Debugging Challenge

by the Leeds University Team

The Working Program

You are given a working compiled program which has two classes: HandleFile and MainApplication. These classes form a program that allows users to log in and then leave messages for each other, or read their own messages. (This should all become clear when you run the program, by executing the MainApplication class.)

Below is some information on how this program works.

The messages are kept in the file in a particular way: the name of the user that the message is addressed to appears on the first line and the message content appears on the following line. Please note that names of senders are not recorded in any special way. If, for example, we have four messages:

- To John: Hello, how are you? Steve.
- To Matt: What did you do yesterday? Peter.
- To Nick: Are you going to program today? Mike.
- To Martin: I just finished debugging the program. James.

Then the contents of the file will appear as follows:

```
John
Hello, how are you? Steve.
Matt
What did you do yesterday? Peter.
Nick
Are you going to program today? Mike.
Martin
I just finished debugging the program. James.
```

If the message the user entered contains newline characters, the program has to remove them before writing it to the file to keep the structure consistent.

After the program starts, the old contents of the file must not be removed! The program should append data to the existing file when recording new messages.

Once read from the file, messages are displayed in the console window (please note: no null values are displayed).

Your Task

You are given two Java source files containing the two classes `HandleFile` and `MainApplication`. The entry point of the program is in `MainApplication`. The classes are commented to make it easier for you to understand the purpose of the code segments. The classes are filled with bugs so they will not perform as expected. Your task is to fix as many bugs as you can, as quickly as you can and by changing as little code as possible, in order to make the program run and perform all the tasks described above. You should debug code rather than rewrite the program, although you will need to write a few lines of code to make the program perform message filtering.

You may find the standard Java API documentation to be helpful, so a copy of this is provided in addition to the source code.

Your main objectives are:
- to import appropriate modules and fix compile time errors
- to write to the file properly, keeping structure consistent as described above
- to display the JFrame properly, so all elements are seen at once
- to display the contents of the file in the console window properly (so that only actual messages are displayed)
- to filter the messages properly, so only actual messages are displayed
- to not remove or overwrite the contents of the file (just append to it)
- to record every message in the file immediately after it has been sent
- to get as close as possible to the given working program

Good Luck!