Team Members:
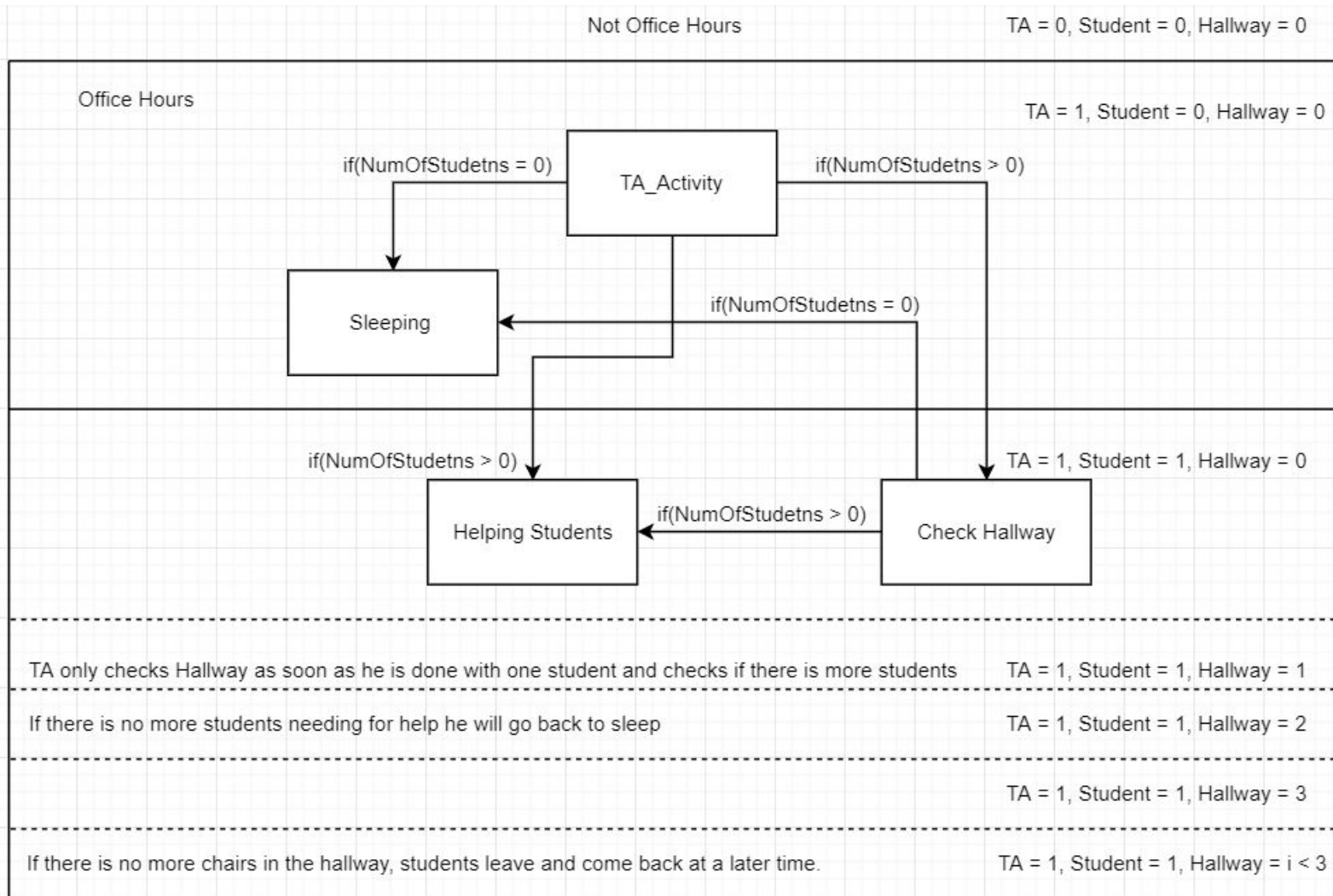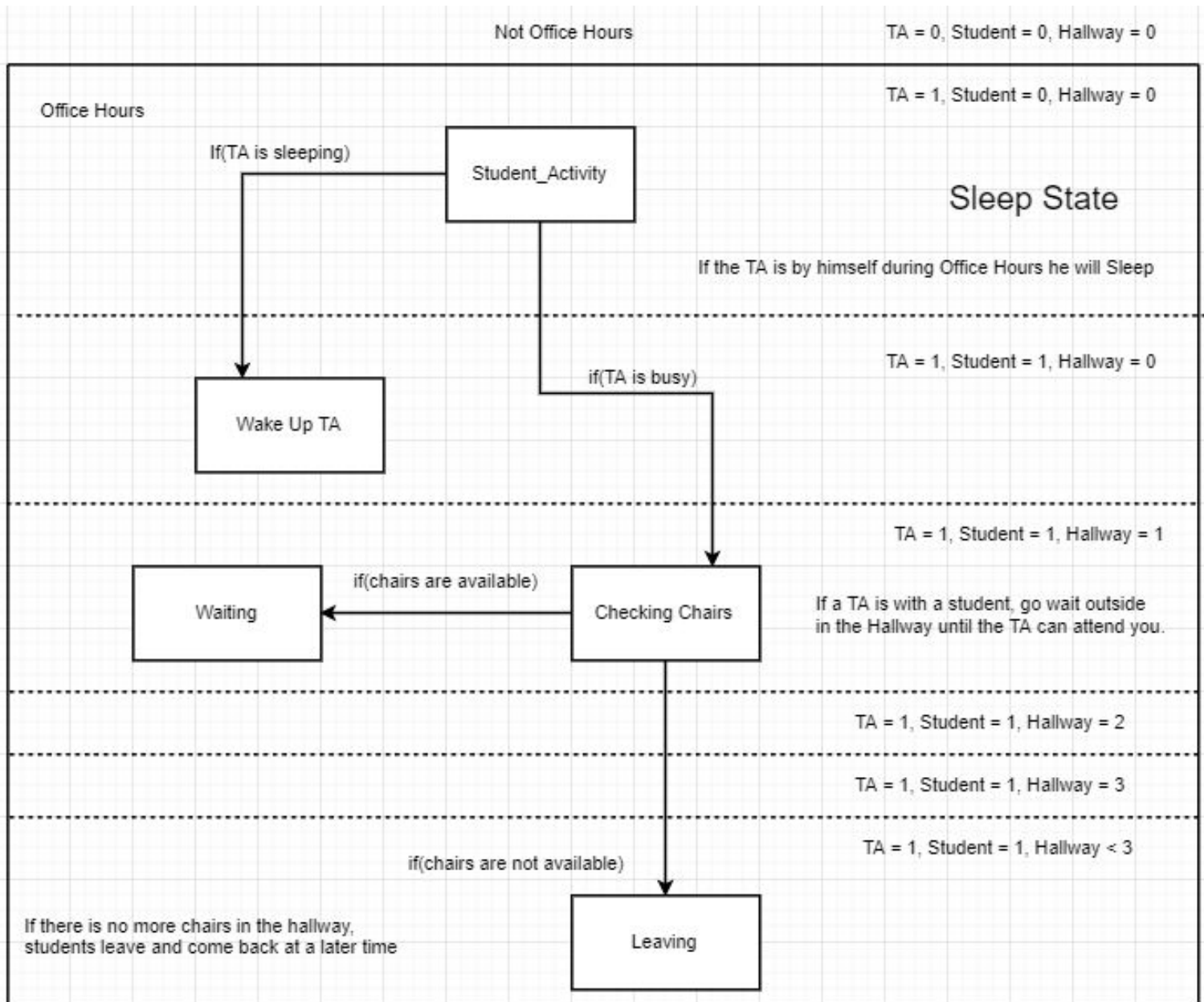1. Mauricio Macias, CPSC 351-01, mauricio.macias@csu.fullerton.edu
2. Cassandra Kobayashi, CPSC 351-01, ckobayashi@csu.fullerton.edu

Design of Sleeping Teaching Assistant

TA_Activity

Not Office Hours   TA = 0, Student = 0, Hallway = 0

Office Hours

TA = 1, Student = 0, Hallway = 0

if(NumOfStudetns = 0)   TA_Activity   if(NumOfStudetns > 0)

if(NumOfStudetns = 0)

Sleeping

if(NumOfStudetns > 0)

TA = 1, Student = 1, Hallway = 0

Helping Students   if(NumOfStudetns > 0)   Check Hallway

TA only checks Hallway as soon as he is done with one student and checks if there is more students   TA = 1, Student = 1, Hallway = 1

If there is no more students needing for help he will go back to sleep   TA = 1, Student = 1, Hallway = 2

TA = 1, Student = 1, Hallway = 3

If there is no more chairs in the hallway, students leave and come back at a later time.   TA = 1, Student = 1, Hallway = i < 3

Student_Activity

TA = 0, Student = 0, Hallway = 0

Office Hours

TA = 1, Student = 0, Hallway = 0

If(TA is sleeping)

Student_Activity

Sleep State

If the TA is by himself during Office Hours he will Sleep

TA = 1, Student = 1, Hallway = 0

if(TA is busy)

Wake Up TA

TA = 1, Student = 1, Hallway = 1

if(chairs are available)

Waiting   ←   **Checking Chairs**

If a TA is with a student, go wait outside
in the Hallway until the TA can attend you.

TA = 1, Student = 1, Hallway = 2

TA = 1, Student = 1, Hallway = 3

TA = 1, Student = 1, Hallway < 3

if(chairs are not available)

If there is no more chairs in the hallway,
students leave and come back at a later time

Leaving

Screenshot of test run:


```
File  Edit  View  Terminal  Tabs  Help
maui@oso:~/Downloads$ ./TA
Number of Students not specified. Using default (5) students.
Student 1 is doing homework.
Student 2 is doing homework.
Student 3 is doing homework.
Student 4 is doing homework.
Student 5 is doing homework.
Student 3 needs help from the TA
Student 5 needs help from the TA
Student 3 waits in hallway, chairs available: 2
TA is now awake to help student
Student left hallway chair, chairs remaining 3
*TA is helping the student
Student 3 is getting help from the TA
Student 5 waits in hallway, chairs available: 2
Student 2 needs help from the TA
Student 2 waits to go next.
Student 2 waits in hallway, chairs available: 1
Student 4 needs help from the TA
Student 4 waits to go next.
Student 4 waits in hallway, chairs available: 0
Student 1 needs help from the TA
If student didn't find any chair to sit on. Student 1 will return at another time
Student 1 is doing homework.
Student 1 needs help from the TA
If student didn't find any chair to sit on. Student 1 will return at another time
Student 1 is doing homework.
Student 3 left TA room
Student left hallway chair, chairs remaining 1
*TA is helping the student
Student 5 is getting help from the TA
Student 1 needs help from the TA
Student 1 waits to go next.
Student 1 waits in hallway, chairs available: 0
Student 5 left TA room
Student left hallway chair, chairs remaining 1
*TA is helping the student
Student 2 is getting help from the TA
Student 2 left TA room
Student left hallway chair, chairs remaining 2
*TA is helping the student
Student 4 is getting help from the TA
Student 4 left TA room
Student left hallway chair, chairs remaining 3
*TA is helping the student
Student 1 is getting help from the TA
Student 1 left TA room
All students have been helped. TA is going to sleep.
maui@oso:~/Downloads$
```