Report – Assignment 2

1. Does your program output any garbage? If yes, why?

- Yes, the program does outputs garbage value. Garbage value is in the form of jumbled letters; those between characters in the print statements for the consumer, the print statements for the producer and sometimes with the terminal sub-routine.
- Example:

ConsumPed : 11r
Consuomed : 1d0
Consuumed : c9
Conseumed : d8
Cons umed : :7
Cons umed : 16
5ons3umed :

- The consumer is executed at a later step and is relatively slower than producer. Both programs are not synchronized. After one process cycle, consumer and producer alternately try to print the corresponding produced/consumed value. Hence, the characters from the print statements are jumbled in the output appearing as garbage

2. Are all the produced values getting consumed? Check your program for a small count like 20.

- No, not values produced are consumed.
- The reason for inconsistency is, as producer and consumer are not synchronized, they read and modify the same variable at the same time (critical section) thereby causing a conflict.

3. Functions in the project –

producer –

Reads and increments value of shared variable ***n***. Prints the newly produced value. It takes variable ***count*** as an input

consumer –

Reads and decrements value of shared variable ***n***. Prints consumed value. It takes variable ***count*** as an input

prodcons.h –

This is a header file which has the declarations of producer and consumer functions and *extern* of the variable shared between the process. It is included as an header in producer and consumer methods.

shellcmd xsh_prodcons.c –

Implements the functionality of *prodcons* command handling the following cases;

1. No arguments are provided

It uses the default value of count as 2000 to producer and consumer

2. One argument is provided

If the argument is --help, then it displays help manual for the command, else, it validates the argument to contain only digit and converts the string to int (*atoi* implementation) assigning it to count. It throws an error if there are non-digit in the argument

3. More than one argument is provided

It throws an error for too many arguments passed.

4. Collaborative efforts!

Anuj Bhandar (*anujbhan*) –

1. Implementation of xsh_prodcons.c
2. Conversion of string argument to int
3. Validations of argument and test cases
4. Changes in makefile to include apps

Chitesh Tewani (*ctewani*) –

1. Implementation of producer
2. Implementation of consumer
3. Cumulating findings in a report