Feedback received:

The most notable feedback I received was as following:

- Had not yet provided testing
- Mechanism for the CS sending a heartbeat was every 3 seconds instead of every 12 seconds
- Fault tolerance (replicating feed to file) was set to a timer on the AS
- Could implement XML parsing

Improvements I have made based on this feedback:

I have now provided 10 test scripts which cover a wide range of test conditions and demonstrate all functionality required by the provided assignment spec. Along with the test scripts, I have provided all expected output files for each test script and a range of sample input files that should accurately represent all realistic put() requests.

The reason for my CS sending heartbeats every 3 seconds was that it supplied a more accurate timestamp to the AS. Because my heartbeat mechanism worked by comparing the current system time of the AS to a timestamp provided by the CS and determining if that discrepancy was greater than 12 seconds (AS.CurrentTime - CS.timestamp > 12), I found that when sending timestamps every 12 seconds from CS to AS, there was a great a deal of dilation between the last timestamp and the new timestamp. This would cause the AS to delete entries even if a CS had been sending timestamps every 12 seconds. Hence, I shortened the time for the CS to send heartbeats, until I found a time that seemed to allow the AS to accurately judge if a CS.timestamp was >12 seconds older than its current time.
The CS being set to send heartbeats every 3 seconds shouldn't affect the AS' function of deleting entries that are >12 seconds old and without a heartbeat in the recent 12 seconds. This is because so long as the CS is connected and sends heartbeats every X seconds, the entries will not be deleted, however if the CS is terminated, when the AS determines the last timestamp to be >12 seconds ago when compared with the systems current time, then it will delete the entries.

For fault tolerance, I have kept saving the feed to a file on a timer, however I have greatly reduced the timer so that the feed is being replicated almost constantly. I tried to have a thread just continuously save to a file, but without a subtle pause between each save to file execution, it was hard to control the behavior of the file. I did however, change my AS' heartbeat checking mechanism to be on a thread instead of a timer. This was so that it would more accurately determine if a heartbeat was sent >12 seconds ago.

I decided not to implement XML parsing as I was trying to learn more about string manipulation and using regex. I believe my text parsing solution which transforms the input file to a String and provides a clean and readable output for the client, using regex and various String methods worked well.