After running the manual, three metrics and the statistic test results for each dataset will be directly displayed in the terminal.

Baseline:

```
C:\Users\TlANS\Desktop\ISE作业\lab1>python br_classification.py
[nltk_data] Downloading package stopwords to
[nltk_data]     C:\Users\TlANS\AppData\Roaming\nltk_data...
[nltk_data]   Package stopwords is already up-to-date!
=== Naive Bayes + TF-IDF Results ===
Average Precision:      0.6120
Average Recall:         0.7575
Average F1 score:       0.5624
=== Naive Bayes + TF-IDF Results ===
Average Precision:      0.6373
Average Recall:         0.7112
Average F1 score:       0.5388
=== Naive Bayes + TF-IDF Results ===
Average Precision:      0.6300
Average Recall:         0.6936
Average F1 score:       0.5412
=== Naive Bayes + TF-IDF Results ===
Average Precision:      0.6005
Average Recall:         0.7364
Average F1 score:       0.5159
=== Naive Bayes + TF-IDF Results ===
Average Precision:      0.5698
Average Recall:         0.6668
Average F1 score:       0.4611
```

Scheme 1:

Scheme 2:



```
[nltk_data]      C:\Users\TLANS\AppData\Roaming\nltk_data...
[nltk_data]    Package stopwords is already up-to-date!
=== SVM + TF-IDF Experiment Results ===
Project:              pytorch
Average Precision:       0.6804
Average Recall:          0.7547
Average F1 score:        0.7017

--- Statistical Test Results ---
Precision: t-statistic = 14.6478, p-value = 0.0000
Recall:    t-statistic = -0.3366, p-value = 0.7388
F1 Score:  t-statistic = 22.3492, p-value = 0.0000
=== SVM + TF-IDF Experiment Results ===
Project:              tensorflow
Average Precision:       0.7647
Average Recall:          0.8305
Average F1 score:        0.7873

--- Statistical Test Results ---
Precision: t-statistic = 41.9981, p-value = 0.0000
Recall:    t-statistic = 22.5097, p-value = 0.0000
F1 Score:  t-statistic = 54.6136, p-value = 0.0000
=== SVM + TF-IDF Experiment Results ===
Project:              keras
Average Precision:       0.7862
Average Recall:          0.8028
Average F1 score:        0.7920

--- Statistical Test Results ---
Precision: t-statistic = 24.4758, p-value = 0.0000
Recall:    t-statistic = 14.3188, p-value = 0.0000
F1 Score:  t-statistic = 34.7912, p-value = 0.0000
=== SVM + TF-IDF Experiment Results ===
Project:              incubator-mxnet
Average Precision:       0.7511
Average Recall:          0.7837
Average F1 score:        0.7641

--- Statistical Test Results ---
Precision: t-statistic = 22.7974, p-value = 0.0000
Recall:    t-statistic = 4.5483, p-value = 0.0001
F1 Score:  t-statistic = 26.7978, p-value = 0.0000
=== SVM + TF-IDF Experiment Results ===
Project:              caffe
Average Precision:       0.6612
Average Recall:          0.6162
Average F1 score:        0.6207

--- Statistical Test Results ---
Precision: t-statistic = 4.6627, p-value = 0.0001
Recall:    t-statistic = -3.6875, p-value = 0.0009
F1 Score:  t-statistic = 10.6798, p-value = 0.0000
```