KNN_Classifier

```
library(e1071)
library(class)
library(dplyr)
```

```
##
## Attaching package: 'dplyr'

## The following objects are masked from 'package:stats':
##
##     filter, lag

## The following objects are masked from 'package:base':
##
##     intersect, setdiff, setequal, union
```

```
library(mvtnorm)

#KNN Classifier for the Iris data
distance <- function(a, b){
  sqrt(sum((a-b)^2))
}

iris_knn <- function(testx, trainx, trainy, k){
  n <- nrow(trainx)
  distances <- rep(NA, n)
  for (i in 1:n) {
    distances[i] <- distance(trainx[i, ], testx)
  }
  candidates <- trainy[order(distances)][1:k]
  candidates[max(as.integer(candidates))]
}

iris_knn(test_case_a, training_x, training_y, 5)
```

```
## Error in nrow(trainx): object 'training_x' not found
```

```
iris_knn(test_case_b, training_x, training_y, 5)
```

```
## Error in nrow(trainx): object 'training_x' not found
```

```
iris_knn(test_case_c, training_x, training_y, 5)
```

```
## Error in nrow(trainx): object 'training_x' not found
```

```r
#Checking the Result
knn(train = training_x, cl = training_y, test = test_case_a, k = 5)
```

```
## Error in as.matrix(train): object 'training_x' not found
```

```r
knn(train = training_x, cl = training_y, test = test_case_b, k = 5) # will incorrectly label as virgini
```

```
## Error in as.matrix(train): object 'training_x' not found
```

```r
knn(train = training_x, cl = training_y, test = test_case_c, k = 5)
```

```
## Error in as.matrix(train): object 'training_x' not found
```