Tutorial on NaBa Package

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Have a look at the test data

```
##   age    sex gpa exercise local      mood
## 1  20   Male 3.8     <NA>  TRUE excellent
## 2  18   Male 2.2     <NA> FALSE        ok
## 3  23 Female 2.7    Often  TRUE        ok
## 4  23 Female 2.9 Everyday  TRUE        ok
## 5  19   <NA>  NA   Seldom FALSE        ok
## 6  20   Male 3.5    Often  TRUE excellent
```

```
## [1] 2000    6
```

```
##   age    sex gpa exercise local
## 1  20   Male 3.8     <NA>  TRUE
## 2  18   Male 2.2     <NA> FALSE
## 3  23 Female 2.7    Often  TRUE
## 4  23 Female 2.9 Everyday  TRUE
## 5  19   <NA>  NA   Seldom FALSE
## 6  20   Male 3.5    Often  TRUE
```

```
## [1] 200   5
```

Obtain prior information and make predictions using `NaBa`, `e1071` and `naivebayes`

```
prior=NaBa::Info_prior(x,y)
myresult_raw=NaBa::predict_naBa(prior,newdata,"raw")
myresult_class=NaBa::predict_naBa(prior,newdata,"class")

prior2=e1071::naiveBayes(x,y)
e1071result_raw=predict(prior2,newdata,"raw")
e1071result_class=predict(prior2,newdata,"class")

prior3=naivebayes::naive_bayes(x,y)
nbresult_raw=predict(prior3,newdata,"prob")
nbresult_class=predict(prior3,newdata,"class")
```

Compare if the predictions of NaBa are the same as e1071:

```
all.equal(myresult_raw,e1071result_raw)
```

```
## [1] TRUE
```

```
all.equal(myresult_class,e1071result_class)
```

```
## [1] TRUE
```

Compare efficiency of predict function with other packages:

```
tm <- microbenchmark::microbenchmark(
NaBa_result=NaBa::predict_naBa(prior,newdata,"raw"),
e1071_result=predict(prior2,newdata,"raw"),
naivebayes_result=predict(prior3,newdata,"prob"))
ggplot2::autoplot(tm)
```