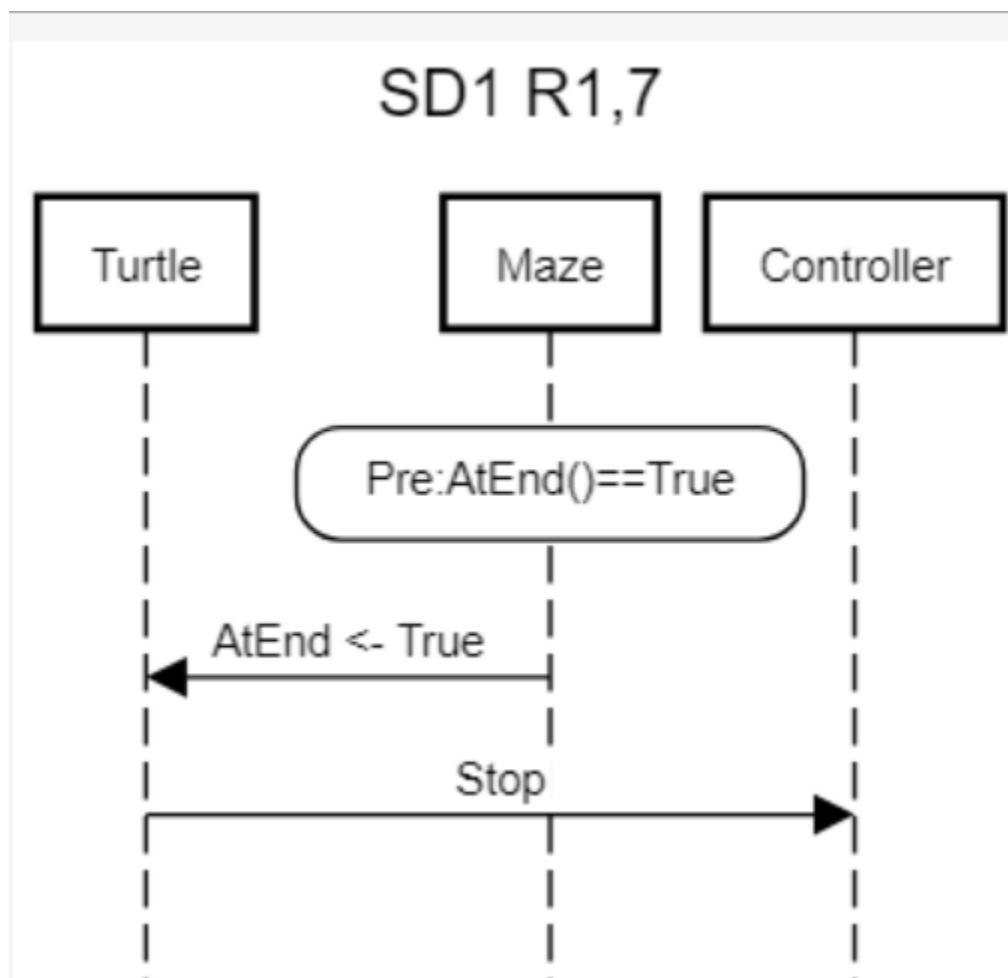


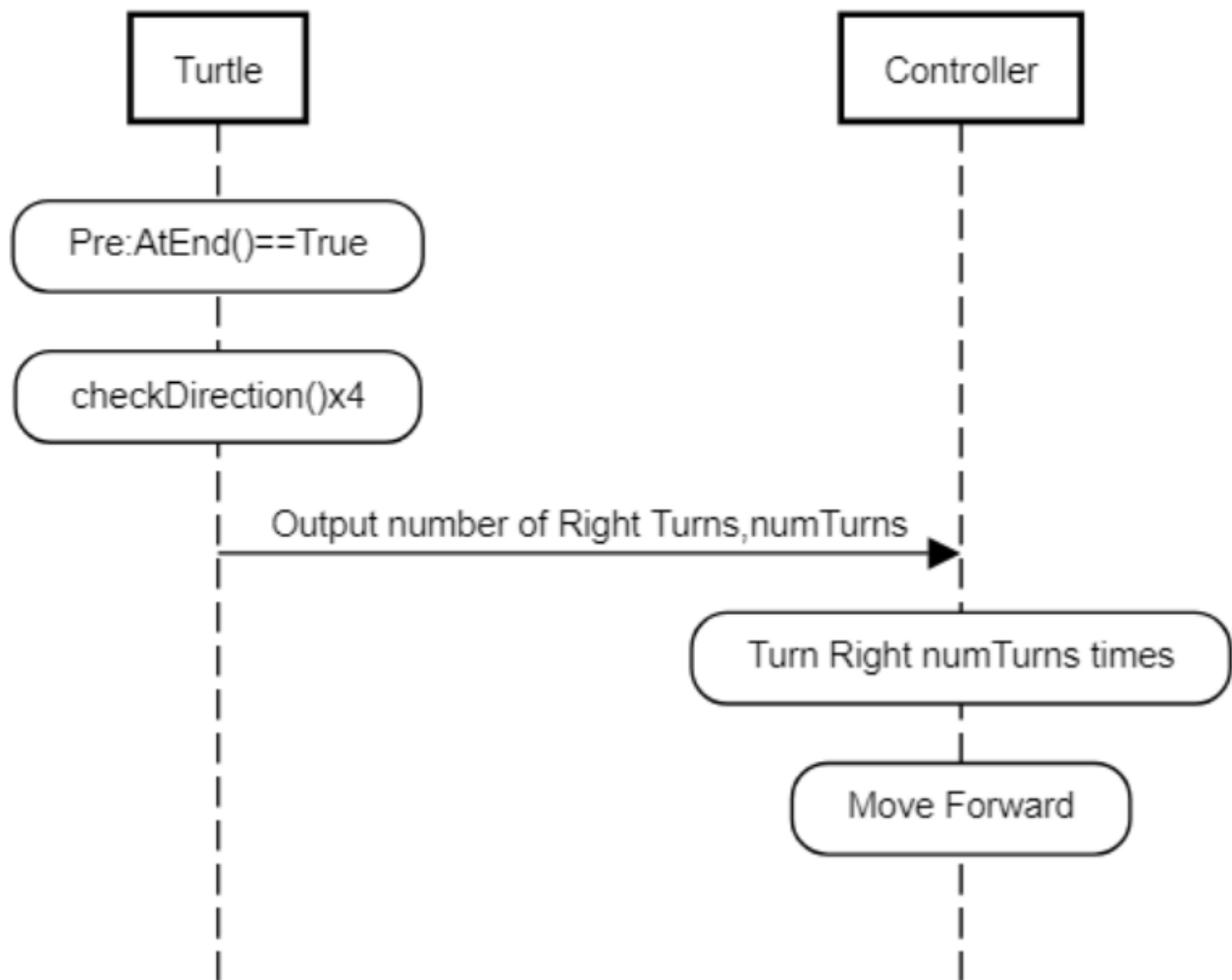
Andrew Chong(achong2)

- Q1: Final High Level Requirements
 - R1. If the turtle has reached the end square of the maze, it shall not move.
 - R2. The Turtle shall check the squares above,below,left,and right to determine if it can move in each direction using a checkDirection function()
 - R3. The Turtle shall check the squares above,below,left,and right of it to record the number of visits each square has.
 - R4. The Turtle shall turn towards and moves toward the square that has the lowest amount of visits out of the squares that are able to move in.
 - R5. The Turtle shall not rotate more than 90 degrees in a single iteration
 - R6. The Turtle shall only move in the direction that it is facing
 - R7. The Turtle shall only call AtEnd() on the current square it is on
- Q2: Final Sequence Diagrams
 -

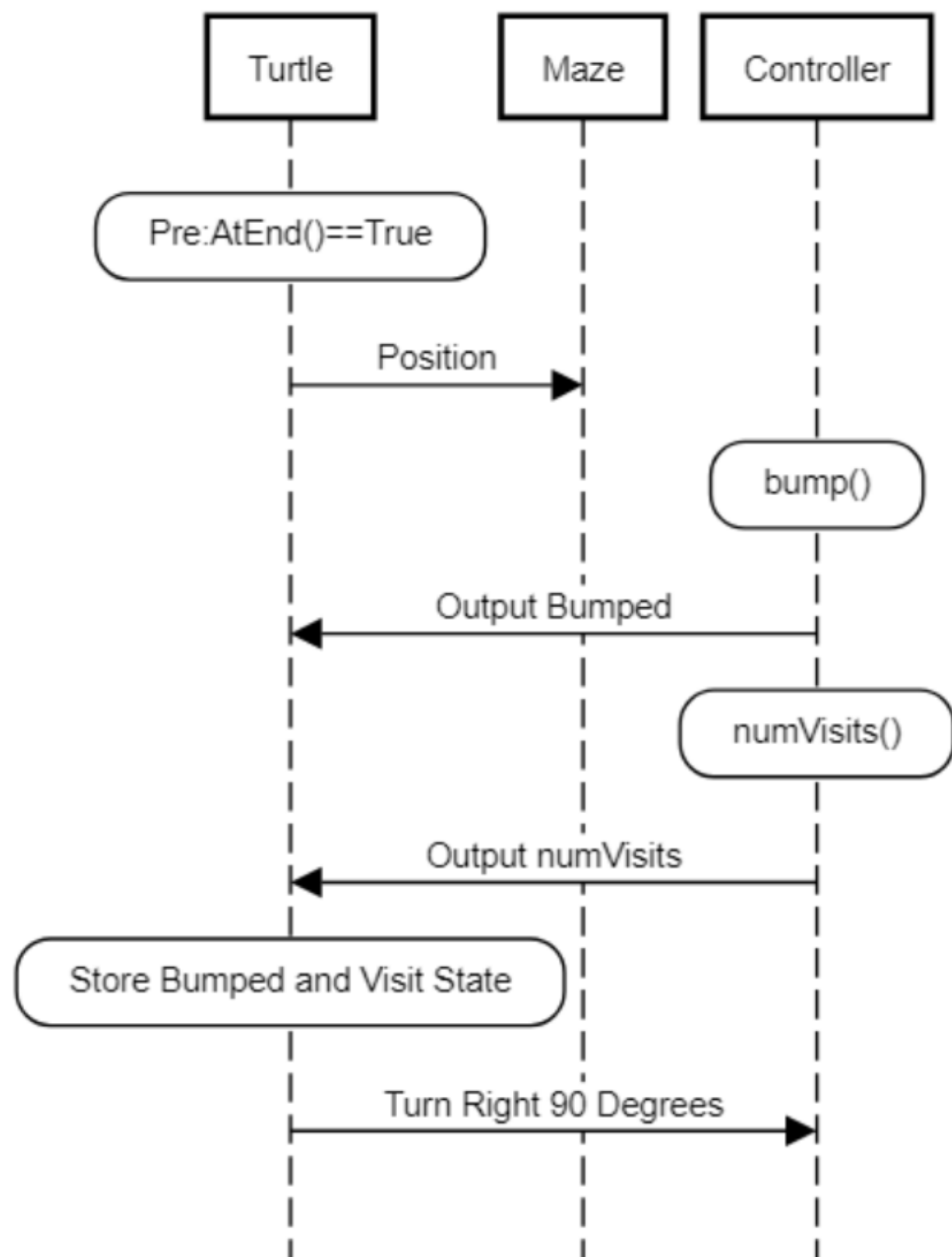


○

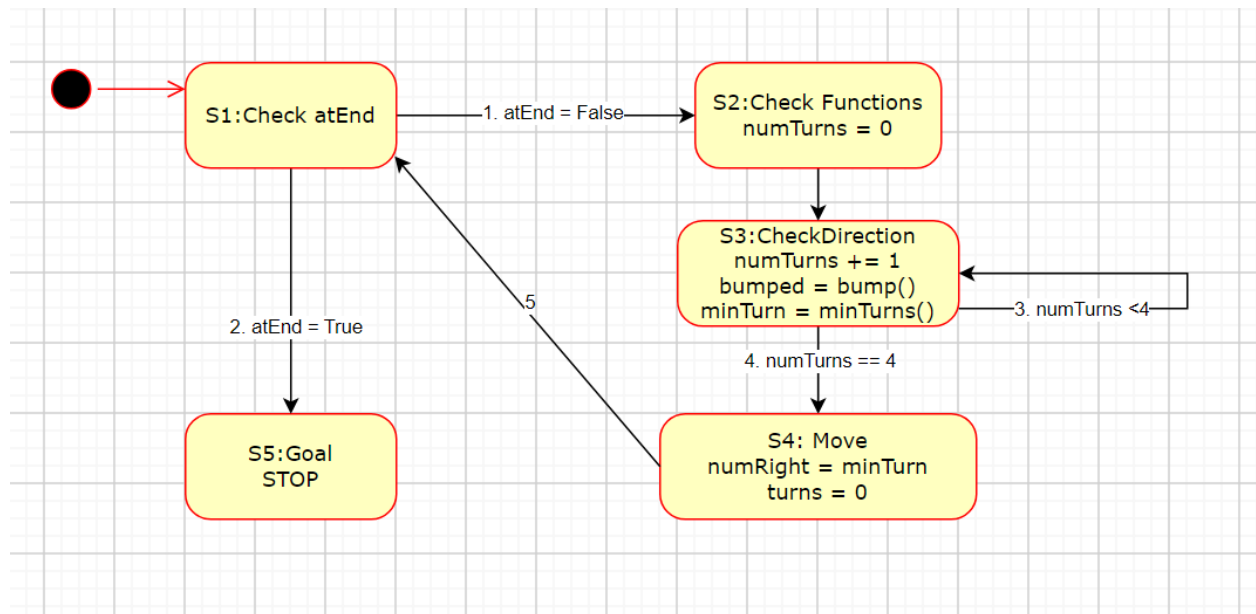
SD2 R2,4,6



SD2.1 R2,3,5 checkDirection()



- Q3: Final Statechart(s) for Turtle



- Q4: Statement regarding compiler warnings. Does your code generate any compiler warnings with the earlier project warning set? If so, which types?
 - No, there are no warnings
- Q5: Statement regarding monitor failures. All working? If not, state which ones fail for which mazes.
 - No monitor failures

- Q6: Peer review logs. Show logs for your code from Project 6 and later. Status must be completed for all issues.

Project 6 Peer Review:

Peer Review Checklist 18-642				
Group:	21			
Date:	10/25/2023			
Artifact:	Project 6 Sequence Diagrams			
Leader:	Sahil Somani (ssomani)			
Author/Scribe:	Andrew Chong			
Other Reviewers	Tom Schmitz			
Time spent:	10 minutes			
Issue	Location	Rule	Issue Description	Status
1	All SDs	6	No arc identifiers	Fixed
2	All SDs	2	Descriptions missing	Fixed
3	SD 2.1	3	Missing objects	Fixed
4	SD 2.1	4	Implicit jump from turtle to maze after "Output bumped"	Fixed
Status options: Fixed / Not Fixed / Not a Bug				v 2.0.4

Peer Review Checklist 18-642				
Group:	21			
Date:	10/25/2023			
Artifact:	Project 6 Requirements			
Leader:	Sahil Somani (ssomani)			
Author/Scribe:	Andrew Chong			
Other Reviewers	Tom Schmitz			
Time spent:	9 minutes			
Issue	Location	Rule	Issue Description	Status
1	R2, R3	8	Requirements are a tiny bit vague	Fixed
2	R2	4	Does not specify what to do with walls	Fixed
Status options: Fixed / Not Fixed / Not a Bug				v 2.0.4

Peer Review Checklist 18-642				
Group:	11			
Date:	10/31/2023			
Artifact:	Project 7 Statechart			
Leader:	Wei-Che Huang (weichehu)			
Author/Scribe:	Andrew Chong			
Other Reviewers				
Time spent:	10 minutes			
<u>Issue</u>	<u>Location</u>	<u>Rule</u>	<u>Issue Description</u>	<u>Status</u>
1	SC1	1	Missing outputs of the actuator	Fixed
2	SC1	4	Some arcs missing identifier	Fixed
3	SC1	6	Assignment not comparison	Fixed
4	All SD	5	Guard conditions on statechart do not correspond to SD	Fixed
Status options: Fixed / Not Fixed / Not a Bug				v 2.0.4

Project 7 Peer Review:

Peer Review Checklist 18-642				
Group:	11			
Date:	10/31/2023			
Artifact:	Project 7 Sequence Diagram			
Leader:	Wei-Che Huang (weichehu)			
Author/Scribe:	Andrew Chong			
Other Reviewers				
Time spent:	10 minutes			
<u>Issue</u>	<u>Location</u>	<u>Rule</u>	<u>Issue Description</u>	<u>Status</u>
1	All SD	4	Missing arc identifiers	Fixed
2	SD-4	9	Missing postcondition	Fixed
Status options: Fixed / Not Fixed / Not a Bug				v 2.0.4

Project 8 Peer Review:

Peer Review Checklist 18-642				
Group:	5			
Date:	11/6/2023			
Artifact:	Project 8 Maze Code			
Leader:	Yihan Duan			
Author/Scribe:	Andrew Chong			
Other Reviewers	Zhangwen Wan			
Time spent:	Not Fixed			
Issue	Location	Rule	Issue Description	Status
1	47	15	not initialized at definition	Fixed
2	76	2	inconsistent tab	Fixed
3	135-180	24	overcomplicated logic	Fixed
Status options: Fixed / Not Fixed / Not a Bug				v 2.0.4

Peer Review Checklist 18-642				
Group:	5			
Date:	11/6/2023			
Artifact:	Project 8 Turtle Code			
Leader:	Yihan Duan			
Author/Scribe:	Andrew Chong			
Other Reviewers	Zhangwen Wan			
Time spent:	15mins			
Issue	Location	Rule	Issue Description	Status
1	48	2	Magic Number	Fixed
2	55	2	inconsistent tab	Fixed
3	76,83,91,97	2	Magic Numbers	Fixed
4	110	7	missing error case	Fixed
5	153	2	inconsistent tab	Fixed
Status options: Fixed / Not Fixed / Not a Bug				v 2.0.4

Project 9 Peer Review:

Peer Review Checklist 18-642				
Group:		12		
Date:		11/13/2023		
Artifact:		unit test		
Leader:		Jerry		
Author/Scribe:		Andrew		
Other Reviewers		Youqi Yang		
Time spent:		15min		
Issue	Location	Rule	Issue Description	Status
1	test RESET	1	No move functions on the reset test	Fixed
2	ALL	3	internal state is not checked	Fixed
3	Missing	2	State transition from S4 to S1 is not tested	Fixed
Status options: Fixed / Not Fixed / Not a Bug				v 2.0.4

Project 10 Peer Review:

Peer Review Checklist 18-642				
Group:		1		
Date:		11/28/2023		
Artifact:		Andrew's Project 10 Unit Test		
Leader:		Chi Gao		
Author/Scribe:		Andrew Chong		
Other Reviewers		Shenyi Qiao, Yuezhe Cao		
Time spent:		23 mins		
Issue	Location	Rule	Issue Description	Status
1	test END	2	bump is not tested for both true and false values	fixed
2	State Trans 4		State chart covers <4 and = 4, but not >4	fixed
3	Overall	3	Missing test case for default statements	fixed
4				
5				
6				
7				
8				
9				
10				
11				
12				
Status options: Fixed / Not Fixed / Not a Bug				v 2.0.4

Project 11 Peer Review:

Peer Review Checklist 18-642				
Group:	2			
Date:	12/6/2023			
Artifact:	Project 11 Monitor			
Leader:	Yaguang Li			
Author/Scribe:	Andrew Chong			
Other Reviewers				
Time spent:	20 mins			
<u>Issue</u>	<u>Location</u>	<u>Rule</u>	<u>Issue Description</u>	<u>Status</u>
1	face monitor	2	position checking is incomplete	Fixed
2	forward monitor	Note	might need to check if the orientation remains the same	Fixed
3	tick monitor	2	at most 1 of each interruptions could occur between each tick interrupt	Fixed
4	wall monitor	Note	Might be able to put the logic inside of the visit interrupt	Fixed
Status options: Fixed / Not Fixed / Not a Bug				v 2.0.4

- Q7: Maze solutions. Screen shot of all maze m1 .. m10 runs. For each maze include in the screen shot both the maze picture after the turtle has reached the end square and a window showing whether invariant violations occurred. If your turtle does not solve a maze show the degree to which it makes progress in a reasonable way.

M1:



M2



M3

```

roscore http://18642-ros:11311/

SUMMARY
=====
PARAMETERS
* /roslintro: kinetic
* /rosversion: 1.12.7

NODES

auto-starting new master
process[master]: started with pid [12525]
ROS_MASTER_URI=http://18642-ros:11311/

setting /run_id to a4c47392-98c6-11ee-943b-080027247d59
process[roslint-1]: started with pid [12538]
started core service [/roslint]
[ INFO] [1702368949.14567072]: Using nazezfile /home/student/catkin_ws/src/eece64
2rtle/m3.maze
[ INFO] [1702368949.242418154]: Starting ece642rtle with node name /ece642rtle
[ INFO] [1702368949.289438553]: Spawning turtle [turtle1] at x=[0.000000], y=[0.
000000], theta=[0.000000]

student@18642-ros:~/catkin_ws/src/eece642rtle/monitors
student@18642-ros:~/catkin_ws/src/eece642rtle/monitors$ ./run_all_monitors.sh
Starting monitor ece642rtle_atend_monitor
Starting monitor ece642rtle_face_monitor
Starting monitor ece642rtle_forward_monitor
Starting monitor ece642rtle_solved_monitor
Starting monitor ece642rtle_step_monitor
Starting monitor ece642rtle_tick_monitor
Starting monitor ece642rtle_turn_monitor
Starting monitor ece642rtle_wall_monitor
^CKilling monitor ece642rtle_atend_monitor
terminate called after throwing an instance of 'boost::exception_detail::clone_t
mpl::boost::exception_detail::error_info_injector<boost::lock_error>' >
what(): boost: mutex lock failed in pthread_mutex_lock: Invalid argument
terminate called after throwing an instance of 'boost::exception_detail::clone_t
mpl::boost::exception_detail::error_info_injector<boost::lock_error>' >
what(): boost: mutex lock failed in pthread_mutex_lock: Invalid argument
terminate called after throwing an instance of 'boost::exception_detail::clone_t
mpl::boost::exception_detail::error_info_injector<boost::lock_error>' >
what(): boost: mutex lock failed in pthread_mutex_lock: Invalid argument
terminate called after throwing an instance of 'boost::exception_detail::clone_t
mpl::boost::exception_detail::error_info_injector<boost::lock_error>' >
what(): boost: mutex lock failed in pthread_mutex_lock: Invalid argument
terminate called after throwing an instance of 'boost::exception_detail::clone_t
mpl::boost::exception_detail::error_info_injector<boost::lock_error>' >
what(): boost: mutex lock failed in pthread_mutex_lock: Invalid argument
terminate called after throwing an instance of 'boost::exception_detail::clone_t
mpl::boost::exception_detail::error_info_injector<boost::lock_error>' >
what(): boost: mutex lock failed in pthread_mutex_lock: Invalid argument
TOTAL VIOLATIONS: 0
Any violations logged in VIOLATIONS.txt
killed all processes, exiting

```

M4

```

roscore http://18642-ros:11311/

SUMMARY
=====
PARAMETERS
* /roslintro: kinetic
* /rosversion: 1.12.7

NODES

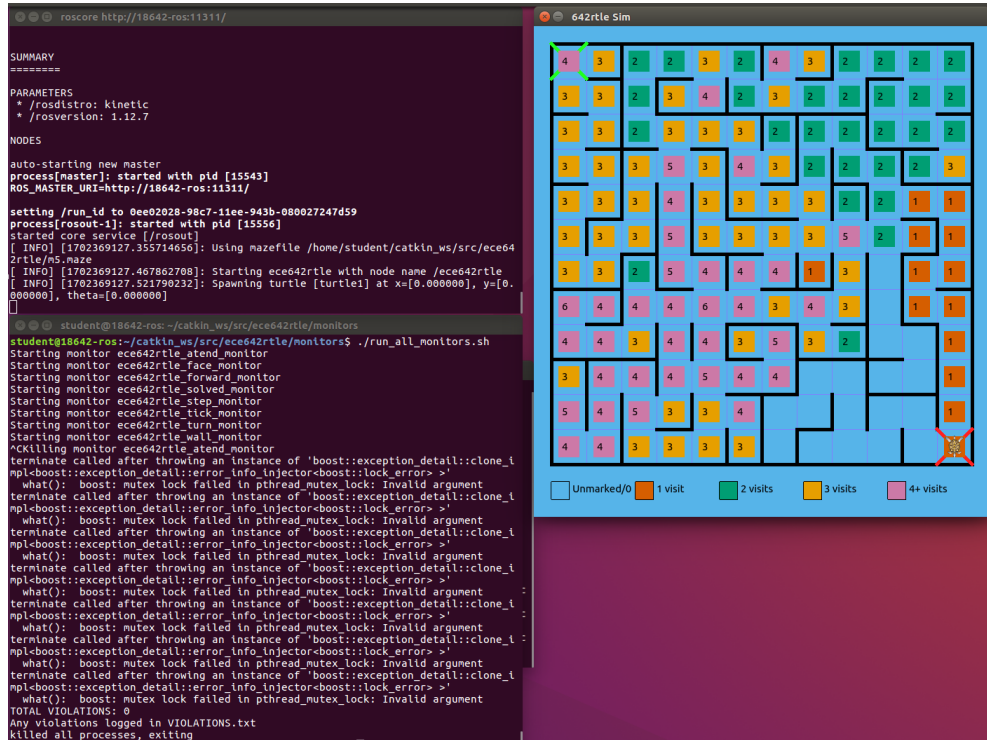
auto-starting new master
process[master]: started with pid [14465]
ROS_MASTER_URI=http://18642-ros:11311/

setting /run_id to e475f9c0-98c6-11ee-943b-080027247d59
process[roslint-1]: started with pid [14478]
started core service [/roslint]
[ INFO] [1702369056.064563135]: Using nazezfile /home/student/catkin_ws/src/eece64
2rtle/m4.maze
[ INFO] [1702369056.129605200]: Starting ece642rtle with node name /ece642rtle
[ INFO] [1702369056.177557384]: Spawning turtle [turtle1] at x=[5.000000], y=[0.
000000], theta=[0.000000]

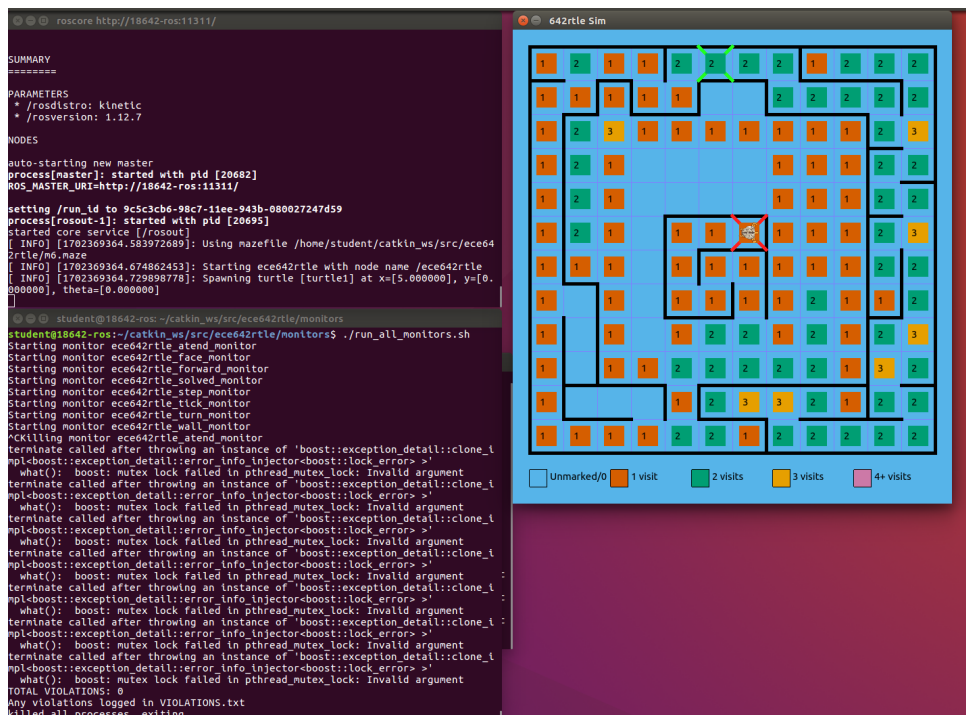
student@18642-ros:~/catkin_ws/src/eece642rtle/monitors
student@18642-ros:~/catkin_ws/src/eece642rtle/monitors$ ./run_all_monitors.sh
Starting monitor ece642rtle_atend_monitor
Starting monitor ece642rtle_face_monitor
Starting monitor ece642rtle_forward_monitor
Starting monitor ece642rtle_solved_monitor
Starting monitor ece642rtle_step_monitor
Starting monitor ece642rtle_tick_monitor
Starting monitor ece642rtle_turn_monitor
Starting monitor ece642rtle_wall_monitor
^CKilling monitor ece642rtle_atend_monitor
terminate called after throwing an instance of 'boost::exception_detail::clone_t
mpl::boost::exception_detail::error_info_injector<boost::lock_error>' >
what(): boost: mutex lock failed in pthread_mutex_lock: Invalid argument
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mpl::boost::exception_detail::error_info_injector<boost::lock_error>' >
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terminate called after throwing an instance of 'boost::exception_detail::clone_t
mpl::boost::exception_detail::error_info_injector<boost::lock_error>' >
what(): boost: mutex lock failed in pthread_mutex_lock: Invalid argument
terminate called after throwing an instance of 'boost::exception_detail::clone_t
mpl::boost::exception_detail::error_info_injector<boost::lock_error>' >
what(): boost: mutex lock failed in pthread_mutex_lock: Invalid argument
terminate called after throwing an instance of 'boost::exception_detail::clone_t
mpl::boost::exception_detail::error_info_injector<boost::lock_error>' >
what(): boost: mutex lock failed in pthread_mutex_lock: Invalid argument
terminate called after throwing an instance of 'boost::exception_detail::clone_t
mpl::boost::exception_detail::error_info_injector<boost::lock_error>' >
what(): boost: mutex lock failed in pthread_mutex_lock: Invalid argument
TOTAL VIOLATIONS: 0
Any violations logged in VIOLATIONS.txt
killed all processes, exiting

```

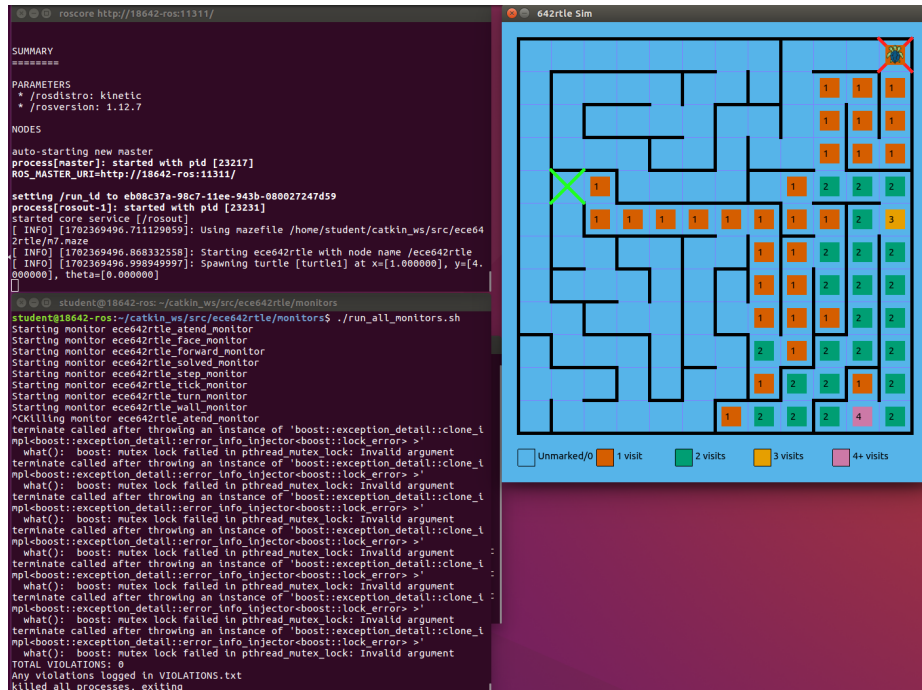
M5



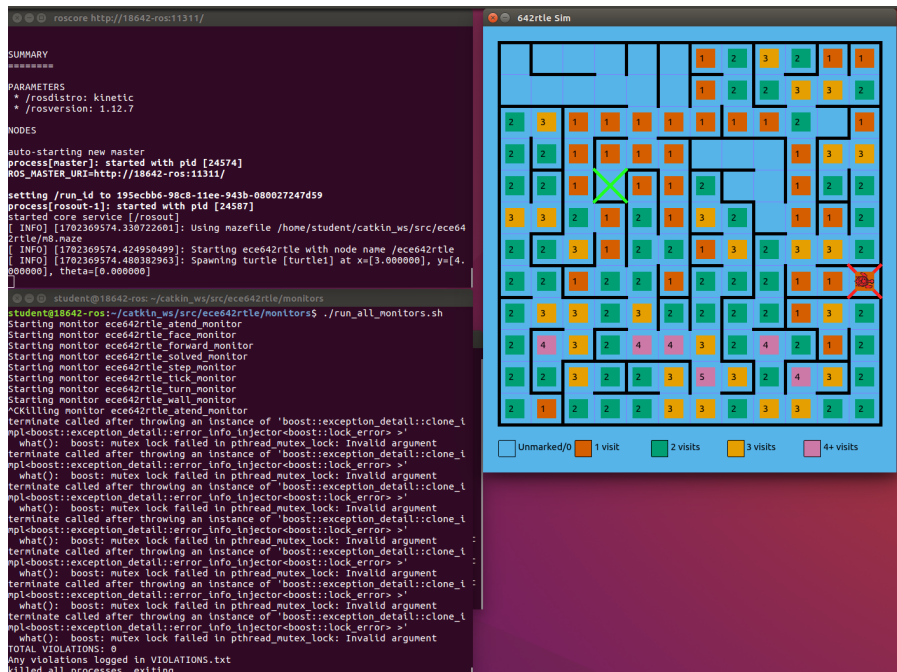
M6



M7



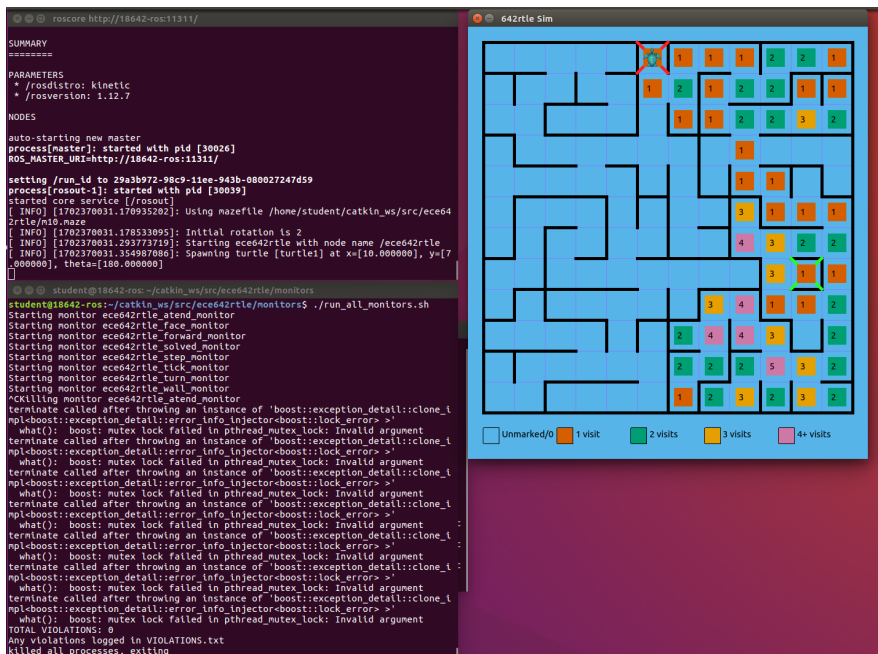
M8



M9



M10



- Q8: Statement regarding maze solutions. Which mazes does your handed-in code solve?
 - Solves All Mazes
- Q9: What one software engineering process or practice from Projects 1-12 do you think is the most important one to apply to your own work beyond this course, going forward?
 - I think that the engineering process that I think is the most important is the unit testing. Knowing how to properly design and test unit tests is a skill that I think would be extremely useful in development.
- Q10: Any feedback about Project 12, or any other projects?
 - None