Review

1. Discuss how much of your original sprint goal(s) was (were) achieved. Explain differences vs. original goals.

All of the original sprint goals were achieved.

2. Discuss how many of the PBI's originally included in the sprint were finished.

PBI	Completed?
Loading Path files (ticket #5)	Yes
Creating a new path (ticket #8)	Yes
Viewing path files (ticket #9)	Yes
Scaling path maps (ticket #10)	Yes
Edit path (ticket #21)	Yes
edit path point values using textboxes (#25)	Yes
drag and drop path points (#26)	Yes
saving a path file (#27)	Yes
Total PBIs: 8	**Total Completed: 8**

3. Discuss which specific PBI's were included but not finished (and must be moved to the next sprint).

All PBIs that were originally included are complete.

4. Discuss any additional PBI's that your team included in the sprint (if any).

PBI	Completed?
Login to Desktop app (ticket #2)	Yes
Assigning path to robot (ticket #4)	No
limiting access based on user role (ticket #3)	No
forward and reverse (ticket #6)	No
creating a database for user access (ticket #24)	Yes
provide a means to log in (ticket #52)	Yes

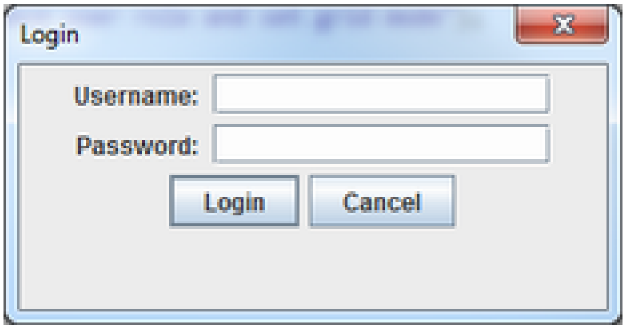
Total PBIs: 6	**Total Completed: 3**

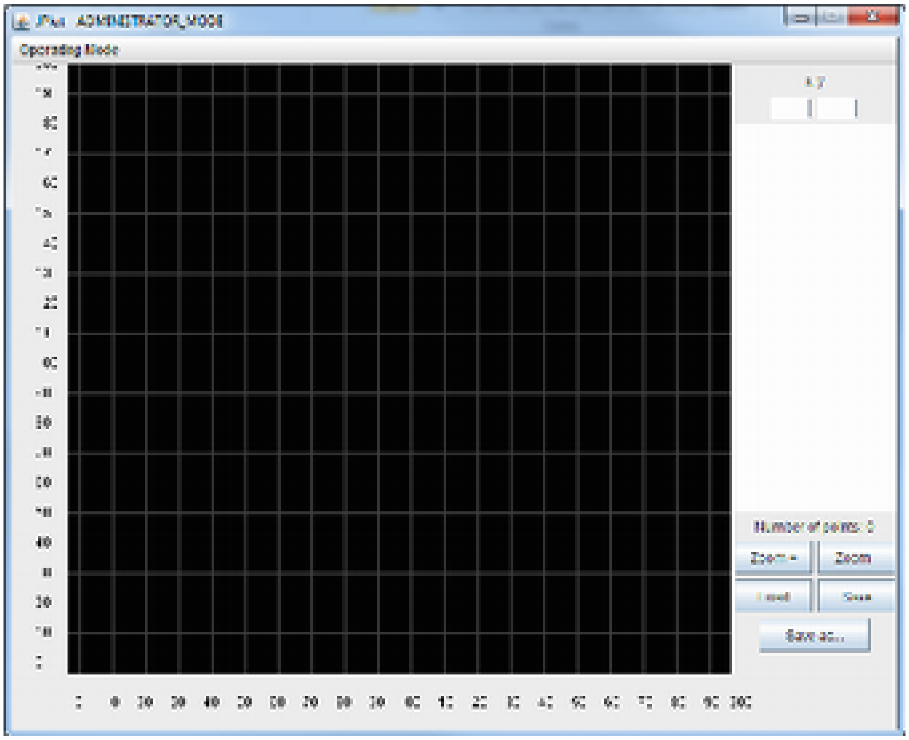
5. Discuss existing state of the product, future direction (what likely will be done next sprint).

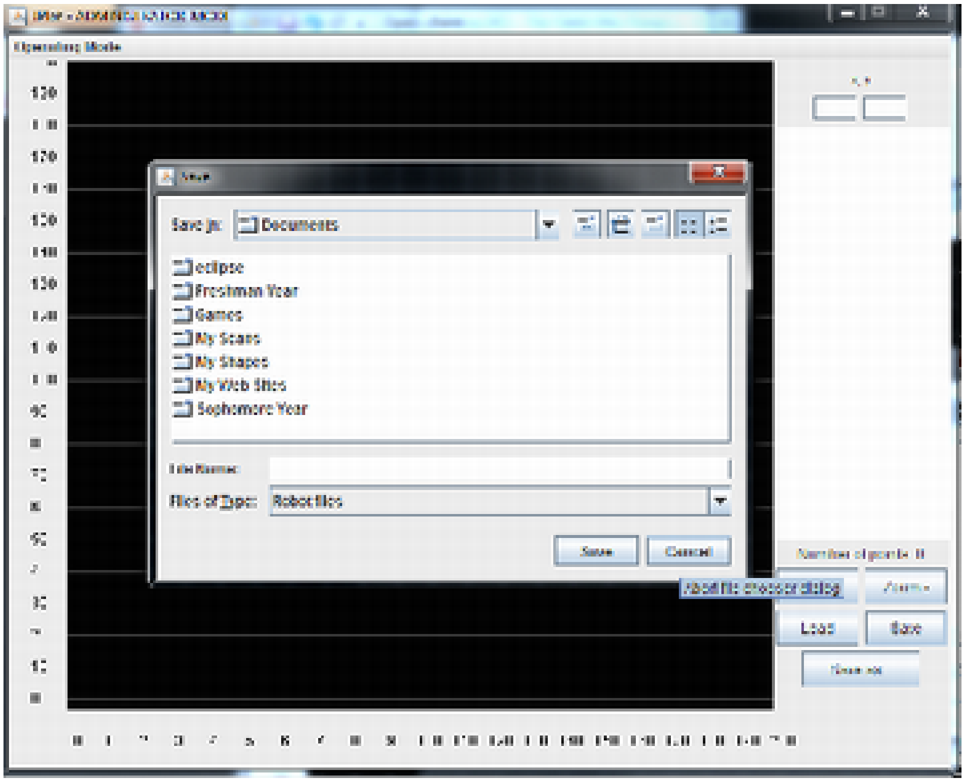
Next sprint will consist of the administrative and control features for sure. We have manually tested all of the PBIs that are marked as complete, but want to add some automated GUI testing as technical PBIs for the next sprint.

6. Discuss the state of your team's testing and build processes.

For a PBI to be closed, all tasks related to it must be finished and tested. We incorporate unit testing (written either by the programmer for the task or someone else) and also a little bit of manual verification by running the program. After every check in, Travis CI compiles the code and runs all the unit tests to verify the build is not broken. We also use Gradle to manage the project's dependencies so that everyone can always have the required libraries.





 Operating Mode
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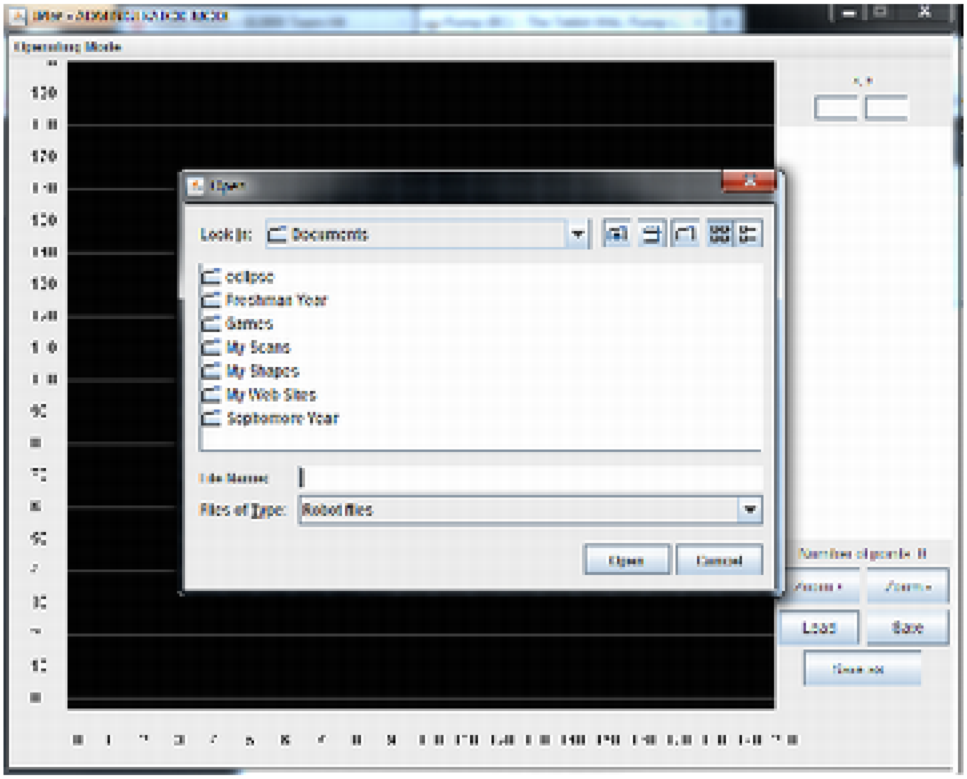 Operating Mode
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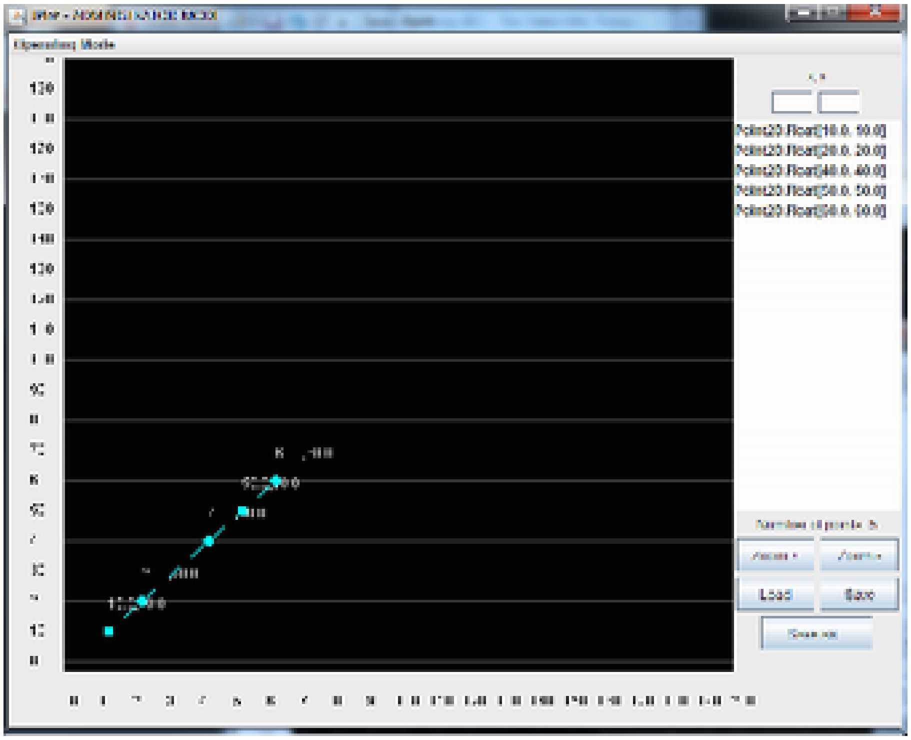

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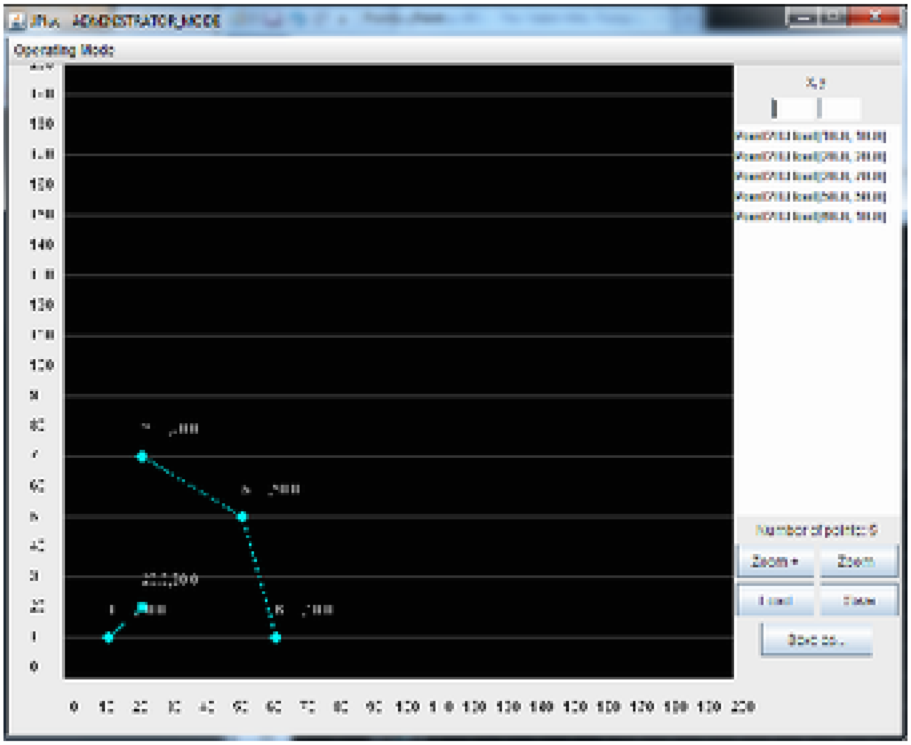

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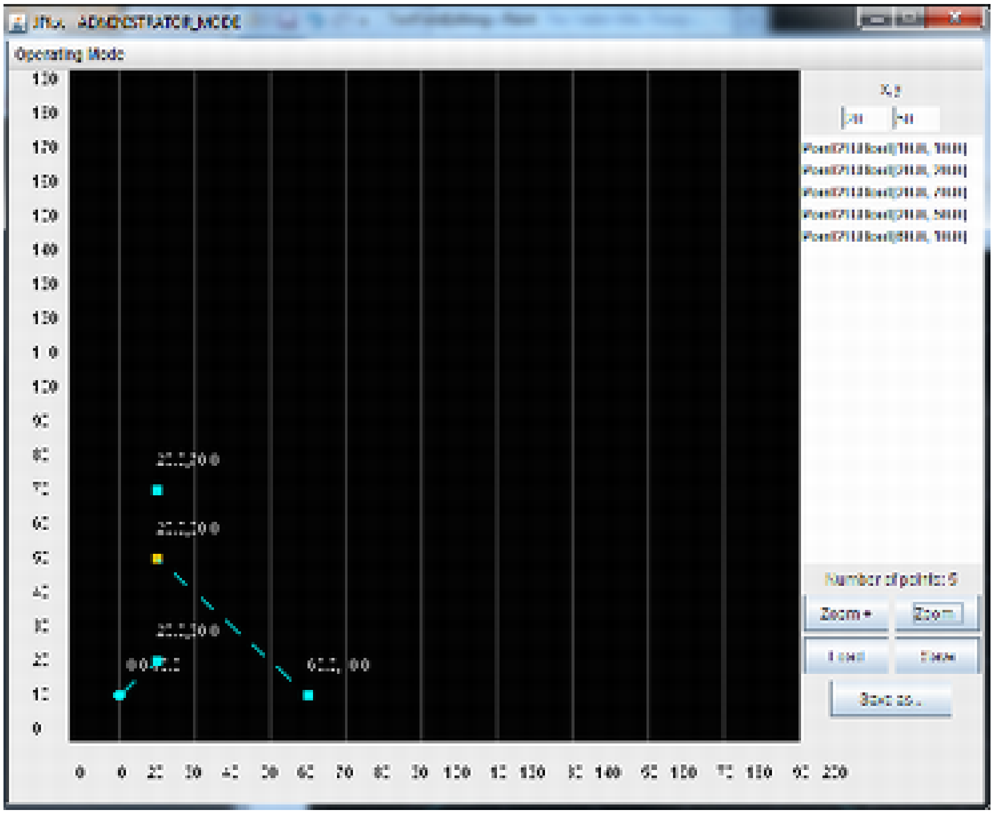

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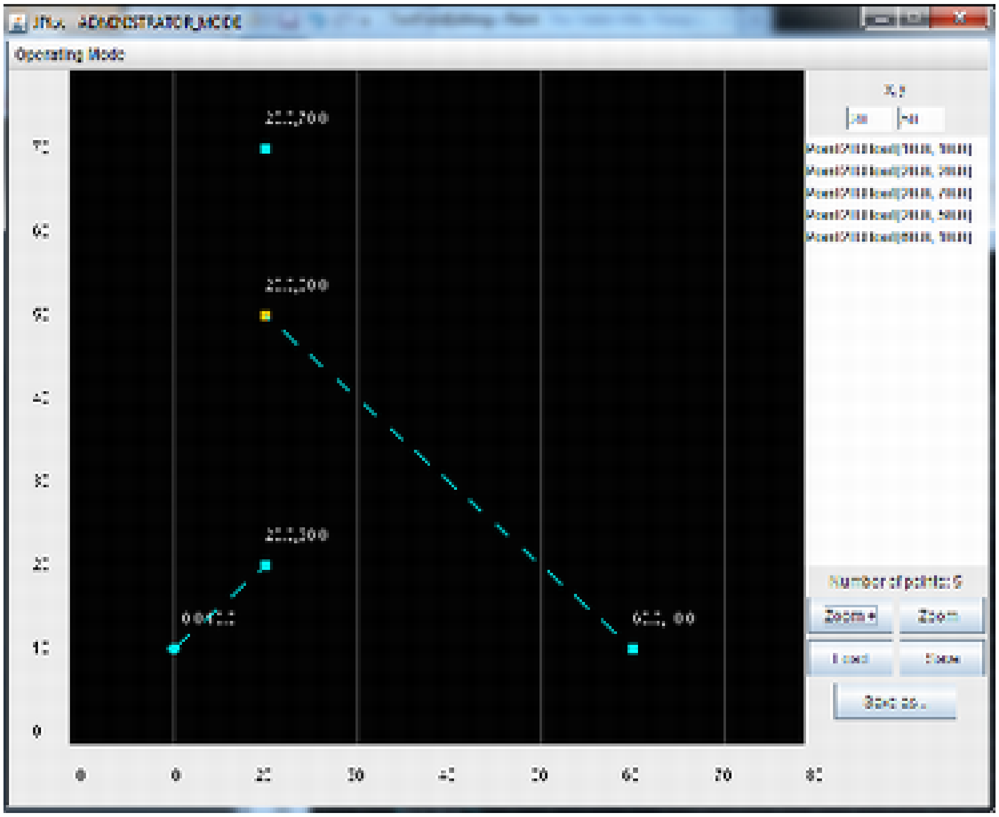

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Point2D.Double[20.0, 70.0]
Point2D.Double[20.0, 50.0]
Point2D.Double[60.0, 10.0]

Retrospective

1. Actual Hours (for all team members) vs Estimated Hours for all tasks in the sprint.

Total Hours: 97.5 Estimated hours: 146.0

2. Tasks finished to-date vs #of total tasks in the sprint. Explain any additional tasks you added to the sprint (either from additional PBI's you brought into the sprint, or tasks associated with the initial PBI's that you simple forgot to plan for originally).

Finished: 42 Total in sprint: 45

3. PBI's finished to-date vs #of total PBI's in the sprint.

Finished: 11 Total in sprint: 14

4. Story Points completed in the sprint vs. originally-estimated Story Points.

Finished: 33 Estimated: 44

5. An analysis of your team's velocity, based on the Story Points you completed.

We finished 33 story points this sprint. There are 33 story points remaining in PBIs that are not completed. Our velocity indicates that we should finish by the end of next sprint. However, we have a few technical PBIs (mostly for automated testing) that we want to add to the backlog and work on next sprint.

6. Your ideas for improvement for the next sprint (eg. testing, building). Note that "dot-voting" may aid you in deciding what the highest priority items are.

- We should not artificially inflate the total hour estimates by putting estimated hours for the administration tasks
- We need to get tests done for tasks with code complete sooner so we don’t need to swarm at the end to test things
- We need to have more tasks marked as done before pulling in extra PBIs
- Don’t work on lower priority PBI items if higher priority ones aren’t finished
- Everyone should keep better track of their hours
- Hold more status meetings

Joey Koenig

Ticket #29 - I created a file input and output class to load or save a .scrumbot file.
Estimated hours: .5 hours Actual hours: 1.61
It had to be redone to work with the path class.

Ticket #34 - I created a dialog for the user to choose save or load.
Estimated hours: 2.0 Actual hours: .6
It was done quicker than thought. It was also moved to the main GUI.

Ticket #47 - I created a test class to test the file I/O class.
Estimated hours: 1.0 Actual hours: .11
It was determined that the test class was unnecessary since it mostly just uses the JFileChooser.

Ticket #56 - This ticket was moved into Sprint 1 to get the robot to simply follow a path in reverse or forward.
Estimated hours: 1.5 Actual hours: 1.68 (still in progress)
This ticket was moved into Sprint 1 because previous work was completed. I extremely underestimated the complexity of task. It will be moved into Sprint 2.

Ticket #59 - This ticket was intended for Macon and I to start looking how the robot takes commands using the Lejos library.
Estimated hours: 12.0 Actual hours: 5.25

Ticket #66 - Administrative task
Estimated hours: 6 (should have been set to zero) Actual hours: 1.8

Andrew Scott

Ticket #31 (Parse the path file and load the coordinates into the path class)- This was finished and tested but we later refactored the usage of Path class to make this obsolete.
Estimated hours: 3 Actual hours: 1.5

Ticket #40 (send path to 2d plot) - This task only required a little modification to the JPlot so it used the same Path as the rest of the program.
Estimated hours: 2 Actual: 0.7

Ticket #51 (Create an SQLite database) - created sqlite database but we later decided that an MS Access database would be better so I created one of those instead.
Estimated hours: 3 Actual 0.2

Ticket #53 (Investigate how to access database from java) - This investigation lead to us using an MS Access database instead of an SQLite one for security reasons. Marius has experience with Jackcess so this was a good decision.
Estimated: 8 Total: 3.4

Ticket #55 (Create a class that accesses the database) - This wasn’t all that hard once Marius provided an example of how to use the Jackcess library.
Estimated: 1.5 Total: 1.1

Ticket #63 (Administrative Andrew) - This task was added after a week into the sprint after a discussion with Dr. Hornick. Thus, the first week’s hours were not entered for it.
Estimated: 6 (Should have been 0) Actual: 4 (but working on report so will increase)

Ticket #71 (Link the login page gui to database functions provided) - Macon created the login page gui so I linked the login button to the user validation function of the database class.
Estimated: 0.5 Total: 1.0

Ticket #72 (After successful login, tell gui to show correct features): After logging in, I checked the user's role and told the GUI what features to show. The GUI does not completely handle this yet, but access to the database is complete and the function call to the GUI is there which was all the task required.
Estimated: 2 Total: 0.4

Macon Suckow

Ticket #30: I created the class file for the path that would hold the coordinates for the robot.
Estimated: 2 Actual: 0.5

Ticket #39: This task had me create a UI function that would allow the user to see how many different points were on the grid.
Estimated: 2.5 Actual: 1

Ticket #54: For this task I had to create a login GUI that would allow that user to enter a username and password then choose to login or cancel.
Estimated: 1.5 Actual: 1.5

Ticket #65: This is my administrator task that was added halfway into the sprint that was for tracking all hours that are not part of specific task, but still apart of the project.
Estimated: 6 (Should have been 0) Actual: 3

Ticket #59: This task was for everybody to look through the Lejos libraries and as a group figure out how we were going to communicate with the robot and what exactly we had to send it in regards to points or path.
Estimated: 12 (For everybody) Actual: 5.3 (everybody) 3.0 (me)

Ticket #70: This task was for the waypoints that were created to be added to the path which will be sent to the robot.
Estimated: 1 Actual 0.75

Josh Ault

Ticket #32: This task was to give the user the ability to zoom in and see a closer view of the path or zoom out on the Grid and see more of the area the robot can move.
Estimated: 3 Actual: 0.7

Ticket #35: This task gives the ability to click and hold on any point within the path and drag it to another place on the grid and this new location will be updated in the Path class.
Estimated: 6 Actual: 4.5

Ticket #37: This task lets users click on any point in the grid that is a part of the path and it will give them an indication of which point was selected. Then using the textboxes on the side, they can edit the location of the point.
Estimated: 2 Actual: 2.1

Ticket #38: This ticket was the overall task of implementing a grid that would display a path to the user in a visual and easy to understand format.
Estimated: 4 Actual: 3.2

Ticket #41: This ticket was meant to test the zooming in and out functionality of the Grid but it was a duplicate ticket to #48 which included all testing of the JPlot and Grid.
Estimated: 5 Actual: 0

Ticket #48: This task is created in order to test all components of the JPlot and Grid visual components.
Estimated: 5 Actual: 9.8

Ticket #50: As a user, you should be able to add points to the graph and also delete ones you don't want. This task is supposed to accomplish this and allow a user to right click and show a menu to give the user the ability to add or delete a point.
Estimated: 1 Actual: 0.5

Ticket #62: This task was to log all of my time put into team Scrum meetings, researching lejos libraries, and other various tasks that did not directly pertain to writing code for the scrum project.
Estimated: 6 Actual: 2.5

Ticket #68: This task allows a user to switch to immediate mode which tells a robot to drive to the next point on the plot immediately ignoring all other previously sent points.
Estimated: 5 Actual: 3.5

Kevin Tohtz

#43 Code Drop Week 1 –Estimated .5 hours. Actual: 10min. Tagged the code for the project and dropped it into the SVN.

#44 Code Drop Week 2 – Estimated .5 hours. Actual: 30min. Tagged the code for the project and dropped it into the SVN, unfortunately I was locked out of my account by IT so this was more time consuming than normal. They wouldn't unlock me remotely, so I eventually used Marius's account to do the drop.

#45 Final Code Drop – Estimated .5hours. Actual: 10min Tagged the code for the project and dropped it into the SVN.

#56 Create Functions to send forward and reverse commands – Estimated: 1.5hours. Actual: 2 Hours. (Helped Joey, because he was getting crashes and error and couldn't figure out what was happening.)

#64 Administrative Kevin Tohtz – Estimated: 6hours. Actual: 6hours 30min. (Spent time administering and troubleshooting gradle, github, lejos, and their interaction with my IDE. This also includes the online meetings we had as a team based on discussing which direction and how we would proceed with the project.)

#59 Investigate Robot Tasks – Estimated: 12 hours. Actual: 1hour 30min (Researched the robot component libraries both through the API and online examples)

#61 Update Path Class – Estimated: 3 hours. Actual: 1 hour. (Had to refactor the path class a couple of times. At first the initial design of the class as a singleton had to be re worked. Second time was to refactor it to work with the Lejos libraries)

#46 Test Log Feature- Estimated 3 hours. Actual: 5 hours. (Wrote the logger test class. Testing lead to a major design flaw with the logger, which lead to rewriting the logger. That in turn led to re adjusting the logger tests to make sure that everything was working ok.)

#28 Define how data path files need to be stored and formatted –Estimated .5 hours. Actual: 15min.(Decided how to the path class was going to store and load files)

#69 Functional GUI Testing Estimated 15hours Actual 2hours (Wrote the GridTest and manually tested GUI features. This is only a portion of the automated GUI testing that we planned on finishing in sprint 2.)

Marius Volkhart

- Ticket #33
  - Prompt the user to save an active Path if it has changes and the user has selected to open/create a new Path.
  - Estimated: 2
  - Actual: 3
- Ticket #36
  - Create the bridge for what happens between the Save button being clicked and the Path actually being stored in the file.
  - Estimated: 3
  - Actual: 3

- Ticket #49
    - This was an extra task that was created before the design was complete and was made irrelevant.
    - Estimated: 0
    - Actual: 0
- Ticket #57
    - This task was created to handle the management on Gradle. Gradle is our dependency management system, similar to Maven. This ticket allotted time for initial setup as well as making it work for all our IDEs and across all our development platforms.
    - Estimated: 2
    - Actual: .5
- Ticket #60
    - This task was created for all the day-to-day tasks that have to be completed. This ranges from repository management and Trac setup to planning meeting times and creating Tasks.
    - Estimated: 0
    - Actual: 6.5
- Ticket #67
    - This task was created in preparation for integration testing of all our features. However, since no additional features were pulled into this Sprint, no code was written relating to this ticket. The hours clocked to it are research hours spent on tools and strategies.
    - Estimated: 10
    - Actual: 4
- Ticket #73
    - This task was created for a refactor of our original Path code and its dependencies. We realized technical debt and decided it should be remedied before moving forward into another sprint. Nobody knew how the Path changes would echo through the system so this one was difficult to estimate for.
    - Estimated: 1.5
    - Actual: .3