PART
B

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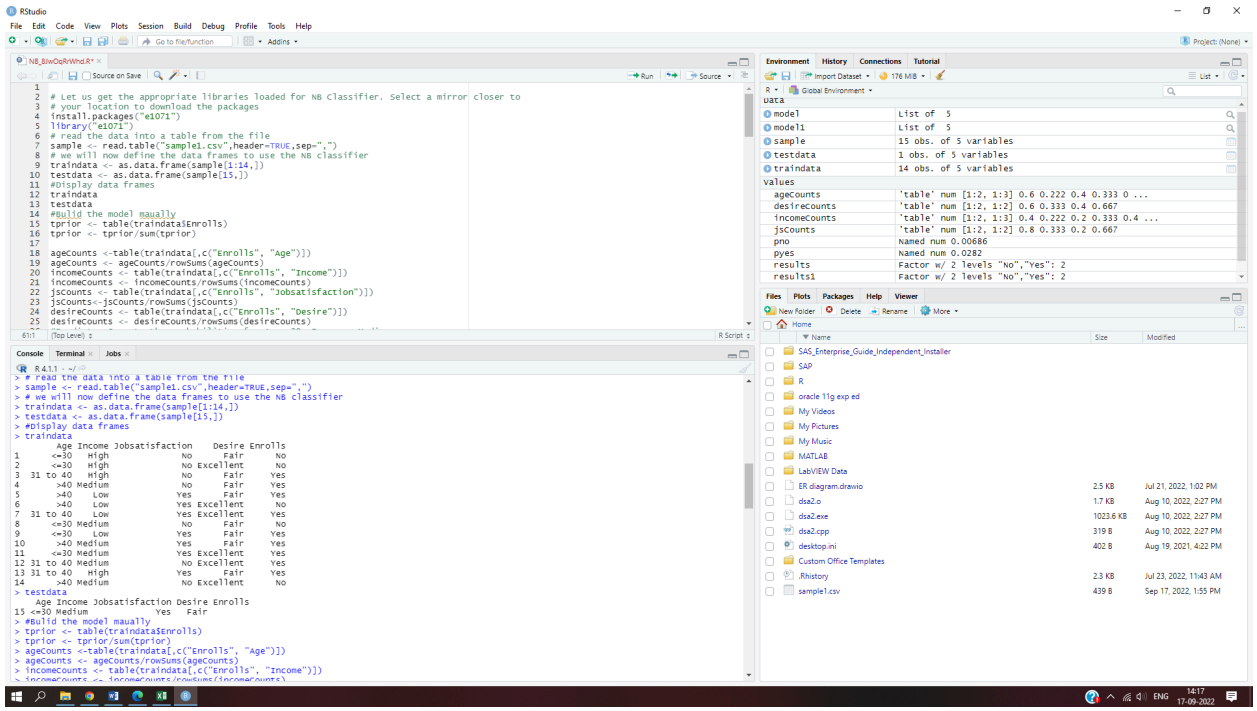
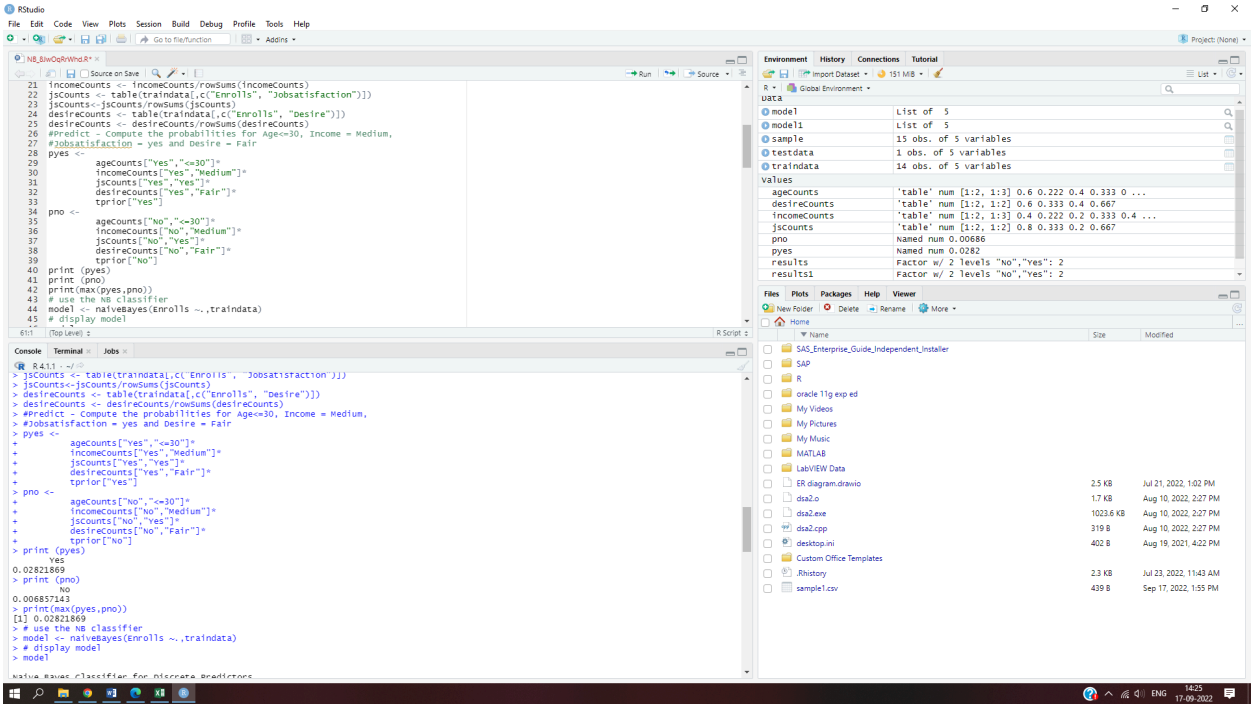
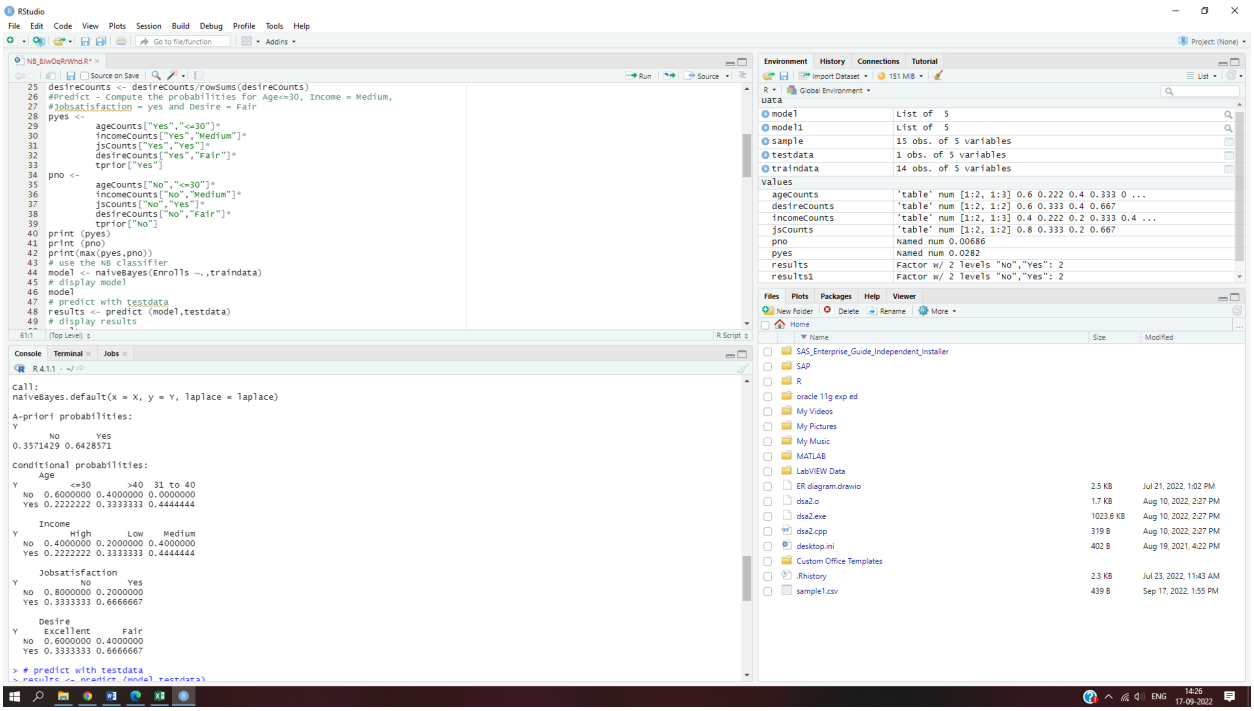
|---|---|
| Roll No. C035 | Name: Krisha Goti |
| Class : B | Batch : B1 |
| Date of Experiment: 17/09/2022 | Date of Submission: 17/09/2022 |
| Grade : | |

## B.1 Classification Code and screenshot by student:




RStudio
File Edit Code View Plots Session Build Debug Profile Tools Help
NB_BJwOqRrWhd.R*
incomeCounts <- incomeCounts/rowSums(incomeCounts)
jsCounts <- table(traindata[,c("Enrolls", "Jobsatisfaction")])
jsCounts<-jsCounts/rowSums(jsCounts)
desireCounts <- table(traindata[,c("Enrolls", "Desire")])
desireCounts <- desireCounts/rowSums(desireCounts)
#Predict - Compute the probabilities for Age<=30, Income = Medium,
#Jobsatisfaction = yes and Desire = Fair
pyes <-
ageCounts["Yes","<=30"]*
incomeCounts["Yes","Medium"]*
jsCounts["Yes","Yes"]*
desireCounts["Yes","Fair"]*
tprior["Yes"]
pno <-
ageCounts["No","<=30"]*
incomeCounts["No","Medium"]*
jsCounts["No","Yes"]*
desireCounts["No","Fair"]*
tprior["No"]
print (pyes)
print (pno)
print(max(pyes,pno))
# use the NB classifier
model <- naiveBayes(Enrolls ~.,traindata)
# display model
Console Terminal Jobs
R 4.1.1 · ~/
> jsCounts <- table(traindata[,c("Enrolls", "Jobsatisfaction")])
> jsCounts<-jsCounts/rowSums(jsCounts)
> desireCounts <- table(traindata[,c("Enrolls", "Desire")])
> desireCounts <- desireCounts/rowSums(desireCounts)
> #Predict - Compute the probabilities for Age<=30, Income = Medium,
> #Jobsatisfaction = yes and Desire = Fair
> pyes <-
+ ageCounts["Yes","<=30"]*
+ incomeCounts["Yes","Medium"]*
+ jsCounts["Yes","Yes"]*
+ desireCounts["Yes","Fair"]*
+ tprior["Yes"]
> pno <-
+ ageCounts["No","<=30"]*
+ incomeCounts["No","Medium"]*
+ jsCounts["No","Yes"]*
+ desireCounts["No","Fair"]*
+ tprior["No"]
> print (pyes)
Yes
0.02821869
> print (pno)
No
0.006857143
> print(max(pyes,pno))
[1] 0.02821869
> # use the NB classifier
> model <- naiveBayes(Enrolls ~.,traindata)
> # display model
> model
Naive Bayes Classifier for Discrete Predictors
Environment History Connections Tutorial
Import Dataset 151 MiB
Global Environment
Data
model List of 5
model1 List of 5
sample 15 obs. of 5 variables
testdata 1 obs. of 5 variables
traindata 14 obs. of 5 variables
Values
ageCounts 'table' num [1:2, 1:3] 0.6 0.222 0.4 0.333 0 ...
desireCounts 'table' num [1:2, 1:2] 0.6 0.333 0.4 0.667
incomeCounts 'table' num [1:2, 1:3] 0.4 0.222 0.2 0.333 0.4 ...
jsCounts 'table' num [1:2, 1:2] 0.8 0.333 0.2 0.667
pno Named num 0.00686
pyes Named num 0.0282
results Factor w/ 2 levels "No","Yes": 2
results1 Factor w/ 2 levels "No","Yes": 2
Files Plots Packages Help Viewer
New Folder Delete Rename More
Home
Name Size Modified
SAS_Enterprise_Guide_Independent_Installer
SAP
R
oracle 11g exp ed
My Videos
My Pictures
My Music
MATLAB
LabVIEW Data
ER diagram.drawio 2.5 KB Jul 21, 2022, 1:02 PM
dsa2.o 1.7 KB Aug 10, 2022, 2:27 PM
dsa2.exe 1023.6 KB Aug 10, 2022, 2:27 PM
dsa2.cpp 319 B Aug 10, 2022, 2:27 PM
desktop.ini 402 B Aug 19, 2021, 4:22 PM
Custom Office Templates
.Rhistory 2.3 KB Jul 23, 2022, 11:43 AM
sample1.csv 439 B Sep 17, 2022, 1:55 PM
ENG 14:25 17-09-2022


RStudio
File Edit Code View Plots Session Build Debug Profile Tools Help
NB_BJwOqRrWhd.R*
desireCounts <- desireCounts/rowSums(desireCounts)
#Predict - Compute the probabilities for Age<=30, Income = Medium,
#Jobsatisfaction = yes and Desire = Fair
pyes <-
ageCounts["Yes","<=30"]*
incomeCounts["Yes","Medium"]*
jsCounts["Yes","Yes"]*
desireCounts["Yes","Fair"]*
tprior["Yes"]
pno <-
ageCounts["No","<=30"]*
incomeCounts["No","Medium"]*
jsCounts["No","Yes"]*
desireCounts["No","Fair"]*
tprior["No"]
print (pyes)
print (pno)
print(max(pyes,pno))
# use the NB classifier
model <- naiveBayes(Enrolls ~.,traindata)
# display model
model
# predict with testdata
results <- predict (model,testdata)
# display results
Console Terminal Jobs
R 4.1.1 · ~/
call:
naiveBayes.default(x = X, y = Y, laplace = laplace)
A-priori probabilities:
Y
No Yes
0.3571429 0.6428571
conditional probabilities:
Age
Y <=30 >40 31 to 40
No 0.6000000 0.4000000 0.0000000
Yes 0.2222222 0.3333333 0.4444444
Income
Y High Low Medium
No 0.4000000 0.2000000 0.4000000
Yes 0.2222222 0.3333333 0.4444444
Jobsatisfaction
Y No Yes
No 0.8000000 0.2000000
Yes 0.3333333 0.6666667
Desire
Y Excellent Fair
No 0.6000000 0.4000000
Yes 0.3333333 0.6666667
> # predict with testdata
> results <- predict (model,testdata)
Environment History Connections Tutorial
Import Dataset 151 MiB
Global Environment
Data
model List of 5
model1 List of 5
sample 15 obs. of 5 variables
testdata 1 obs. of 5 variables
traindata 14 obs. of 5 variables
Values
ageCounts 'table' num [1:2, 1:3] 0.6 0.222 0.4 0.333 0 ...
desireCounts 'table' num [1:2, 1:2] 0.6 0.333 0.4 0.667
incomeCounts 'table' num [1:2, 1:3] 0.4 0.222 0.2 0.333 0.4 ...
jsCounts 'table' num [1:2, 1:2] 0.8 0.333 0.2 0.667
pno Named num 0.00686
pyes Named num 0.0282
results Factor w/ 2 levels "No","Yes": 2
results1 Factor w/ 2 levels "No","Yes": 2
Files Plots Packages Help Viewer
New Folder Delete Rename More
Home
Name Size Modified
SAS_Enterprise_Guide_Independent_Installer
SAP
R
oracle 11g exp ed
My Videos
My Pictures
My Music
MATLAB
LabVIEW Data
ER diagram.drawio 2.5 KB Jul 21, 2022, 1:02 PM
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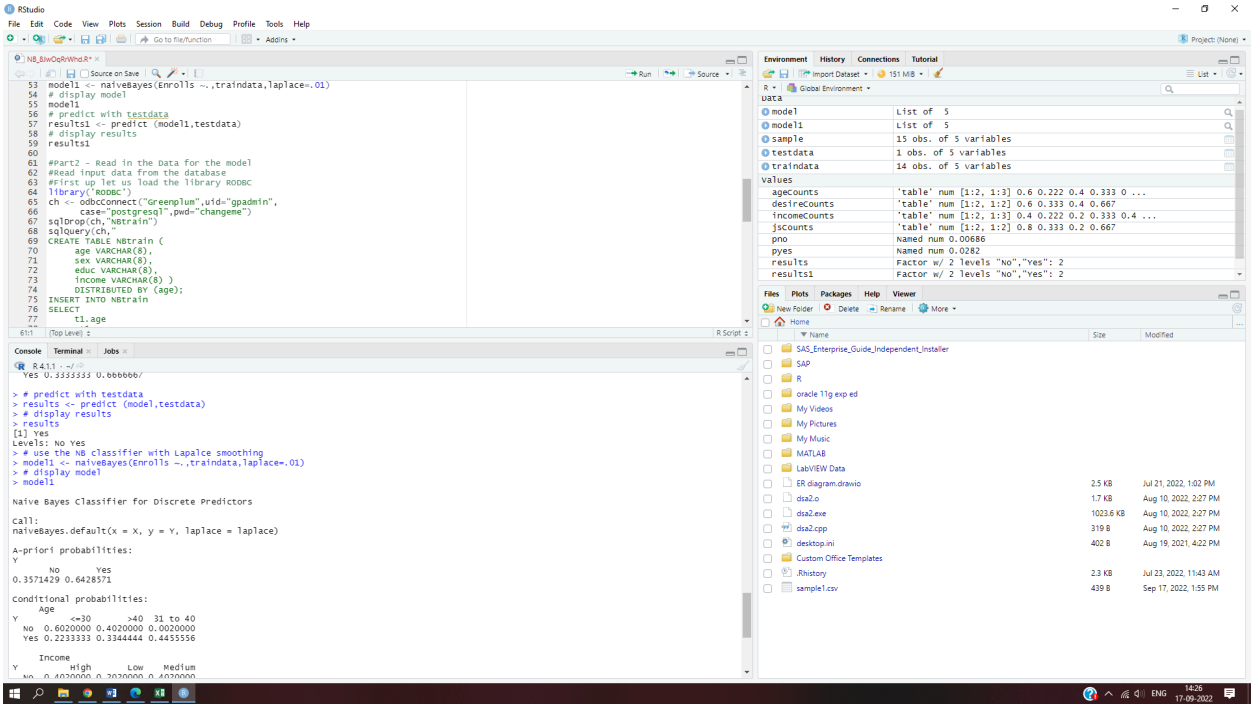
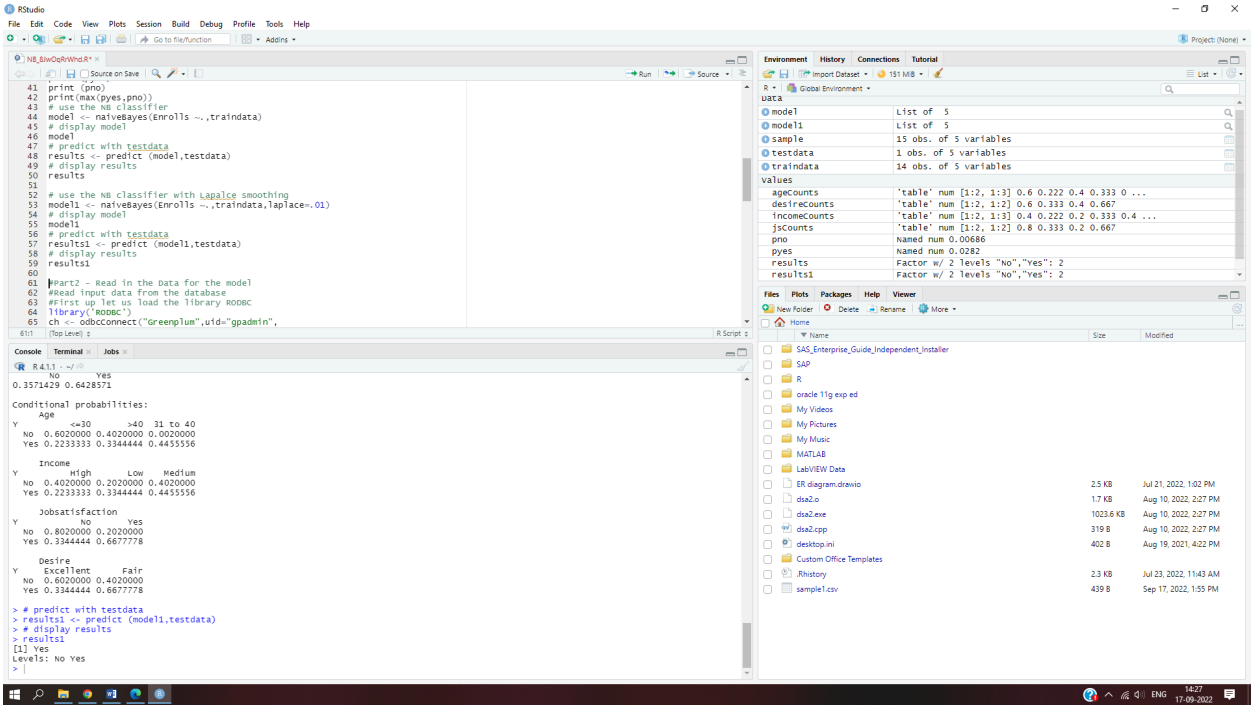
.Rhistory 2.3 KB Jul 23, 2022, 11:43 AM
sample1.csv 439 B Sep 17, 2022, 1:55 PM
ENG 14:26 17-09-2022





## B.2 Observations and learning:

In this experiment, I have understood the concept and written the program for Naive Bayes Classification.

## B.3 Conclusion:

After successfully completing this experiment we are able to:
1. To understand the concept of Data Mining by implementing some data mining algorithm.
2. To understand the various Classification techniques in Mining.
3. To understand Naive Bayes Classification Algorithm.

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