Writeup

My solution to the museum simulation problem is fair. For one, visitors are allowed into the museum only if there is a guide to assist them. Before a guide can leave, they must assist at most 10 visitors. Incoming visitors are sent to the current guide in bursts of up to 10 visitors using global semaphores. Incoming guides must wait for the current guide to finish up and must wait for a visitor to be waiting outside of the museum. Incoming visitors must wait until the museum as been opened by a guide. This back and forth between visitor and guide processes ensures no deadlocks or cases of starvation. Furthermore, shared variables are used between the processes with the aid of a mutex lock. This helps prevent race conditions as well as deadlocks.