Assignment 4

Exercise 1: Write a multithreaded program that creates three threads. First thread will display 'One' ten times and second thread will display 'Two' ten times and the third thread will display 'Three' ten times. Use appropriate semaphores to synchronize the output in sequence:

One
Two
Three
One
Two
Three
…
…
…

Exercise 2: Write a program to demonstrate producer consumer problem using multithreading. The main program will create single Producer and multiple consumers (3 for example). Producer will produce items fixed number of times (say 5), each time producer will produce ten items (integer) in a counter. Each consumer will consume one item from counter at a time. Need to synchronize these threads in a manner such that if there is no item produced (counter=0) the consumer threads will wait for items to be produced and at a time only one thread will consume the item. Similarly, the producer will produce next set of items once all the previous items gets consumed.