Project 2

CSCE 311

Powell Fendley

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First, arrays of Generic Lists were created to hold active and expired threads. These arrays are organized from priorities of 0-9. Next I created a method that would create threads to add to the ready queue and be completed. This method checked to make sure that the ready queue didn’t already have the maximum number of threads. In addition, this method sets thread priority and calls the dispatcher every time it finishes. Secondly, I created a do\_kill method. This method kills a thread and removes it from the ready queue if it is running. This also cancels all pending IO calls for the thread as well as gives up any resources the thread may have had. This also will kill the task if the task has no threads left. Next, my do\_suspend method will suspend a thread to a waiting state if it is running. This also suspends it further if the thread was already waiting. This is the area of issue I am having that will be discussed later. Do\_resume is the next method. It decrements a methods waiting status and sets it to ready if it was at waiting0. It also checks the priority of the thread to see if it is at 0 and if it is not it is decremented. It is placed into the appropriate queue of expired array. Do\_dispatch is the final method I made. This method sets a thread to be dispatched and scheduled. It has an error call for if the PTBR returns a null thread. It also sets the threads status to threadrunning when it puts it out for the dispatch. In addition, it checks if the HTimer is less than one, which would imply the thread finished its quantum naturally. This then decrements the threads priority. If the HTimer is bigger than one, the current priority is kept. This places it in the corresponding priority queue of the expired array as well. Threads with Priorities of 0-4 have their quantum set to 40 where as threads with priority 5-9 have their quantum set to 20, both using HTimer method. Do Dispatch also calls Swap(), which marches through the active array, and if empty swaps it with the expired array and marches through it again. This keeps the functions swapping. It returns FAILURE if both arrays are empty.