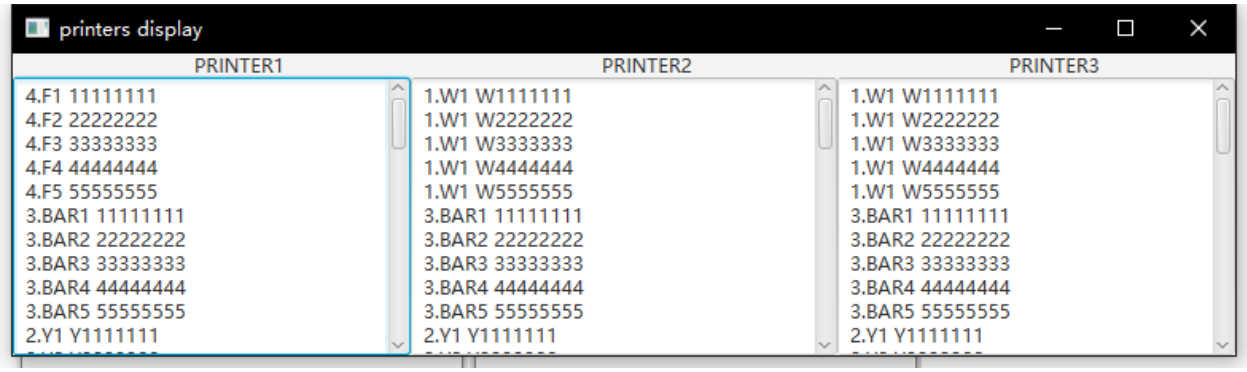
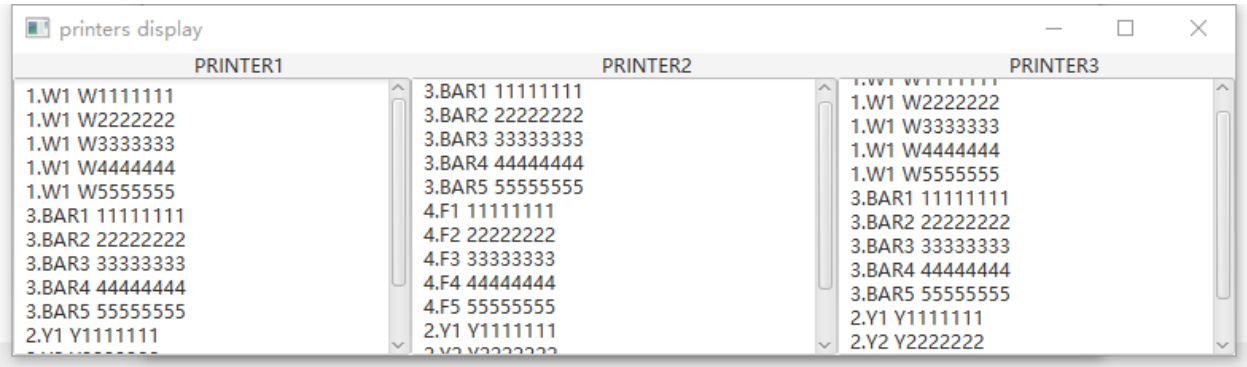
1. I separate 8 java files. In “myGUI.java”, I created 3 classes for disks, users and printers UI. The UserThread.java includes class UserThread, and it uses FileInfo in FileInfo.java, PrintJobThread from PrintJobThread.java and Disk from Disk.java. The Printer class is only connected with PrintJobThread since the printer only knows what it needs to print. In the main.java, I creates two ResourceManage objects from ResourceManager.java, 4 Users, 2 Disks, and 3 Printers, and finish all GUI setup.

2. By using ResourceManager, UserThread and PrintJobThread can wait(), and will be notify() when a disk or a printer is released.

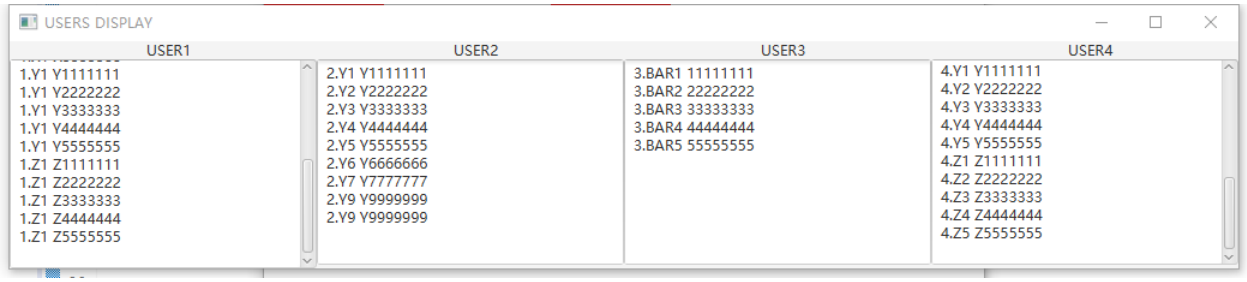
3. All synchronized blocks synchronized on the same object can only have one executing thread at one time. Other threads are blocked until the thread inside the synchronized block exits the block.

In the screenshots above, the left shows both disks is been reading, the right shows only disk1 is being reading. The difference of length for each disks above shows that the disks are reading. The length means the “storage” used.





Above are the printer display. Three printers are working at the same time.



Above is the user display. It shows information that every users is saving to a disk.