Create a **Doubly Linked List with sentinel** which has in its nodes a simple integer value.

The "input.dat" file (find it in the same directory as this file) contains a list of operations which should be executed by your program.

Instructions list:

* AF ‘x’ = add the integer ‘x’ at the front of the list (**A**dd **F**irst)
* AL ‘x’ = add the integer ‘x’ at the end of the list (**A**dd **L**ast)
* DF = delete first element of the list
* DL = delete last element of the list
* DOOM\_THE\_LIST = well, basically removes all the elements of the list.
* DE ‘x’ = attempt to delete element ‘x’ from the list – does nothing if no such element
* PRINT\_ALL = print (append) the whole contents of the list to the file “output.dat”
* PRINT\_F ‘x’ = print (append) the first ‘x’ values of the list to the file “output.dat”
  + If x > number of elements in the list, all elements are printed
* PRINT\_L ‘x’ = print (append) the last ‘x’ values of the list to the file “output.dat”
  + If x > number of elements in the list, all elements are printed

Example of input (line by line) and output (contents of list)

|  |  |  |
| --- | --- | --- |
| *Initially (no action yet)* | [] (empty list) | Contents of ***output.dat*** |
| AF 5 | [5] |  |
| AF 6 | [6 5] |  |
| AF 21 | [21 6 5] |  |
| AL 12 | [21 6 5 12] |  |
| DF | [6 5 12] |  |
| DL | [6 5] |  |
| DE 3 | [6 5] |  |
| DE 6 | [5] |  |
| AF 2 | [2 5] |  |
| AL 200 | [2 5 200] |  |
| PRINT\_ALL | [2 5 200] | 2 5 200 |
| AF 1 | [1 2 5 200] | 2 5 200 |
| PRINT\_F 2 | [1 2 5 200] | 2 5 200  (continued)  1 2 |
| PRINT\_L 3 | [1 2 5 200] | 2 5 200  1 2  2 5 200 |
| DOOM\_THE\_LIST | [] | 2 5 200  1 2  2 5 200 |
| DL | [] | 2 5 200  1 2  2 5 200 |
| AF 42 | [42] | 2 5 200  1 2  2 5 200 |
| AL 24 | [42 24] | 2 5 200  1 2  2 5 200 |
| AF 9 | [9 42 24] | 2 5 200  1 2  2 5 200 |
| PRINT\_ALL | [9 42 24] | 2 5 200  1 2  2 5 200  9 42 24 |
| PRINT\_L 2 | [9 42 24] | 2 5 200  1 2  2 5 200  9 42 24  42 24 |

* Commit your changes to GIT
* Push the changes