Data 1: KNN 20news

```
Report File: Neighbors_KNN_20news_report.txt
--------------------------------------------------------------------------------
Classification Report:
                            precision    recall   f1-score    support

             alt.atheism       0.05       0.14      0.07        319
           comp.graphics       0.05       0.13      0.08        389
 comp.os.ms-windows.misc       0.06       0.23      0.10        394
comp.sys.ibm.pc.hardware       0.09       0.09      0.09        392
   comp.sys.mac.hardware       0.07       0.12      0.09        385
          comp.windows.x       0.11       0.02      0.03        395
            misc.forsale       0.17       0.09      0.12        390
               rec.autos       0.06       0.11      0.07        396
         rec.motorcycles       0.14       0.08      0.10        398
      rec.sport.baseball       0.07       0.08      0.07        397
        rec.sport.hockey       0.15       0.06      0.09        399
               sci.crypt       0.07       0.03      0.04        396
         sci.electronics       0.05       0.02      0.03        393
                 sci.med       0.04       0.02      0.02        396
               sci.space       0.15       0.06      0.08        394
  soc.religion.christian       0.14       0.01      0.02        398
      talk.politics.guns       0.05       0.01      0.02        364
   talk.politics.mideast       0.13       0.06      0.09        376
      talk.politics.misc       0.07       0.02      0.03        310
      talk.religion.misc       0.05       0.03      0.04        251

             avg / total       0.09       0.07      0.07       7532


--------------------------------------------------------------------------------
Confusion Matrix:
46  45  63  18  22   2   4  31   8  18  10   4   3   4   5   2   5   9   9  11
47  51  72  26  33   4   5  38  14  30  10   8  12   5   8   2   5   7   7   5
49  61  92  20  36   3  14  32   8  12   8  11   8   8   8   2   4   9   4   5
58  45  81  37  14   1  13  36  12  16   7  11  11   9   7   3   7   9   6   9
48  45  78  19  46   3   7  37   9  27  11   6   7  10   6   3   3   8   6   6
59  40  83  17  29   8   8  40  13  16  12   7  11  10   6   1  10   9   5  11
53  48  72  23  34   4  37  42   8  14   8   3   5  11   7   2   2   9   4   4
47  50  86  23  40   4   7  43   7  24   4  12   8   3   3   8   4   9  11
39  58  81  21  31   2  12  34  30  20   8  11  11   7  13   1   4   3   4   8
46  58  73  19  35   6  12  39  14  30   8   6   9   8   8   1   6   9   2   8
38  57  66  22  33   4  11  57   8  23  25   5   7   9   4   2   4   8   6  10
44  51  81  21  25   4   7  52   9  21  11  11   7   8  10   1   7   9   6  11
56  48  63  19  37   1  12  54  12  24   6  13   8   8   4   2   8   9   2   7
60  47  80  27  29   5  10  45  10  21   4   5  10   6   5   1   4  12   8   7
60  54  82  22  34   3   7  29   6  25   3   7   8   4  22   2   4   7   3  12
54  45  92  21  37   3  12  34  12  17  10   3  13   6   9   5   5  14   2   4
46  55  70  16  40   2   9  32  12  21   4  12   6   4   9   3   5   6   6   6
50  39  62  20  31   6  10  51  10  21   6   9   9   5   7   1   7  24   5   3
54  36  59  13  29   3   9  33   5  22   4   6   5   6   0   0   5   8   7   6
43  31  43  14  23   4  13  18   4  15   4   5   4   6   5   0   4   6   1   8
```
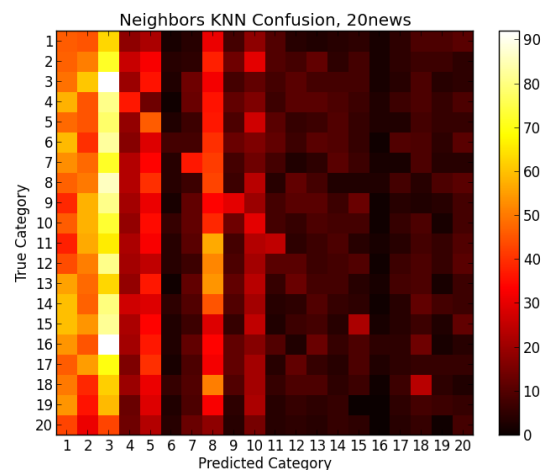

Neighbors KNN Confusion, 20news

Data 2: KNN 20news5 and 20news4

```
Report File: Neighbors_KNN_20news5_report.txt
--------------------------------------------------------------------------------
Classification Report:
             precision    recall  f1-score   support

  computers       0.29      0.37      0.32      1955
 recreation       0.24      0.40      0.30      1590
    science       0.24      0.18      0.21      1579
   politics       0.17      0.08      0.11      1050
   religion       0.13      0.05      0.07       968

avg / total       0.23      0.25      0.23      7142


--------------------------------------------------------------------------------
Confusion Matrix:
720   658   313   153   111
532   633   270    95    60
526   589   283   110    71
390   370   148    87    55
337   356   160    69    46
```

```
Report File: Neighbors_KNN_20news4_report.txt
--------------------------------------------------------------------------------
Classification Report:
                   precision    recall  f1-score   support

     comp.graphics      0.27      0.26      0.27       389
 talk.religion.misc     0.26      0.52      0.35       396
         sci.space      0.31      0.12      0.17       394
         rec.autos      0.10      0.06      0.07       251

       avg / total      0.25      0.26      0.23      1430


--------------------------------------------------------------------------------
Confusion Matrix:
102   208    40    39
110   204    40    42
104   203    46    41
 59   155    23    14
```
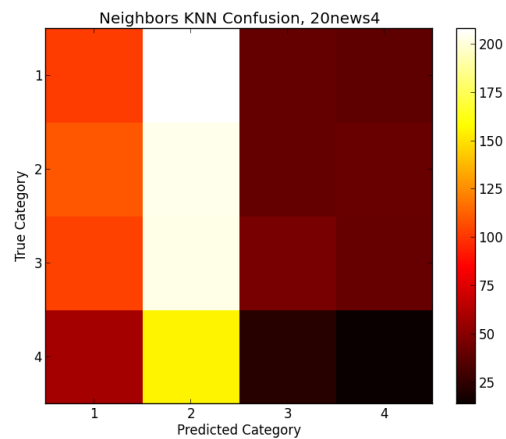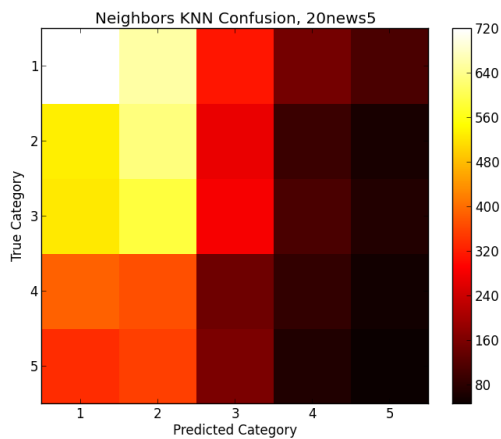

Neighbors KNN Confusion, 20news5

Neighbors KNN Confusion, 20news4

Data 3: KNN 20news, dim=500

```
Report File: Neighbors_KNN_20news_500_report.txt
--------------------------------------------------------------------------------
Classification Report:
                            precision    recall   f1-score    support

              alt.atheism        0.11      0.52       0.18        319
            comp.graphics        0.40      0.58       0.48        389
  comp.os.ms-windows.misc        0.51      0.59       0.55        394
 comp.sys.ibm.pc.hardware        0.44      0.52       0.47        392
    comp.sys.mac.hardware        0.62      0.52       0.57        385
           comp.windows.x        0.72      0.55       0.62        395
             misc.forsale        0.67      0.46       0.55        390
                rec.autos        0.61      0.53       0.57        396
          rec.motorcycles        0.79      0.55       0.64        398
       rec.sport.baseball        0.70      0.69       0.69        397
         rec.sport.hockey        0.89      0.67       0.77        399
                sci.crypt        0.77      0.51       0.61        396
          sci.electronics        0.41      0.25       0.31        393
                  sci.med        0.72      0.46       0.56        396
                sci.space        0.74      0.56       0.64        394
   soc.religion.christian        0.61      0.58       0.59        398
       talk.politics.guns        0.53      0.51       0.52        364
    talk.politics.mideast        0.85      0.54       0.66        376
       talk.politics.misc        0.36      0.24       0.28        310
       talk.religion.misc        0.35      0.16       0.22        251

              avg / total        0.60      0.51       0.54       7532


--------------------------------------------------------------------------------
Confusion Matrix:
167    9    5    7    0    1    3    4    2    3    2    3    2    5   11   51    6    8    9   21
 46  225   27   10    8   23    7    1    0    7    2    3   11    2    8    2    0    2    5    0
 45   40  231   33   14    9    2    1    0    1    0    0    4    1    8    3    1    0    0    1
 29   38   47  203   27    5    6    3    1    2    1    0   21    3    0    2    1    1    0    2
 49   14   21   52  201    4    8    2    2    1    0    4   14    4    5    0    2    0    2    0
 42   48   45   10    7  216    2    2    0    0    0    1   10    4    2    3    0    0    3    0
 44   21   15   39   21    3  180   20    4    3    3    1   21    3    3    0    3    1    4    1
 92    8    6    6    3    5    9  211   23    2    1    2    8    3    2    1    5    1    8    0
 96    5    4    8    3    3    8   32  217    4    0    3    6    0    0    2    4    0    3    0
 64   12    3    2    0    3    8    6    4  273   12    1    3    2    1    2    0    0    1    0
 41   10    1    3    1    0    3    5    3   52  269    1    0    4    3    0    1    1    1    0
 72   23    6   11   10    4    3    5    4    1    1  202   16    2    5    0   18    1   11    1
113   39   20   36   17    8    7   16    5    9    1   12   97    4    6    0    3    0    0    0
113   24    5    7    2    4   14    5    0   12    0    3   12  182    2    3    3    0    4    1
 85   19    4   10    5    2    5    4    2    6    1    6    3    4  221    1    4    0   11    1
 86    6    2    3    2    2    0    3    1    2    1    1    0    1    2  229    0    3   27   27
 77    3    1    9    1    6    2    5    0    3    2    7    6    6    3    6  187    5   23   12
 95    3    4    2    1    2    0    6    3    7    1    5    1    1    1   14   10  203   16    1
 65    6    1   11    1    0    2    9    1    3    4    8    3   20   10    4   79    3   73    7
 94    3    3    2    0    1    1    6    4    0    0    0    0    3    4   55   23    9    2   41
```
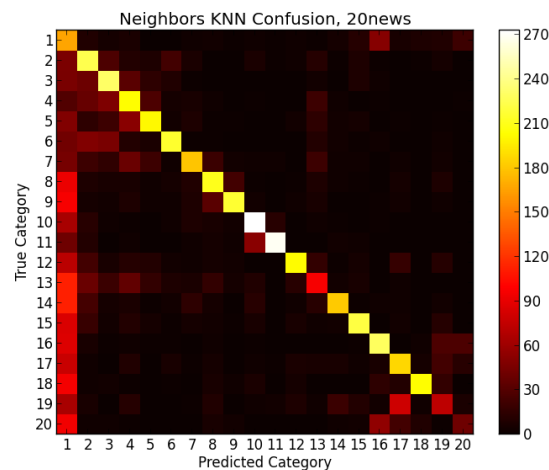

Neighbors KNN Confusion, 20news

Data 4: KNN 20news5 dim=500, 20news4 dim=100

```
Report File: Neighbors_KNN_20news5_500_report.txt
------------------------------------------------------------------------------
Classification Report:
             precision    recall  f1-score   support

   computers      0.74      0.78      0.76      1955
  recreation      0.57      0.85      0.68      1590
     science      0.61      0.50      0.55      1579
    politics      0.72      0.51      0.60      1050
    religion      0.74      0.47      0.58       968

avg / total       0.67      0.65      0.65      7142


------------------------------------------------------------------------------
Confusion Matrix:
1525    242    163      8     17
  89   1359     74     46     22
 324    364    793     62     36
  56    227    149    536     82
  79    213    124     97    455
```
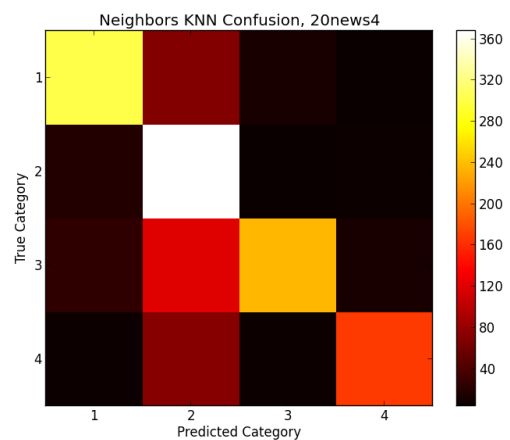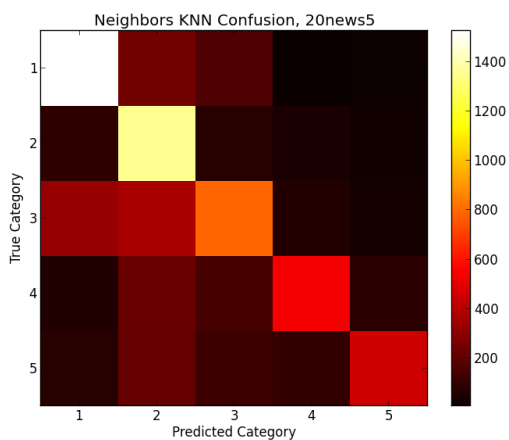
```
Report File: Neighbors_KNN_20news4_100_report.txt
------------------------------------------------------------------------------
Classification Report:
                   precision    recall  f1-score   support

     comp.graphics      0.86      0.78      0.82       389
 talk.religion.misc     0.59      0.93      0.72       396
         sci.space      0.92      0.60      0.73       394
         rec.autos      0.88      0.67      0.76       251

       avg / total      0.80      0.75      0.75      1430


------------------------------------------------------------------------------
Confusion Matrix:
302     70     12      5
 18    368      4      6
 25    120    237     12
  6     71      6    168
```


Neighbors KNN Confusion, 20news5

Neighbors KNN Confusion, 20news4

Data 5: KNN Reuters

```
Report File: Neighbors_KNN_reuters21578-10_report.txt
--------------------------------------------------------------------------------
Classification Report:
              precision    recall  f1-score   support

        earn       0.52      0.82      0.64       789
         acq       0.68      0.08      0.15       472
       crude       0.20      0.15      0.17        82
       trade       0.00      0.00      0.00        72
    money-fx       0.85      0.18      0.30        61
    interest       0.91      0.18      0.29        57
money-supply       0.09      0.62      0.15        32
        ship       0.00      0.00      0.00        32
       sugar       1.00      0.03      0.07        29
      coffee       1.00      0.04      0.08        23

 avg / total       0.55      0.45      0.38      1649


--------------------------------------------------------------------------------
Confusion Matrix:
650   14   27   11    0    0   87    0    0    0
343   40   12    3    0    0   74    0    0    0
 63    1   12    0    0    0    6    0    0    0
 50    0    3    0    0    0   19    0    0    0
 41    1    2    0   11    1    5    0    0    0
 37    1    2    0    2   10    5    0    0    0
 11    1    0    0    0    0   20    0    0    0
 24    0    0    0    0    0    8    0    0    0
 25    0    0    0    0    0    3    0    1    0
 13    1    3    0    0    0    5    0    0    1
```
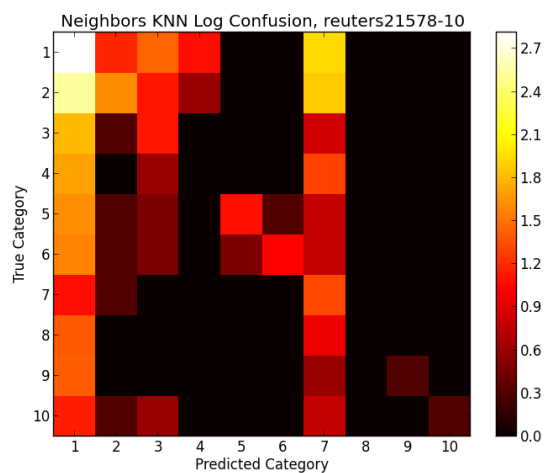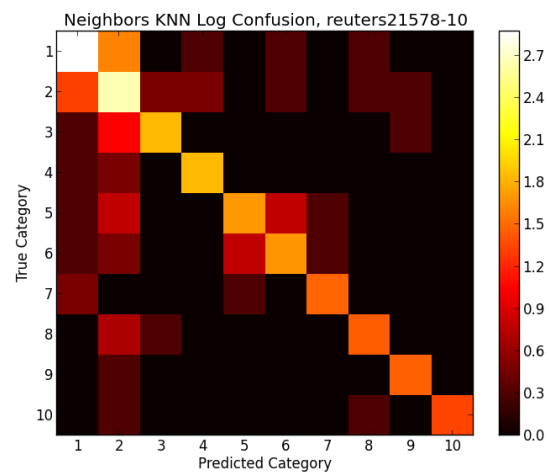

Neighbors KNN Log Confusion, reuters21578-10

Data 6: KNN Reuters, dim=200

```
Report File: Neighbors_KNN_reuters21578-10_200_report.txt
--------------------------------------------------------------------------------
Classification Report:
              precision    recall  f1-score   support

        earn       0.97      0.95      0.96       789
         acq       0.87      0.94      0.91       472
       crude       0.96      0.85      0.90        82
       trade       0.96      0.96      0.96        72
    money-fx       0.89      0.80      0.84        61
    interest       0.87      0.84      0.86        57
money-supply       0.94      0.91      0.92        32
        ship       0.90      0.84      0.87        32
       sugar       0.93      0.97      0.95        29
      coffee       1.00      0.91      0.95        23

 avg / total       0.93      0.93      0.93      1649


--------------------------------------------------------------------------------
Confusion Matrix:
746    40     0     1     0     1     0     1     0     0
 20   445     2     2     0     1     0     1     1     0
  1    10    70     0     0     0     0     0     1     0
  1     2     0    69     0     0     0     0     0     0
  1     5     0     0    49     5     1     0     0     0
  1     2     0     0     5    48     1     0     0     0
  2     0     0     0     1     0    29     0     0     0
  0     4     1     0     0     0     0    27     0     0
  0     1     0     0     0     0     0     0    28     0
  0     1     0     0     0     0     0     1     0    21
```
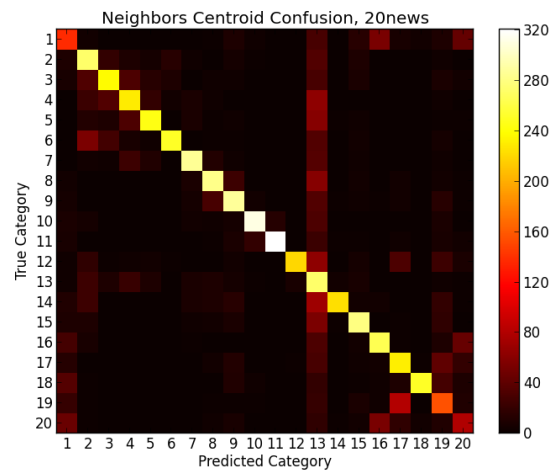

Neighbors KNN Log Confusion, reuters21578-10

Data 7: Nearest Centroid, 20news

```
Report File: Neighbors_Centroid_20news_report.txt
--------------------------------------------------------------------------------
Classification Report:
                          precision    recall  f1-score   support

              alt.atheism       0.39      0.43      0.41       319
            comp.graphics       0.54      0.70      0.61       389
  comp.os.ms-windows.misc       0.68      0.60      0.64       394
 comp.sys.ibm.pc.hardware       0.64      0.59      0.61       392
    comp.sys.mac.hardware       0.78      0.64      0.70       385
           comp.windows.x       0.87      0.64      0.73       395
             misc.forsale       0.82      0.73      0.77       390
                rec.autos       0.75      0.71      0.73       396
          rec.motorcycles       0.69      0.72      0.71       398
       rec.sport.baseball       0.88      0.78      0.83       397
         rec.sport.hockey       0.96      0.80      0.87       399
                sci.crypt       0.94      0.56      0.70       396
          sci.electronics       0.27      0.69      0.39       393
                  sci.med       0.92      0.57      0.70       396
                sci.space       0.75      0.71      0.73       394
   soc.religion.christian       0.68      0.67      0.67       398
       talk.politics.guns       0.58      0.63      0.61       364
    talk.politics.mideast       0.95      0.67      0.78       376
       talk.politics.misc       0.41      0.50      0.45       310
       talk.religion.misc       0.33      0.31      0.32       251

              avg / total       0.71      0.64      0.66      7532


--------------------------------------------------------------------------------
Confusion Matrix:
137    5    0    0    0    1    0    2   10    3    0    1   30    0   14   53    7    4    9   43
  9  273   20    9    6   14    3    0    6    2    0    0   34    0    9    0    0    0    3    1
  7   33  237   32   14   10    0    3    3    1    0    1   30    1    8    0    1    0    8    5
  1   23   35  230   19    4    8    3    0    0    0    1   63    0    1    0    0    0    3    1
  1   12    9   32  245    1    8    2    3    1    1    0   60    2    3    0    1    0    2    2
  0   55   27    7    3  251    1    2    2    1    0    0   34    0    5    0    0    0    6    1
  1    4    3   24   11    1  286   12    3    1    0    1   36    0    3    1    0    0    3    0
  5    1    1    0    0    0    8  283   24    0    0    0   59    0    4    0    4    0    5    2
  6    0    0    1    0    0    6   30  288    4    0    0   35    2    3    2    5    0   14    2
  8    6    0    0    0    1    4    3    6  311   13    0   32    1    1    0    1    1    8    1
  7    1    0    0    0    0    0    2    8   19  321    0   23    2    2    0    3    0    7    4
  3   18    2    3    5    2    1    1    4    1    0  220   63    1    6    0   32    1   25    8
  3   24    9   22   10    1    8   10    6    2    0    7  273    4    7    1    1    0    3    2
 11   25    0    0    0    0    8   10   14    1    0    0   71  224    4    5    1    1   19    2
  9   10    1    0    1    0    3    4    8    1    1    0   54    2  280    0    2    0   18    0
 28    7    1    0    0    0    2    0    1    0    0    0   32    1    5  265    2    0   10   44
 13    1    0    0    0    1    1    4   12    0    0    2   29    0    3    5  231    2   41   19
 36    2    0    0    0    0    1    0   11    3    0    0   19    1    2    3    9  251   28   10
 21    2    0    0    0    1    0    2    2    2    0    0   21    0    8    3   81    0  156   11
 46    2    1    0    0    0    1    3    7    0    0    0   18    2    5   53   18    5   11   79
```


Neighbors Centroid Confusion, 20news

Data 8: Nearest Centroid, 20news5 and 20news4

```
Report File: Neighbors_Centroid_20news5_report.txt
--------------------------------------------------------------------------------
Classification Report:
              precision     recall   f1-score    support

  computers        0.88       0.81       0.85       1955
 recreation        0.73       0.89       0.80       1590
    science        0.71       0.72       0.71       1579
   politics        0.78       0.75       0.77       1050
   religion        0.86       0.68       0.76        968

avg / total        0.79       0.78       0.78       7142


--------------------------------------------------------------------------------
Confusion Matrix:
1590    137    208     13      7
  35   1413     81     43     18
 154    172   1141     88     24
   4    106     91    792     57
  21    112     93     80    662
```
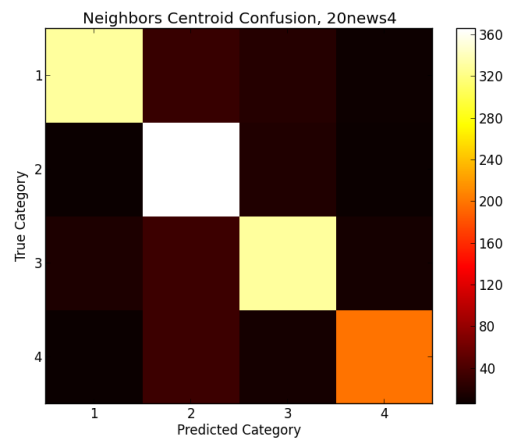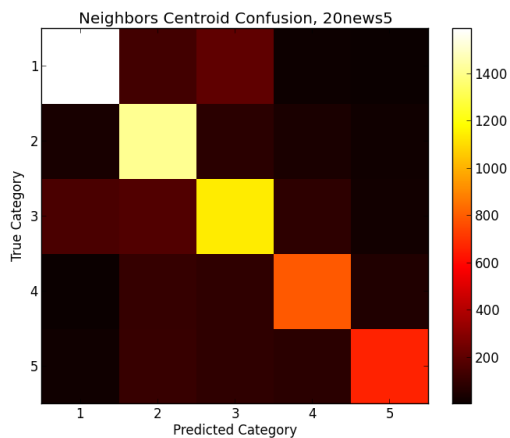
```
Report File: Neighbors_Centroid_20news4_report.txt
--------------------------------------------------------------------------------
Classification Report:
                    precision     recall   f1-score    support

      comp.graphics      0.92       0.85       0.88        389
 talk.religion.misc      0.79       0.92       0.85        396
          sci.space      0.86       0.84       0.85        394
          rec.autos      0.88       0.79       0.83        251

        avg / total      0.86       0.86       0.86       1430


--------------------------------------------------------------------------------
Confusion Matrix:
330     30     21      8
  6    366     18      6
 17     34    330     13
  6     33     13    199
```


Neighbors Centroid Confusion, 20news5

Neighbors Centroid Confusion, 20news4

Data 9: Nearest Centroid, Reuters

```
Report File: Neighbors_Centroid_reuters21578-10_report.txt
--------------------------------------------------------------------------------
Classification Report:
             precision    recall   f1-score    support

        earn       1.00      0.77       0.87        789
         acq       0.71      0.99       0.83        472
       crude       0.95      0.89       0.92         82
       trade       0.96      0.99       0.97         72
    money-fx       0.87      0.89       0.88         61
    interest       0.87      0.79       0.83         57
 money-supply      0.83      0.91       0.87         32
        ship       0.97      0.88       0.92         32
       sugar       0.97      1.00       0.98         29
      coffee       1.00      0.96       0.98         23

 avg / total       0.90      0.87       0.87       1649


--------------------------------------------------------------------------------
Confusion Matrix:
611  174    1    0    0    2    1    0    0    0
  1  466    2    2    0    0    0    0    1    0
  0    6   73    1    1    0    0    1    0    0
  0    0    1   71    0    0    0    0    0    0
  0    2    0    0   54    2    3    0    0    0
  0    3    0    0    7   45    2    0    0    0
  0    0    0    0    0    3   29    0    0    0
  0    4    0    0    0    0    0   28    0    0
  0    0    0    0    0    0    0    0   29    0
  0    1    0    0    0    0    0    0    0   22
```


Neighbors Centroid Log Confusion, reuters21578-10