TextClassificationSpamVsHamInR Practice Asg

```
> sms_corpus_clean = tm_map(sms_corpus_clean, removeNumbers)
> stopwords()
  [1] "i"           "me"          "my"           "myself"      "we"
  [6] "our"         "ours"        "ourselves"    "you"         "your"
 [11] "yours"       "yourself"    "yourselves"   "he"          "him"
 [16] "his"         "himself"     "she"          "her"         "hers"
 [21] "herself"     "it"          "its"          "itself"      "they"
 [26] "them"        "their"       "theirs"       "themselves"  "what"
 [31] "which"       "who"         "whom"         "this"        "that"
 [36] "these"       "those"       "am"           "is"          "are"
 [41] "was"         "were"        "be"           "been"        "being"
 [46] "have"        "has"         "had"          "having"      "do"
 [51] "does"        "did"         "doing"        "would"       "should"
 [56] "could"       "ought"       "i'm"          "you're"      "he's"
 [61] "she's"       "it's"        "we're"        "they're"     "i've"
 [66] "you've"      "we've"       "they've"      "i'd"         "you'd"
 [71] "he'd"        "she'd"       "we'd"         "they'd"      "i'll"
 [76] "you'll"      "he'll"       "she'll"       "we'll"       "they'll"
 [81] "isn't"       "aren't"      "wasn't"       "weren't"     "hasn't"
 [86] "haven't"     "hadn't"      "doesn't"      "don't"       "didn't"
 [91] "won't"       "wouldn't"    "shan't"       "shouldn't"   "can't"
 [96] "cannot"      "couldn't"    "mustn't"      "let's"       "that's"
[101] "who's"       "what's"      "here's"       "there's"     "when's"
[106] "where's"     "why's"       "how's"        "a"           "an"
[111] "the"         "and"         "but"          "if"          "or"
[116] "because"     "as"          "until"        "while"       "of"
[121] "at"          "by"          "for"          "with"        "about"
[126] "against"     "between"     "into"         "through"     "during"
[131] "before"      "after"       "above"        "below"       "to"
[136] "from"        "up"          "down"         "in"          "out"
[141] "on"          "off"         "over"         "under"       "again"
[146] "further"     "then"        "once"         "here"        "there"
[151] "when"        "where"       "why"          "how"         "all"
[156] "any"         "both"        "each"         "few"         "more"
```

```
> library(gmodels)
> CrossTable(sms_test_pred, sms_test_labels,
+            prop.chisq = FALSE, prop.c = FALSE, prop.r = FALSE,
+            dnn = c('predicted', 'actual'))


   Cell Contents
|-----------------------|
|                     N |
|         N / Table Total |
|-----------------------|


Total Observations in Table:   1390


             | actual
   predicted |      ham |     spam | Row Total |
-------------|----------|----------|-----------|
         ham |     1201 |       30 |      1231 |
             |    0.864 |    0.022 |           |
-------------|----------|----------|-----------|
        spam |        6 |      153 |       159 |
             |    0.004 |    0.110 |           |
-------------|----------|----------|-----------|
Column Total |     1207 |      183 |      1390 |
-------------|----------|----------|-----------|
```

```
> sms_test_pred2 = predict(sms_classifier2, sms_test)
> CrossTable(sms_test_pred2, sms_test_labels,
+            prop.chisq = FALSE, prop.c = FALSE, prop.r = FALSE,
+            dnn = c('predicted', 'actual'))


   Cell Contents
|-----------------------|
|                     N |
|         N / Table Total |
|-----------------------|


Total Observations in Table:  1390


             | actual
   predicted |       ham |      spam | Row Total |
-------------|-----------|-----------|-----------|
         ham |      1189 |        16 |      1205 |
             |     0.855 |     0.012 |           |
-------------|-----------|-----------|-----------|
        spam |        18 |       167 |       185 |
             |     0.013 |     0.120 |           |
-------------|-----------|-----------|-----------|
Column Total |      1207 |       183 |      1390 |
-------------|-----------|-----------|-----------|
```