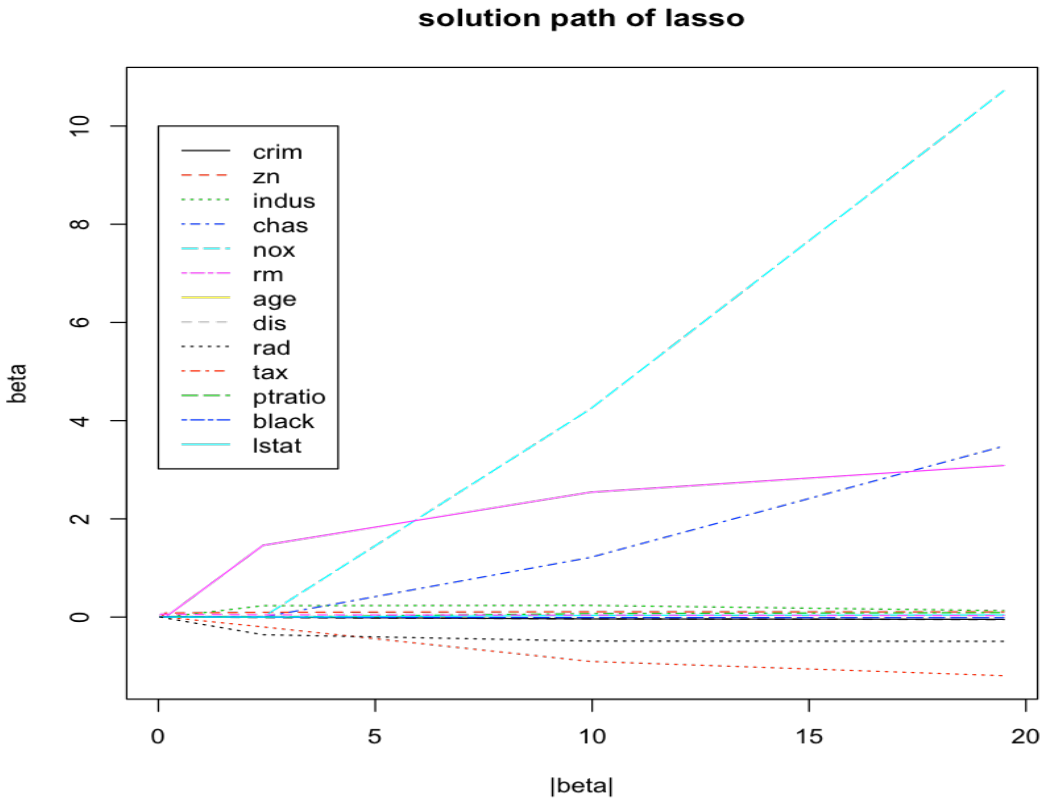
Solution path of Lasso:

The famous Boston Housing Dataset used here.



(1) Beta is initialed all zeros;
(2) As lambda decrease, the most related information will come in and so It becomes nonzero;
(3) Beta l1 norm will becomes larger along the way as some of the element becomes non-zero;
(4) Feature selected can be reflected along the way;

[R code]

```
library(Boston, package = "MASS")
X = Boston[, 1 : 13]
Y = Boston[, 14]
beta_all = myLasso(X, Y, c(1000000, 100000, 10000, 1000, 100,
10))
matplot(t(t(matrix(rep(1, 13), nrow = 13)) %*% abs(beta_all)),
t(beta_all), type ="l", xlab = "|beta|", ylab = "beta", main =
"solution path of lasso")
legend(0, 10, legend = colnames(Boston)[1:13], col = 1:13, lty
= 1:13)
```