**AGMES P5 - Group 4**

**SPRINT PLANNING NOTES** 04

**Sprint number** 04

**Sprint duration** 2 weeks

**Date:** 16/9/2020

**Time:** 1715 to 1815

**Minutes**: 60

|  |  |  |  |  |  |  |
| --- | --- | --- | --- | --- | --- | --- |
| **Team** | **Product Owner** | **Scrum Master** | **Scrum Team** | | | |
| **Names** | Mohamed Ali | Si Long Leong | John Lam | Brenton Manks | Mohammed Almahdawi | Jonathan Vernik |
| **Attended** | Yes | Yes | Yes | Yes | Yes | Yes |

Sprint 04 Goals:

This sprint will be focusing on fixing any errors or unexpected failures from the last sprint in relation to the PBI’s set. The docker implementation needs to be addressed before deployment to AWS can begin. The priority requested from the product owner is deployment of the application and to fix any errors present.

The Team’s Vision for Sprint 04:

Finish the remaining PBIs

Create Sprint backlog

Burndown chart

Finish backend SpringBoot with Java8

Finish Frontend React and Javascript

Create acceptance tests

Create unit tests

Create Docker

Deploy Docker to AWS

PBIs to be Completed During this Sprint:

PBI 10 Add Employee

PBI 11 Administrator Edit Employee

PBI 21 View Booking by Date & Time

PBI 22 View Booking by Employee

PBI 23 View Booking by Service

PBI 24 Customer Edit Name

PBI 25 Customer Edit Username

PBI 26 Customer Edit Password

PBI 27 Customer Edit Own Address

Acceptance Tests

Estimation in Story Points:

PBI 10 Add Employee: 2

PBI 11 Administrator Edit Employee: 4

PBI 21 View Booking by Date & Time: 1

PBI 22 View Booking by Employee: 2

PBI 23 View Booking by Service: 1

PBI 24 Customer Edit Name: 2

PBI 25 Customer Edit Username: 2

PBI 26 Customer Edit Password: 2

PBI 27 Customer Edit Own Address: 2

Total: 18

**SPRINT PLANNING NOTES** 05

**Sprint number** 05

**Sprint duration** 2 weeks

**Date:** 30/9/2020

**Time:** 1730 to 1830

**Minutes**: 60

|  |  |  |  |  |  |  |
| --- | --- | --- | --- | --- | --- | --- |
| **Team** | **Product Owner** | **Scrum Master** | **Scrum Team** | | | |
| **Names** | Mohamed Ali | Si Long Leong | John Lam | Brenton Manks | Mohammed Almahdawi | Jonathan Vernik |
| **Attended** | No | Yes | Yes | Yes | Yes | Yes |

Sprint 05 Goals:

This sprint will focus on testing core features and continuing to connect the backend with the frontend. The technology selected for the backend is spring boot with java8, frontend is react with javascript and postman will be used for unit testing.

Deploying the project to AWS begins during this sprint. The goal is to release a version to AWS by the end of the mile stone. If there is enough time, complete deployment using kubernetes will be looked into.

The Team’s Vision for Sprint 05:

Establish as many user stories as possible

Create Sprint backlog

Burndown chart

Continue setup backend SpringBoot with Java 8

Continue setup frontend React and Javascript

Create acceptance tests.

Create unit tests.

AWS Deployment

PBIs to be Completed During this Sprint:

PBI 18 Customer Search Booking by Date

PBI 19 Customer Search Booking by Employee

PBI 20 Customer Search Booking by Service

PBI 31 Employee View Booking History

PBI 34 Employee Services

PBI 35 Employee Roster

Acceptance Tests

Estimation in Story Points:

PBI 18 Customer Search Booking by Date: 2

PBI 19 Customer Search Booking by Employee: 4

PBI 20 Customer Search Booking by Service: 2

PBI 31 Employee View Booking History: 2

PBI 34 Employee Services: 2

PBI 35 Employee Roster: 2

Total: 14

Standup meeting 15

**Sprint 04**

**Date: Wednesday 16/9/20**

**Time: 1630-1700**

**Minutes: 30**

|  |  |  |  |  |  |  |
| --- | --- | --- | --- | --- | --- | --- |
| **Team** | **Product owner** | **Scrum Master** | **Scrum Team** | | | |
| **Names** | **Mohamed Ali** | Si Long Leong | John Lam | Brenton Manks | Mohammed Almahdawi | Jonathan Vernik |
| **Attended** | **Yes** | Yes | Yes | Yes | Yes | Yes |

Si Long Leong

1. What did I accomplish yesterday?

* Sign up testing. Edit Page Front End implementation

1. What will I do today?

* Take a look at backend profile and finish the function I need, then connected to front end

1. What obstacles, if any, are impeding my progress?

* None

John Lam

1. What did I accomplish yesterday?

* Serialized booking, search by booking id is implemented

1. What will I do today?

* Unit tests, add booking and cancel booking.

1. What obstacles, if any, are impeding my progress?

* Work and other assignments, not enough time to work on code.

Brenton Manks

1. What did I accomplish yesterday?
   * Github cleaning and merging.
2. What will I do today?
   * Connect login frontend/backend.
3. What obstacles, if any, are impeding my progress?
   * Learning curve to get unit tests completed

Mohammed Almahdawai

1. What did I accomplish yesterday?
   * Worked with John on the booking
   * Worked on the user profile endpoint
2. What will I do today?
   * Continue work on add work times
3. What obstacles, if any, are impeding my progress?
   * none

Jonathan Vernik

1. What did I accomplish yesterday?
   * Continued working on the frontend continuous integration
2. What will I do today?
   * Finish off the front end integration
3. What obstacles, if any, are impeding my progress?
   * Still no luck with accessing postgres database

Standup meeting 16

**Sprint 04**

**Date: Wednesday 18/9/20**

**Time: 1730-1800**

**Minutes: 30**

|  |  |  |  |  |  |
| --- | --- | --- | --- | --- | --- |
| **Team** | **Scrum Master** | **Scrum Team** | | | |
| **Names** | Si Long Leong | John Lam | Brenton Manks | Mohammed Almahdawi | Jonathan Vernik |
| **Attended** | Yes | Yes | Yes | Yes | Yes |

Si Long Leong

1. What did I accomplish yesterday?

* Started writing the backend code for profile

1. What will I do today?

* Finish profile edit testing + acceptance testing

1. What obstacles, if any, are impeding my progress?

* none

John Lam

1. What did I accomplish yesterday?

* Search by id and add booking

1. What will I do today?

* Postman tests and acceptance testing

1. What obstacles, if any, are impeding my progress?

* Not enough time to code

Brenton Manks

1. What did I accomplish yesterday?
   * Not very much, busy with other commitments in other subjects.
2. What will I do today?
   * Integrating more frontend/backend from previous items.
3. What obstacles, if any, are impeding my progress?
   * None.

Mohammed Almahdawai

1. What did I accomplish yesterday?
   * Worked on the add work times and the functionality is complete.
2. What will I do today?
   * Work on unit tests for the functionality
3. What obstacles, if any, are impeding my progress?
   * none

Jonathan Vernik

1. What did I accomplish yesterday?
   * Did pair programming to assist with the add work time functionality
2. What will I do today?
   * Integrate more front end and back end from previous item
3. What obstacles, if any, are impeding my progress?
   * None

Standup meeting 17

**Sprint 04**

**Date: Monday 21/9/20**

**Time: 1430-1500**

**Minutes: 30**

|  |  |  |  |  |  |
| --- | --- | --- | --- | --- | --- |
| **Team** | **Scrum Master** | **Scrum Team** | | | |
| **Names** | Si Long Leong | John Lam | Brenton Manks | Mohammed Almahdawi | Jonathan Vernik |
| **Attended** | Yes | Yes | Yes | Yes | Yes |

Si Long Leong

1. What did I accomplish yesterday?

* Profile check for whether user is logged in

1. What will I do today?

* testing

1. What obstacles, if any, are impeding my progress?

* Difficulty writing frontend unit tests for mocking API and finding page elements

John Lam

1. What did I accomplish yesterday?

* Updated documents, worked on add booking

1. What will I do today?

* Finish documents that need to be update

1. What obstacles, if any, are impeding my progress?

* none

Brenton Manks

1. What did I accomplish yesterday?
   * Documentation.
2. What will I do today?
   * Finishing documentation for submission.
3. What obstacles, if any, are impeding my progress?
   * None.

Mohammed Almahdawai

1. What did I accomplish yesterday?
   * Implemented admin page and some part of add work times front end
2. What will I do today?
   * Continue the implementation of front end and do some unit test on the backend
3. What obstacles, if any, are impeding my progress?
   * none

Jonathan Vernik

1. What did I accomplish yesterday?
   * Finished backend .yml file for CI
2. What will I do today?
   * FInish up the frontend.yml file for CI
3. What obstacles, if any, are impeding my progress?
   * No obstacles

Standup meeting 18

**Sprint 04**

**Date: Friday 25/9/20**

**Time: 1730-1800**

**Minutes: 30**

|  |  |  |  |  |  |
| --- | --- | --- | --- | --- | --- |
| **Team** | **Scrum Master** | **Scrum Team** | | | |
| **Names** | Si Long Leong | John Lam | Brenton Manks | Mohammed Almahdawi | Jonathan Vernik |
| **Attended** | Yes | Yes | Yes | Yes | Yes |

Si Long Leong

1. What did I accomplish yesterday?

* Making a booking in the backend

1. What will I do today?

* Continue working on Booking

1. What obstacles, if any, are impeding my progress?

* None

John Lam

1. What did I accomplish yesterday?

* Worked on documentation for this sprint

1. What will I do today?

* Need to work on other assignments first then will help Si and Brent with any testing

1. What obstacles, if any, are impeding my progress?

* Assignment work from other courses

Brenton Manks

1. What did I accomplish yesterday?
   * Working on the bookings pages to display customer search by date, employee and service.
2. What will I do today?
   * Continuing work on these 3 sections.
3. What obstacles, if any, are impeding my progress?
   * None.

Mohammed Almahdawai

1. What did I accomplish yesterday?
   * Implemented admin page and some part of add work times front end
2. What will I do today?
   * Continue the implementation of front end and do some unit test on the backend
3. What obstacles, if any, are impeding my progress?
   * none

Jonathan Vernik

1. What did I accomplish yesterday?
   * Started researching on how to write a docker
2. What will I do today?
   * Continue to research on Docker
   * Might try to start coding the docker and get it set up
3. What obstacles, if any, are impeding my progress?
   * No obstacles

Standup meeting 19

**Sprint 04**

**Date: Monday 28/9/20**

**Time: 1430-1500**

**Minutes: 30**

|  |  |  |  |  |  |
| --- | --- | --- | --- | --- | --- |
| **Team** | **Scrum Master** | **Scrum Team** | | | |
| **Names** | Si Long Leong | John Lam | Brenton Manks | Mohammed Almahdawi | Jonathan Vernik |
| **Attended** | Yes | yes | Yes | No | No |

Si Long Leong

1. What did I accomplish yesterday?

Worked on Booking functions

1. What will I do today?

Work on Booking function

1. What obstacles, if any, are impeding my progress?  
    None

John Lam

1. What did I accomplish yesterday?

* Worked on documentation for this sprint, researched booking code in preparation for testing

1. What will I do today?

* Start testing and continue with documentation

1. What obstacles, if any, are impeding my progress?

* None

Brenton Manks

1. What did I accomplish yesterday?
   * Working on the bookings pages to display customer search by date, employee and service.
2. What will I do today?
   * Still working on these 3 sections.
3. What obstacles, if any, are impeding my progress?
   * Pressure from assessment items due in other subjects, should be freed from those from late Thursday.

Mohammed Almahdawai

1. What did I accomplish yesterday?
   * Implemented admin page and some part of add work times front end
2. What will I do today?
   * Continue the implementation of front end and do some unit test on the backend
3. What obstacles, if any, are impeding my progress?
   * none

Jonathan Vernik

1. What did I accomplish yesterday?
   * Did just a bit more research on docker
   * Assisted with the creation of documentation
2. What will I do today?
   * Continue to research on Docker
   * Work with Mohammed to do the docker
3. What obstacles, if any, are impeding my progress?
   * Assignments from different subjects.
   * Other than that all good.

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Standup meeting 20

**Sprint 05**

**Date: Wednesday 30/9/20**

**Time: 1700-1730**

**Minutes: 30**

|  |  |  |  |  |  |
| --- | --- | --- | --- | --- | --- |
| **Team** | **Scrum Master** | **Scrum Team** | | | |
| **Names** | Si Long Leong | John Lam | Brenton Manks | Mohammed Almahdawi | Jonathan Vernik |
| **Attended** | Yes | yes | Yes | Yes | No |

Si Long Leong

1. What did I accomplish yesterday?

* Display booking and make booking working in the front end

1. What will I do today?

* Complete cancel booking for backend

1. What obstacles, if any, are impeding my progress?

* limiting display booking details returned from backend

John Lam

1. What did I accomplish yesterday?

* Documentation and researched testing

1. What will I do today?

* Helping Si and Brenten test

1. What obstacles, if any, are impeding my progress?

* None

Brenton Manks

1. What did I accomplish yesterday?

* Integrated a calendar date picker for search by date, dropdown for search by employee and service.

1. What will I do today?

* Need to code the search by elements to draw from the database.

1. What obstacles, if any, are impeding my progress?

* None.

Mohammed Almahdawai

1. What did I accomplish yesterday?

* Implemented docker front end
* Implemented docker back end

1. What will I do today?

* Fix docker back end issues with the database

1. What obstacles, if any, are impeding my progress?

* Docker database issues with backend

Jonathan Vernik

1. What did I accomplish yesterday?

* Work with Mohammed to finish docker

1. What will I do today?

* Assist Mohammed where he needs

1. What obstacles, if any, are impeding my progress?

* None

Standup meeting 21

**Sprint 05**

**Date: Friday 2/10/20**

**Time: 1730-1800**

**Minutes: 30**

|  |  |  |  |  |  |
| --- | --- | --- | --- | --- | --- |
| **Team** | **Scrum Master** | **Scrum Team** | | | |
| **Names** | Si Long Leong | John Lam | Brenton Manks | Mohammed Almahdawi | Jonathan Vernik |
| **Attended** | Yes | yes | Yes | Yes | No |

Si Long Leong

1. What did I accomplish yesterday?

* Cancel booking backend and frontend

1. What will I do today?

* Implement the 48 hours check for cancel booking and

1. What obstacles, if any, are impeding my progress?

* none

John Lam

1. What did I accomplish yesterday?

* Make documentation submission read, start testing

1. What will I do today?

* Finish another assignment and start testing

1. What obstacles, if any, are impeding my progress?

* none

Brenton Manks

1. What did I accomplish yesterday?

* Yesterday and today has been completing external subject tests.

1. What will I do today?

* Try to create the first complete search, the remainder should just be variations of the first.

1. What obstacles, if any, are impeding my progress?

* Need assistance with setup of pull available bookings, filter to complete search functions.

Mohammed Almahdawai

1. What did I accomplish yesterday?

* Debug docker front end
* Debug docker back end

1. What will I do today?

* Fix docker back end issues with the database

1. What obstacles, if any, are impeding my progress?

* Docker database issues with backend

Jonathan Vernik

1. What did I accomplish yesterday?

* Tried to get the docker to work

1. What will I do today?

* Keep on trying on to fix the docker

1. What obstacles, if any, are impeding my progress?

* Assignments for other subjects

## 

Standup meeting 22

**Sprint 05**

**Date: Monday 2/10/20**

**Time: 1430-1500**

**Minutes: 30**

|  |  |  |  |  |  |
| --- | --- | --- | --- | --- | --- |
| **Team** | **Scrum Master** | **Scrum Team** | | | |
| **Names** | Si Long Leong | John Lam | Brenton Manks | Mohammed Almahdawi | Jonathan Vernik |
| **Attended** | Yes | Yes | Yes | Yes | Yes |

Si Long Leong

1. What did I accomplish yesterday?

Tested Cancel booking

1. What will I do today?

Continue with testing

1. What obstacles, if any, are impeding my progress?

None

John Lam

1. What did I accomplish yesterday?

* Testing for backend and frontend

1. What will I do today?

* Testing backend and frontend

1. What obstacles, if any, are impeding my progress?

* Software testing

Brenton Manks

1. What did I accomplish yesterday?

* Implementing selectors.

1. What will I do today?

* Mohammed is having a look over work. Might convert to hardcoded data.

1. What obstacles, if any, are impeding my progress?

* None.

Mohammed Almahdawai

1. What did I accomplish yesterday?

Research about Kubernetes

1. What will I do today?

Continue researching About Kubernetes

1. What obstacles, if any, are impeding my progress?

None

Jonathan Vernik

1. What did I accomplish yesterday?

* Completed the backend and frontend docker compose
* Started setting up AWS with Terraform

1. What will I do today?

* Complete the setup for AWS and terraform

1. What obstacles, if any, are impeding my progress?

* None

Standup meeting 23

**Sprint 05**

**Date: Friday 9/10/20**

**Time: 1730-1800**

**Minutes: 30**

|  |  |  |  |  |  |
| --- | --- | --- | --- | --- | --- |
| **Team** | **Scrum Master** | **Scrum Team** | | | |
| **Names** | Si Long Leong | John Lam | Brenton Manks | Mohammed Almahdawi | Jonathan Vernik |
| **Attended** | Yes | Yes | Yes | Yes | Yes |

Si Long Leong

1. What did I accomplish yesterday?

* Tidied up backend code for booking, pushed to github. Updated frontend code and changed the view

1. What will I do today?

* Add front end unit test for make booking and cancel booking

1. What obstacles, if any, are impeding my progress?

* none

John Lam

1. What did I accomplish yesterday?

* Testing for backend and frontend

1. What will I do today?

* Testing backend and frontend and getting documents submission ready

1. What obstacles, if any, are impeding my progress?

* none

Brenton Manks

1. What did I accomplish yesterday?

* Customer Booking Search completed. Pushing to Git.

1. What will I do today?

* Unit testing for frontend.

1. What obstacles, if any, are impeding my progress?

* None.

Mohammed Almahdawai

1. What did I accomplish yesterday?

Research about kubernetes

1. What will I do today?

Implemented Kubernetes

1. What obstacles, if any, are impeding my progress?

None

Jonathan Vernik

1. What did I accomplish yesterday?

* Completed the backend and frontend docker compose
* Started setting up AWS with Terraform

1. What will I do today?

* Complete the setup for AWS and terraform

1. What obstacles, if any, are impeding my progress?

* None

Standup meeting 24

**Sprint 05**

**Date: Monday 12/10/20**

**Time: 1430-1500**

**Minutes: 30**

|  |  |  |  |  |  |
| --- | --- | --- | --- | --- | --- |
| **Team** | **Scrum Master** | **Scrum Team** | | | |
| **Names** | Si Long Leong | John Lam | Brenton Manks | Mohammed Almahdawi | Jonathan Vernik |
| **Attended** | Yes | Yes | Yes | Yes | Yes |

Si Long Leong

1. What did I accomplish yesterday?

Testing front end

1. What will I do today?

Continue with tests

1. What obstacles, if any, are impeding my progress?

None

John Lam

1. What did I accomplish yesterday?

Testing and documentation

1. What will I do today?

Testing and Documentation

1. What obstacles, if any, are impeding my progress?

None

Brenton Manks

1. What did I accomplish yesterday?

Documentation/Testing.

1. What will I do today?

Frontend testing.

1. What obstacles, if any, are impeding my progress?

None.

Mohammed Almahdawai

1. What did I accomplish yesterday?

Worked on AWS

1. What will I do today?

Continue to work on AWS

1. What obstacles, if any, are impeding my progress?

None

Jonathan Vernik

1. What did I accomplish yesterday?

Worked on AWS

1. What will I do today?

Continue to work on AWS

1. What obstacles, if any, are impeding my progress?

None

## 

SPRINT RETRO NOTES 04

**Sprint number** 4

**Sprint duration** 2 weeks

**Date:** 30/9/20

**Time:** 1715 to 1815

**Minutes**: 60

|  |  |  |  |  |  |  |
| --- | --- | --- | --- | --- | --- | --- |
| **Team** | **Product Owner** | **Scrum Master** | **Scrum Team** | | | |
| **Names** | Mohamed Ali | Si Long Leong | John Lam | Brenton Manks | Mohammed Almahdawi | Jonathan Vernik |
| **Attended** | Yes | Yes | Yes | Yes | Yes | Yes |

1. Things That Went Well

The team has equally shared the workload and all still committed to the work required and communication has improved. Team members are regularly hosting tutorials so the members involved understand where help is needed. We have decided to do pair coding to be more efficient and to reduce the amount of meetings required to explain code or to test code.

This Sprint required a milestone 2 submission which took a significant amount of time and effort. The team focused on the release and the submission of documentation which slowed down coding progress. This resulted in less PBI’s being completed but we were much more efficient completing more tasks even though less PBI’s expected to be completed.

2. Things That Could Have Gone Better

**John**: Needs better time management but by pair coding with Brent and Si, A lot can be accomplished with much less time.

**Mohammed**: Deployment to docker took much longer than expected

**Jonathan**: Had issues with Docker and AWS. Took much longer than expected to fix errors.

**Brenton**: There has been somewhat a slowdown in git commits. Work is still being done, however as changes aren’t being pushed and therefore shared, it has made it a bit harder to work with more recent code locally. It has sometimes made for surprises at sharing meetings.

**Si Long**: It could have been better if the sprint has started earlier due to the previous sprint which took longer than the supposed ending date to fix up some minor issues, this sprint felt as if it had less time

3. Things That Surprised Us

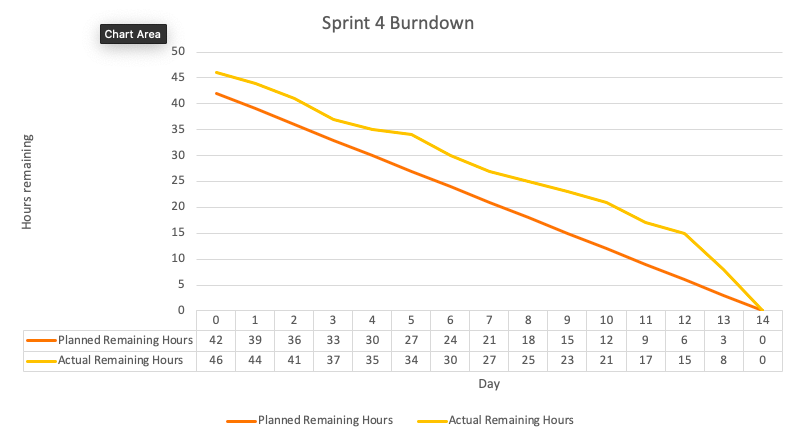
Getting a handle on CI/CD has taken some time and working as a team has helped. The setup and deployment with Docker and then with AWS has needed more attention than we anticipated with Postgres, but hope to have this resolved soon now.

4. Lessons Learned

As we improve our communication and divide our tasks further with pair coding, we have reduced a significant amount of time needed to complete PBI’s. We need to communicate more and we need to divide out work more as we get close to release.

5. Final Thoughts

Each member has a strong grasp of what needs to be accomplished before the next milestone submission. We all need to commit more and push to finish the last PBI’s. We need to focus more on unit testing and acceptance tests. As a result of the previous sprints have improved our focus and we have a strong understanding of each role in this scrum.



Although there were initially different planned hours and actual hours, all goals were completed by the end of the sprint. The increase in actual hours on Day 5 was a result of introducing pair programming. Some members required extra support to finish the task. Even though this increased hours, the PBI’s finished were more efficient and allowed us to prepare for the final sprint.

**SPRINT RETRO NOTES 05**

**Sprint number** 5

**Sprint duration** 2 weeks

**Date:** 14/10/20

**Time:** 1715 to 1815

**Minutes**: 60

|  |  |  |  |  |  |  |
| --- | --- | --- | --- | --- | --- | --- |
| **Team** | **Product Owner** | **Scrum Master** | **Scrum Team** | | | |
| **Names** | Mohamed Ali | Si Long Leong | John Lam | Brenton Manks | Mohammed Almahdawi | Jonathan Vernik |
| **Attended** | Yes | Yes | Yes | Yes | Yes | Yes |

**1. Things That Went Well**

**Si Long Leong:** Having more than one member working on the front end and back end reduced the amount of learning required to get started and can receive assistance more easily because another member is already doing something similar.

**John Lam:** Communication between team (updates and willingness to teach or help each other).

**Brenton Manks:** Frequent team meetings. Helped produced cohesive project

**Mohammed Almahdawi:** Translating the assignment specifications to a real world product.

**Jonathan Vernik:** Pair programming and the constant communication between teammates.

**2. Things That Could Have Gone Better**

**Si Long Leong:** Have more assistance with front end testing. Maybe plan out the structure of the code so that testing can be easier.

**John Lam:** Having more tutorials and assistance with coding.

**Brenton Manks:** More frequent Git commits.

**Mohammed Almahdawi:** Deploy the application to production with Kubernetes.

**Jonathan Vernik:** Have a bit more direction with Continuous Integration.

**3. Things That Surprised Us**

**Si Long Leong:** Testing for the front end is difficult. More difficult than expected because the structure of the code does not allow the code to be easily tested, especially with forward reference and functions inside the function.

**John Lam:** Operating systems affecting coding. Had issues with database initialising due to using windows 10 home edition.

**Brenton Manks:** Learning curve to new tools.

**Mohammed Almahdawi:** Exposure to new technologies and concepts every one or two weeks.

**Jonathan Vernik:** Learning and applying new knowledge to different tools every week.

**4. Lessons Learned**

**Si Long Leong:** Ask for help, because more than one person solving a problem is quicker. Also, dividing the work in ways that allows members to focus on specific tasks can improve productivity

**John Lam:** Don’t try to do everything. Use your strengths to contribute

**Brenton Manks:** When committed, a project can work great

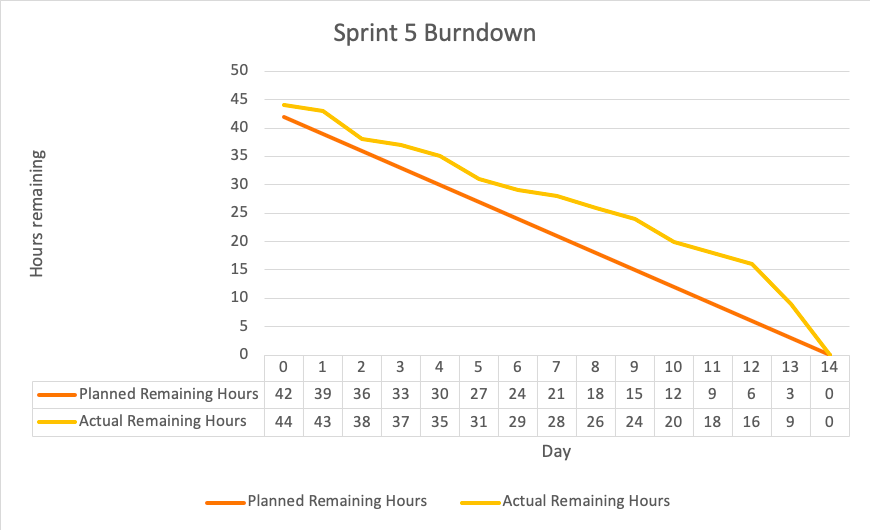
**Mohammed Almahdawi:** Proper use of github can make life easier.

**Jonathan Vernik:** That communication and self drive from each team member is key to a good project.

**5. Final Thoughts**

This Sprint tested our time management skills to the upper limit. With everyone Having other assignments and exams to complete, we were forced to prioritise the most important aspects of the project. With frequent team meetings and the teams willingness to assist each other, we were able to successfully complete and submit the project.

Burndown Chart



We planned to have to have 42 working hours for this sprint. The difference in planned vs expected is due to extra assignment and examinations that took place during this sprint. As a result other team members had to provide extra support for each other. Although pair programming was implemented, at the end we were able to achieve the sprint goals despite the fact we faced extra difficulties.