

Byte file structure

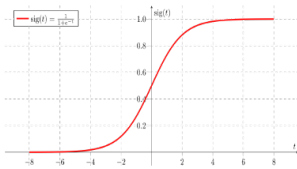
.bytes file

```
00401000 00 00 80 40 40 28 00 1C 02 42 00 C4 00 20 04 20
00401010 00 00 20 09 2A 02 00 00 00 00 8E 10 41 0A 21 01
00401020 40 00 02 01 00 90 21 00 32 40 00 1C 01 40 C8 18
00401030 40 82 02 63 20 00 00 09 10 01 02 21 00 82 00 04
00401040 82 20 08 83 00 08 00 00 00 02 00 60 80 10 80
00401050 18 00 00 20 A9 00 00 00 04 04 78 01 02 70 90
00401060 00 02 00 08 20 12 00 00 00 40 10 00 80 00 40 19
```

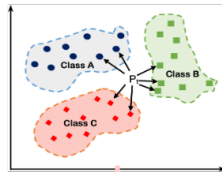
Uni-gram BOW is created using the frequency of each Keyword (256 hexadecimal keywords + 1 feature as file size) from each byte file

| | ID | 0 | 1 | 2 | 3 | 4 | 5 | 6 | 7 | 8 | ... | f9 | fa | fb | fc | fd | fe | ff | ?? | Class | size |
|---|----------------------|--------|------|------|------|------|------|------|------|------|-----|------|------|------|------|------|-------|-------|-------|-------|----------|
| 0 | 01azq4HnC7m8UpocGv5 | 601905 | 3905 | 2816 | 3832 | 3345 | 3242 | 3650 | 3201 | 2895 | ... | 3101 | 3211 | 3097 | 2758 | 3099 | 2759 | 5753 | 1824 | 9 | 4.234883 |
| 1 | 01IsoSMh5ggyDYTHCB | 38755 | 8337 | 7249 | 7186 | 8663 | 6844 | 8420 | 7589 | 9291 | ... | 439 | 281 | 302 | 7639 | 518 | 17001 | 54902 | 8588 | 2 | 5.538818 |
| 2 | 01jnpXSAIgw6aPeDrU | 93506 | 9542 | 2588 | 2438 | 8625 | 9330 | 9007 | 2342 | 9107 | ... | 2242 | 2885 | 2863 | 2471 | 2786 | 2680 | 46144 | 468 | 9 | 3.887939 |
| 3 | 01kcPWA9K2B0nQeS5Rju | 21091 | 1213 | 726 | 817 | 1257 | 625 | 550 | 523 | 1078 | ... | 485 | 462 | 518 | 1133 | 471 | 761 | 7980 | 13940 | 1 | 0.574219 |
| 4 | 01SuzwMUEXgK7ABdQbl | 19784 | 710 | 302 | 433 | 559 | 410 | 262 | 249 | 422 | ... | 350 | 209 | 239 | 653 | 221 | 242 | 2199 | 9008 | 8 | 0.370850 |

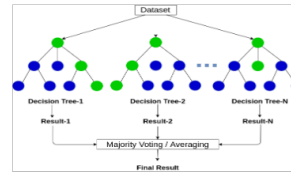
Logistic Regression



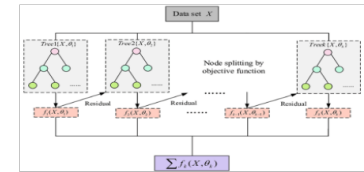
K-Nearest Neighbour



Random Forest



XgBoost (GBDT)



| Model | Train Log Loss | CV Log Loss | Test Log Loss | Number of Misclassified Points |
|--------------------------|----------------------|---------------------|---------------------|--------------------------------|
| Random Model | - | 2.4765227422803386 | 2.5086309644540004 | 88.9604415823367 |
| K Nearest Neighbour | 0.13309130472155042 | 0.2089185330714807 | 0.20041775276335702 | 5.105795768169273 |
| Logistic Regression | 0.5161568454325155 | 0.5378658285030614 | 0.5287814318994476 | 12.051517939282428 |
| Random Forest Classifier | 0.028706691980921458 | 0.08498094708786469 | 0.06130664008293945 | 1.3339466421343145 |
| XgBoost Classification | 0.023248932222341635 | 0.0697311485102128 | 0.08183939406086423 | 0.8279668813247469 |