CS370: OPERATING SYSTEMS

HELP SESSION 5 [HW5]
Assignment Review

- Bounded Buffer
- Producer
- Consumer
- Requirements
- Restrictions
- Submission
Bounded Buffer

- FIFO Buffer
- Size limited to 1000
Producer

- Adds the randomly generated data to the buffer.
- Should send 1,000,000 items
- If the buffer is full, wait for the consumer to consume at least one item.
- Random Data Generation: Use `java.util.Random`
  ```java
  Random random = new Random();
  Double bufferElement = random.nextDouble() * 100.0;
  ```
- For every 100,000 items produced, it should print the cumulative value of the produced items.
Consumer

- Consumes elements from Buffer in the same order in which they were produced.
- If Buffer is empty, waits for the Producer to produce at least one item.
- For every 100,000 values consumed, it should print the cumulative sum of consumed items.
Requirements

- Should not run out of Memory.
- Consumer should consume items in the order they are produced.
- No Deadlocks.
- Cumulative sum of N elements produced by producer should be equal to the cumulative sum of N elements consumed by the consumer.
Restrictions

- Should use a Circular Buffer of size 1000. Otherwise no points would be granted.
- Do not use Thread.sleep(). Only use wait() and notify() as specified in the lectures.
- Do not use any classes from java.util.concurrent package.
- Do not use any external libraries.
Submission

• All the java files related to the assignment.
• Readme.txt file.
• Makefile that performs make clean and make all.
• Name of the class used should be ProducerConsumer.
• Tar file should be named as:
  <LastName>_<FirstName>_HW5.tar