Connor Johnson

Project 2

My solution is deadlock free because there are no loops in the way each process waits for each other. When a visitor or tour guide arrives without the other arriving yet, they both wait until the other process arrives. Since while loops are used for the wait methods, there is no way that a process waiting can be accidentally signaled to start executing. Once both a visitor and tour guide arrive, the visitor waits for the tour guide to open the apartment and then the tour guide waits for all the visitors to go through. There is no case where a visitor and tour guide will be waiting for each other at the same time. The solution is deadlock free because the condition variables use a queue for the wait method. Once a process is added to the queue, it will be eventually called by signal. There isn’t a case where it will wait forever for no reason. The visitorArrives method also checks how many tour guides and visitors are currently in the museum to know if there are too many visitors to do a tour.