344-715 Homework 4

Lecturer: Dr. Simina Fluture

Student: Yuqian Zhang

1. After run the posted programs, I got the following result:

Starts with:

Pipe setup

Object creation

Thread execution

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And ends with:

Sender Sent: nder

Receiver reads: nderÿ

1. The ConnectionManager creates two pipes for Receiver and Sender.

One pipe is from Receiver to Sender, the other one is from Sender to Receiver.

And they are connecting to each other.

1. ConnectionManager creates Receiver and Sender with pipes and starts them.
2. Receiver creates a message and writes the message as an object to pipe.
3. Sender reads the Object from pipe and prints it out.
4. Receiver writes number 10 to pipe.
5. Sender reads number 10 from pipe and use 10 as reading character length for each time.
6. Sender reads content from file Sender.java and write them to pipe. Each time it reads and sends 10 characters. But if ( next == '\r' && next == '\n' ), it will stop reading next and send out accumulated characters right away.
7. Receiver received the message from pipe and prints it out.
8. Repeats steps 5 t 8 until Sender reads -1 the end character of the file and sends it to pipe.
9. Sender exits;
10. Receiver reads -1 the end character of the file from pipe and prints it out.
11. Receiver reads 255 the end character of the pipe from pipe and exits.

During the receiving message, threads are blocked by is.read() function until they read any byte from pipes. The read() functions will throw IOException if the pipe is interrupted or closed abnormally.