Term work 2(Easy)

```
library(KernelKnn)

data(ionosphere, package = 'KernelKnn')

ionosphere = ionosphere[, -2]

X = scale(ionosphere[, -c(34)])

y = ionosphere[, c(34)]

y = as.numeric(y)

train.idx = sample(1:length(y), round(length(y) * 0.75))

test.idx = setdiff(1:length(y), train.idx)

train = X[train.idx, ]

test = X[test.idx, ]

train.labels = y[train.idx]

test.labels = y[test.idx]

accuracy = function (y_true, preds) {
  out = table(y_true,
              max.col(preds, ties.method = "random"))
  acc = sum(diag(out))/sum(out)
  acc
}

predictions = KernelKnn(train, test, train.labels,
                        k = 5 ,
                        method = 'euclidean',
                        weights_function = NULL,
                        regression = F,
                        Levels = unique(y))
```

```
acc = accuracy(test.labels, predictions)
paste('Accuracy is ', acc)
predictions = KernelKnn(train, test, train.labels,
                    k = 10,
                    method = 'canberra',
                    weights_function = 'epanechnikov',
                    regression = F,
                    Levels = unique(y))
acc = accuracy(test.labels, predictions)
knn = KernelKnnCV(X, y,
                k = 9 ,
                folds = 5,
                method = 'canberra',
                weights_function = 'epanechnikov',
                regression = F,
                Levels = unique(y),
                threads = 5)
acc_cv = unlist(lapply(1:length(knn$preds),
                    function(x) accuracy(y[knn$folds[[x]]],
                                         knn$preds[[x]])))
paste('Accuracy is ', mean(acc_cv))
paste('Accuracy is ', acc)
```