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| **Discrete Mathematics** | Section | 02 |
| Student number | 22000646 |
| **HW4 – Spam filter** | Name | Jeon, Somyeong |

*If your explanation is less informative and insufficient, then you may not get any points.*

*Also, you should provide discussion, otherwise you will get penalty.*

* General information

|  |  |
| --- | --- |
| Item | Your answer |
| The number of lines in your code. |  |
| The number of functions in your code. |  |

* Functions

|  |  |
| --- | --- |
| Function name | Function Description |
|  |  |
|  |  |
|  |  |
|  |  |
|  |  |
|  |  |

* Screenshot of your program running
* Results
  + Probability and predicted label (spam or non-spam) for different threshold (T) (0.6, 0.7, 0.8, 0.9 and 0.95)

|  |  |  |  |  |  |  |  |  |  |  |  |
| --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- |
| num  True | True Label | T = 0.6 | | T = 0.7 | | T = 0.8 | | T = 0.9 | | T = 0.95 | |
|  | predicted  label |  | predicted  label |  | predicted  label |  | predicted  label |  | predicted  label |
| s01 | Spam |  |  |  |  |  |  |  |  |  |  |
| s02 | Spam |  |  |  |  |  |  |  |  |  |  |
| s03 | Spam |  |  |  |  |  |  |  |  |  |  |
| s04 | Spam |  |  |  |  |  |  |  |  |  |  |
| s05 | Spam |  |  |  |  |  |  |  |  |  |  |
| s06 | Spam |  |  |  |  |  |  |  |  |  |  |
| s07 | Spam |  |  |  |  |  |  |  |  |  |  |
| s08 | Spam |  |  |  |  |  |  |  |  |  |  |
| s09 | Spam |  |  |  |  |  |  |  |  |  |  |
| s10 | Spam |  |  |  |  |  |  |  |  |  |  |
| s11 | Spam |  |  |  |  |  |  |  |  |  |  |
| s12 | Spam |  |  |  |  |  |  |  |  |  |  |
| s13 | Spam |  |  |  |  |  |  |  |  |  |  |
| s14 | Spam |  |  |  |  |  |  |  |  |  |  |
| s15 | Spam |  |  |  |  |  |  |  |  |  |  |
| s16 | Spam |  |  |  |  |  |  |  |  |  |  |
| s17 | Spam |  |  |  |  |  |  |  |  |  |  |
| s18 | Spam |  |  |  |  |  |  |  |  |  |  |
| s19 | Spam |  |  |  |  |  |  |  |  |  |  |
| s20 | Spam |  |  |  |  |  |  |  |  |  |  |
| h01 | Non-spam |  |  |  |  |  |  |  |  |  |  |
| h02 | Non-spam |  |  |  |  |  |  |  |  |  |  |
| h03 | Non-spam |  |  |  |  |  |  |  |  |  |  |
| h04 | Non-spam |  |  |  |  |  |  |  |  |  |  |
| h05 | Non-spam |  |  |  |  |  |  |  |  |  |  |
| h06 | Non-spam |  |  |  |  |  |  |  |  |  |  |
| h07 | Non-spam |  |  |  |  |  |  |  |  |  |  |
| h08 | Non-spam |  |  |  |  |  |  |  |  |  |  |
| h09 | Non-spam |  |  |  |  |  |  |  |  |  |  |
| h10 | Non-spam |  |  |  |  |  |  |  |  |  |  |
| h11 | Non-spam |  |  |  |  |  |  |  |  |  |  |
| h12 | Non-spam |  |  |  |  |  |  |  |  |  |  |
| h13 | Non-spam |  |  |  |  |  |  |  |  |  |  |
| h14 | Non-spam |  |  |  |  |  |  |  |  |  |  |
| h15 | Non-spam |  |  |  |  |  |  |  |  |  |  |
| h16 | Non-spam |  |  |  |  |  |  |  |  |  |  |
| h17 | Non-spam |  |  |  |  |  |  |  |  |  |  |
| h18 | Non-spam |  |  |  |  |  |  |  |  |  |  |
| h19 | Non-spam |  |  |  |  |  |  |  |  |  |  |
| h20 | Non-spam |  |  |  |  |  |  |  |  |  |  |
| Accuracy (%) | |  | |  | |  | |  | |  | |

※ Accuracy is calculated from the following equation.

* Discussion (your interpretation of the results and possible strategy to improve the algorithm)

□ Codes

// Put code here, and you should also submit your original executable C code.

// If C code does not run, then No point will be given.