Part 1

P1Q1

Step 0: flag[0] = false, flag[1] = false
Step 1: Process 0 runs and sets flag[0] = true (process swaps)
Step 2: Process 0 waits in while loop while Process 1 runs and sets flag[1] = true (process swaps)
Step 3: Process 1 waits in while loop.

Since both processes are in their respective while loops, there is a deadlock. Both processes require the other one to set their flag to false so that they can escape the while loop and run the critical section, but that is not possible hence a deadlock.

P1Q2

Assume Process 0 is faster than Process 1

Step 0: turn = 0
Step 1: Process 0 critical section runs,
Step 2: turn = 1, Process 1 critical section runs, Process 0 is in while loop
Step 3: Process 1 continues running and is not near its critical section now
Step 4: Process 0 is still in while loop

Since Process 1 keeps running and is not near its critical section, starvation is created for Process 0. Meaning Process 0 will keep on waiting for Process 1 to change the value of turn.