PROGRAMMING TOOLS LAB ASSIGNMENT

Week # 7

1.(a)Write a program to simulate deposit/withdraw activities on a banking account: Initialize the beginning balance (global variable) to 1 million, withdraw 600 thousands, and then deposit 500 thousands. Create two Posix threads in main(), which call the withdraw and the deposit functions respectively. Both withdraw and deposit functions have one parameter, which represent the amount to withdraw or deposit. You can create these two threads in any order to perform withdraw and deposit action. However, before you create the second thread, use pthread_join() to wait for the first thread to terminate. Finally print out the ending balance.

(b)Move the calls to pthread_join() function after the creation of both pthreads. Run the program several times. Do you see different result?

(d) Use pthread-mutex_lock() and pthread-mutex_unlock() functions to ensure mutual exclusion between the two pthreads. Check the ending balance now.

2. The Program should demonstrates the use of several Pthread condition variable (pthread_mutex_t, pthread_cond_t) routines. The main routine creates three threads. Two of the threads perform work and update a varible "race".The first thread add 3 in the “race” and second thread substract 1 from the “race”. The third thread waits until the count variable reaches 100.