```r
library(arules)
```

```
## Loading required package: Matrix
```

```
##
## Attaching package: 'arules'
```

```
## The following objects are masked from 'package:base':
##
##     abbreviate, write
```

```r
data('Adult')
#implement the aprior algorithm
rules <- apriori(Adult, parameter = list(supp=0.5, conf=0.9, target='rules', minlen=2))
```

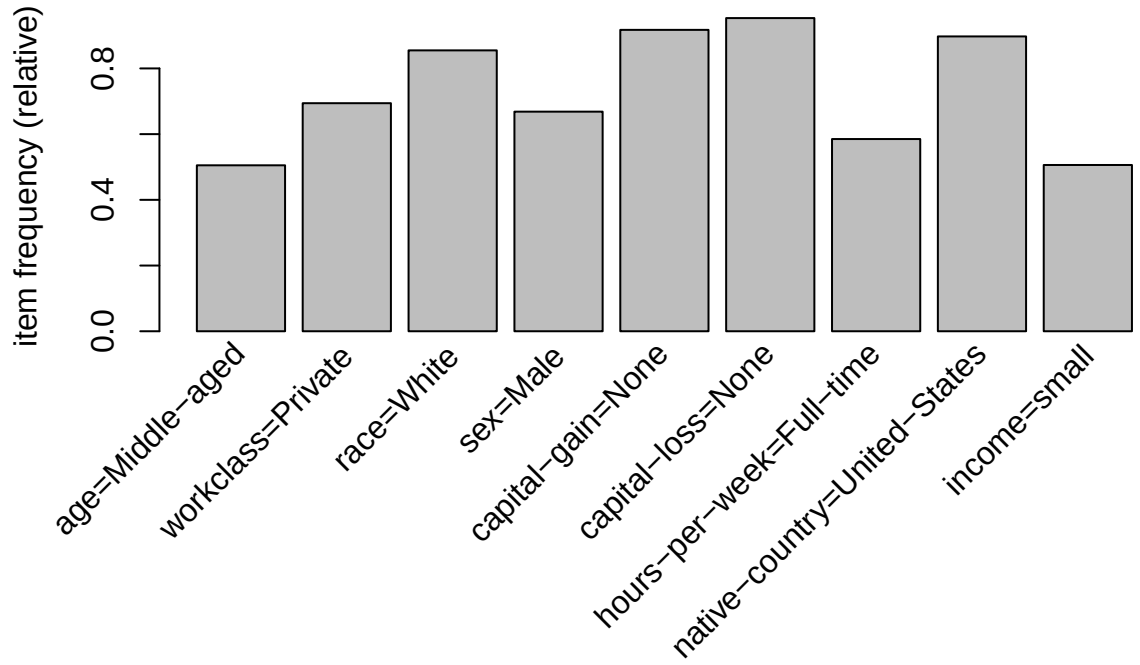
```
## Apriori
##
## Parameter specification:
##  confidence minval smax arem  aval originalSupport maxtime support minlen
##         0.9    0.1    1 none FALSE            TRUE       5     0.5      2
##  maxlen target   ext
##      10  rules FALSE
##
## Algorithmic control:
##  filter tree heap memopt load sort verbose
##     0.1 TRUE TRUE  FALSE TRUE    2    TRUE
##
## Absolute minimum support count: 24421
##
## set item appearances ...[0 item(s)] done [0.00s].
## set transactions ...[115 item(s), 48842 transaction(s)] done [0.03s].
## sorting and recoding items ... [9 item(s)] done [0.00s].
## creating transaction tree ... done [0.01s].
## checking subsets of size 1 2 3 4 done [0.00s].
## writing ... [50 rule(s)] done [0.00s].
## creating S4 object  ... done [0.01s].
```

```r
summary(rules)
```

```
## set of 50 rules
##
## rule length distribution (lhs + rhs):sizes
##  2  3  4
## 13 24 13
```

```
##
##    Min. 1st Qu.  Median    Mean 3rd Qu.    Max.
##    2.00    2.25    3.00    3.00    3.75    4.00
##
## summary of quality measures:
##     support         confidence          lift            count
##  Min.   :0.5084   Min.   :0.9031   Min.   :0.9844   Min.   :24832
##  1st Qu.:0.5415   1st Qu.:0.9148   1st Qu.:0.9936   1st Qu.:26447
##  Median :0.5797   Median :0.9229   Median :0.9994   Median :28314
##  Mean   :0.6319   Mean   :0.9306   Mean   :1.0037   Mean   :30863
##  3rd Qu.:0.7352   3rd Qu.:0.9489   3rd Qu.:1.0066   3rd Qu.:35908
##  Max.   :0.8707   Max.   :0.9583   Max.   :1.0586   Max.   :42525
##
## mining info:
##   data ntransactions support confidence
##  Adult         48842     0.5        0.9
```

```r
#Analyze the atrribute types and values
itemFrequencyPlot(Adult,support=0.5)
```




```r
inspect(rules[1:15])
```

```
##      lhs                                rhs                          support confidence      lift
## [1]  {hours-per-week=Full-time}     => {capital-gain=None}          0.5435895  0.9290688 1.0127342
## [2]  {hours-per-week=Full-time}     => {capital-loss=None}          0.5606650  0.9582531 1.0052191
```

```
## [3]  {sex=Male}                     => {capital-gain=None}            0.6050735  0.9051455 0.9866565
## [4]  {sex=Male}                     => {capital-loss=None}            0.6331027  0.9470750 0.9934931
## [5]  {workclass=Private}            => {capital-gain=None}            0.6413742  0.9239073 1.0071078
## [6]  {workclass=Private}            => {capital-loss=None}            0.6639982  0.9564974 1.0033773
## [7]  {race=White}                   => {native-country=United-States} 0.7881127  0.9217231 1.0270761
## [8]  {race=White}                   => {capital-gain=None}            0.7817862  0.9143240 0.9966616
## [9]  {race=White}                   => {capital-loss=None}            0.8136849  0.9516307 0.9982720
## [10] {native-country=United-States} => {capital-gain=None}            0.8219565  0.9159062 0.9983862
## [11] {native-country=United-States} => {capital-loss=None}            0.8548380  0.9525461 0.9992323
## [12] {capital-gain=None}            => {capital-loss=None}            0.8706646  0.9490705 0.9955863
## [13] {capital-loss=None}            => {capital-gain=None}            0.8706646  0.9133376 0.9955863
## [14] {capital-gain=None,
##       hours-per-week=Full-time}     => {capital-loss=None}            0.5191638  0.9550659 1.0018756
## [15] {capital-loss=None,
##       hours-per-week=Full-time}     => {capital-gain=None}            0.5191638  0.9259787 1.0093657
```

```
#inspect(sort(rules, by='support'))[1:15]
```