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| **Name(s):** Marsland, Maryn (100854916) | **Final Mark: 75/100** |

**Correctness – 56/80**

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| **Component** | | **Grade** | **Comments** |
| **Part A**  **/70** | Get input/output filename from user — **5 marks** | **5** |  |
| Allocate and attach shared memory— **5 marks**   * struct definition | **5** |  |
| Create and initialize semaphores— **5 marks** | **3** | * Need to check for error when using semctl() * Need to check if semget() fails * Only need to initialize semaphores once |
| Read data from file— **5 marks** | **3** | * Need to check if read() fails |
| Write to shared memory— **10 marks**   * Split data into blocks of 128 bytes to fit shared memory | **4** | * Only need to read from file in blocks of BUFSIZ (no need to add BytesWritten) * Need to ensure that index into shared buffers goes back to 0 when you reach 99 (i.e. circular buffer) (-5 marks) |
| Read from shared memory and write to output file— **10 marks**   * Checking if bytes written is equal to count value in shared memory | **10** |  |
| Use of semaphores to synchronize processes and access critical section— **10 marks** | **9** | * Move write() outside critical section (CS) to reduce time spent in CS |
| System output— **5 marks**   * Producer: Printing number of bytes written * Printing total number of bytes written/read at the end | **5** |  |
| Stopping condition— **10 marks**   * How do producer and consumer know when to exit? | **10** |  |
|  | Releasing system resources — **5 marks**   * Release and detach shared memory. * Release semaphores * Close file | **2** | Need to remove semaphores and shared memory |
| **Part B**  **/10** | Explanation of whether or not Semaphore S can be removed with one consumer and one producer. | **0** | Missing |

**Documentation & Style – 19/20**

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| **Component** | **Grade** | **Comments** |
| A README file describing how to compile and run your program**—**  **5 marks** | **5** |  |
| Comments in code **— 5 marks** | **5** |  |
| Program Structure**—** **5 marks** | **4** | Can use a single semaphore set to minimize system calls for semaphore creation and initialization. |
| Style and Readability**—** **5 marks** | **5** |  |

**Bonus (Performance Evaluation) – --/20**

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| **Component** | **Grade** | **Comments** |
| Effect of number of buffers**— 5 marks** |  |  |
| Effect of buffer size **—5 marks** |  |  |
| Effect of file size**—** **5 marks** |  |  |
| Effect of Semaphore S**—** **5 marks** |  |  |