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Assignment 2 Write Up

Project Description:

In this assignment two threads and two semaphores were to be used to simulate a see saw going up and down with Fred and Wilma on the seesaw who are going up and down until they reach a maximum height, Wilma pushes off the see saw with more momentum than Fred.

Project Solution & Discussion:

Two pthreads were created and later on joined for Wilma and Fred. Mutex locks were utilized to function as binary semaphores. Wilma and Fred have their own mutex locks in which in each of their threads are set to lock and unlock (acquire and release) so that they can take turns going up and down the seesaw. Whether or not it is Fred or Wilma's turn is dependent on whether on Fred's height so while loop is implemented to make sure that Fred's height doesn't go over 7. When it is Fred's turn Fred's height is incremented in this loop by 1, and Wilma's is decremented by 1, and when it is Wilma's turn her height is incremented by 1.5, Fred's is decreased by 1.5. The mutex locks for Fred and Wilma are set to lock and unlock so that the threads can continue but take turns running. So one of the mutexes are locked while the other is unlocked so it can go up and then set to lock and then the other mutex unlocked so it can have it's opportunity to go up. After ten times going up and down the threads stop and the program ends. This is kept track by individual while loops in fred and wilma's and a counter keeps track of how many times to keep track they go up and down.