages("caTools")
```

```
install.packages("caret")
```

```
library(e1071)
```

```
library(caTools)
```

```
library(caret)
```

```
split <- sample.split(iris,SplitRatio=0.7)
```

```
train_c1 <-subset(iris,split=="TRUE")
```

```
test_c1 <- subset(iris,split == "FALSE")
```

```
train_scale <- scale(train_c1[, 1:4])
```

```
test_scale <- scale(test_c1[,1:4])
```

```
set.seed(120)
```

```
classifier_c1 <- naiveBayes(Species ~ ., data = train_c1)
```

```
classifier_c1
```

```
y_pred <- predict(classifier_c1, newdata= test_c1)
```

```
cm <- table(test_c1$Species, y_pred)
```

```
cm
```

```
confusionMatrix(cm)
```

Output:

```
R Console
virginica      0      1      19

Overall Statistics

      Accuracy : 0.9333
      95% CI   : (0.838, 0.9815)
No Information Rate : 0.3667
P-Value [Acc > NIR] : < 2.2e-16

      Kappa : 0.9

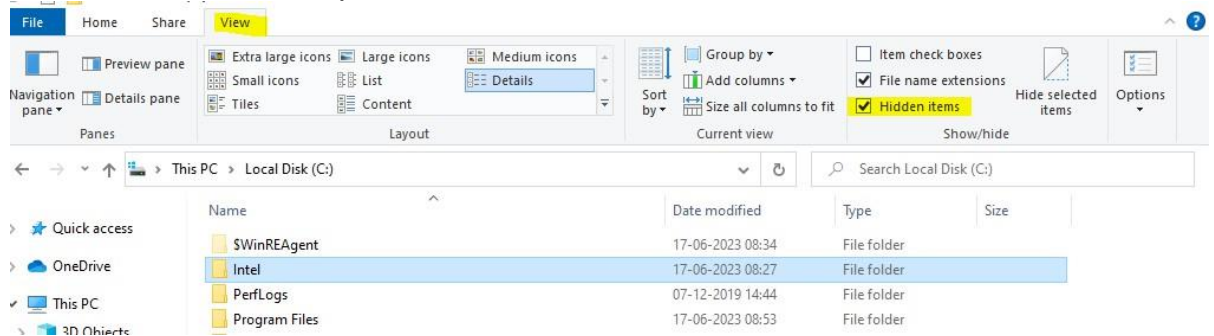
McNemar's Test P-Value : NA

Statistics by Class:

      Class: setosa Class: versicolor Class: virginica
Sensitivity          1.0000          0.9444          0.8636
Specificity          1.0000          0.9286          0.9737
Pos Pred Value       1.0000          0.8500          0.9500
Neg Pred Value       1.0000          0.9750          0.9250
Prevalence           0.3333          0.3000          0.3667
Detection Rate       0.3333          0.2833          0.3167
Detection Prevalence 0.3333          0.3333          0.3333
Balanced Accuracy    1.0000          0.9365          0.9187
> |
```

Install python package:

1. You will need to make the hidden folder visible: go to “C:” drive on top click on tab “view”
2. Select “hidden Items” option:



3. Go to the below path:
C:\Users\Your Name\AppData\Local\Programs\Python\Python36-32\Scripts
4. Set the below path in command prompt and then use the below command:
python -m pip install pymongo

```
Command Prompt
Microsoft Windows [Version 10.0.19045.2965]
(c) Microsoft Corporation. All rights reserved.

C:\Users\RPIMS>cd\

C:\>cd C:\Users\RPIMS\AppData\Local\Programs\Python\Python310\Scripts

C:\Users\RPIMS\AppData\Local\Programs\Python\Python310\Scripts>python -m pip install pymongo
Defaulting to user installation because normal site-packages is not writeable
Requirement already satisfied: pymongo in c:\users\rpims\appdata\roaming\python\python310\site-packages (4.3.3)
Requirement already satisfied: dnspython<3.0.0,>=1.16.0 in c:\users\rpims\appdata\roaming\python\python310\site-packages
(from pymongo) (2.3.0)

C:\Users\RPIMS\AppData\Local\Programs\Python\Python310\Scripts>
```

