

Write a class `ManageStackAccess` that has a stack object of size 6 as its property. The class allows only one thread to read (pop) from and write (push) to the stack at one time. If the stack is empty, a thread wishes to read from the stack has to wait until it is not empty. If the stack is full, a thread wishes to write to the stack has to wait until it is not full. [Hint: use lock condition and its methods to accomplish this]

Then, write a driver class with a thread pool of 3. The driver will run 5 threads – 3 threads to read from the stack (in an instance of the `ManageStackAccess` class) every 50 ms for 5 times and 2 threads to write to the stack an arbitrary number between 0 and 99 every 20ms for 10 times.