Afeka - Integrative SE Course

Project Summary

YouSport

Submitted By

Vladislav Oroda 333865775 | **Vladislav Beil** 311848576 |

Sergei Muhin 313922882 | **Vladislav Chebanov** 323682294 |

Amir Litan 021661087

January 10th, 2021

Table of Contents

Sprint #5 - Progress Report

Integrative Software Engineering Course

Sunday 17:00-22:00 Semester A 2020-2021

Submitted By:

Vladislav Oroda, Vladislav Beil, Sergei Muhin, Vladislav Chebanov, Amir Litan

On **10/01/21** 17:00 for:
Sprint #**5** 20/12/20 - 10/01/21

General Overview of the Project

Our System will focus on the “Digital Twins” representation of various courts, public parks and or locations that allow people to exercise, play team sports and improve their physical health in the process.We aim to target places such as basketball courts, outdoor gyms, tennis courts and more.

The System will allow users:

- Filter locations based on the users activity preferences.
- Update a locations status based on real life state (Closed/Occupied/In repair/etc)
- Be informed about the location's opening hours (If there are any).
- Know if the location requires booking in advance, if so - display the required price.
- Let other users know if a location is temporarily unavailable.

A typical user will be able to select a sporting activity i.e Basketball and only see locations that allow him to play Basketball, as such - football fields / tennis courts and other locations will not be shown.

Sprint Goals

The purpose of this fifth and final sprint was to finish developing our "**Digital Twins**" system project by completing some of our unfinished work and developing the client side of our application.

Our main goals for this sprint were:

- Implement Pagination for some of our methods.
- Add user role validation.
- Expand the invokeOperation method to fit the needs of our project.
- Expand our testing.
- Connect our application to a remote database.
- Develop our client side application using Angular.
- Connect our client to the server.
- Finish the PRD.
- Create a presentation.
- Write a project summary document.

Team

Name	ID	Role	Trello Avatar
Vladislav Beil	311848576	Team / Team Leader / Product Owner	
Vladislav Oroda	333864775	Team / Technical Writer	
Sergei Muhin	313922882	Team / DevOps / UI/UX Engineer	
Vladislav Chebanov	323682294	Team / DBA	
Amir Litan	021661087	Team / QA Engineer / UI/UX Engineer	

General Summary of Work

- ### What went well for the team and should be continued on the next phase of work?

  Sprint #5 proved to be the most difficult one for our team. We've had a lot of difficulties with the client side and last minute bug discoveries which hindered our ability to progress by a large amount. Nevertheless, the team adapted well to the situation and was able to fix most of the difficulties we encountered through teamwork and communication. If we had to work on an additional project together - the ability to adapt and overcome difficulties in the last moment thanks to effective communication would benefit us greatly down the line.

- ### What should be improved in teamwork?

  We think that we could improve a lot in the distribution of tasks. The tasks should have been split more evenly between the team members to prevent a situation where one team member does the work of several other teammates in the last stretch of the sprint. In addition, if a task seems too difficult to be accomplished by a single team member - we should let other team members know in an early stage of work to prevent last second crunch by other team members.

- ### What problems did the team encounter through this phase of work?

  As mentioned before, poorly distributed tasks forced us to focus on work that should have been already done, when we should have been working on different things instead. In addition, time estimates for several tasks proved to be false leading us to last minute crunch in order to complete the project successfully.

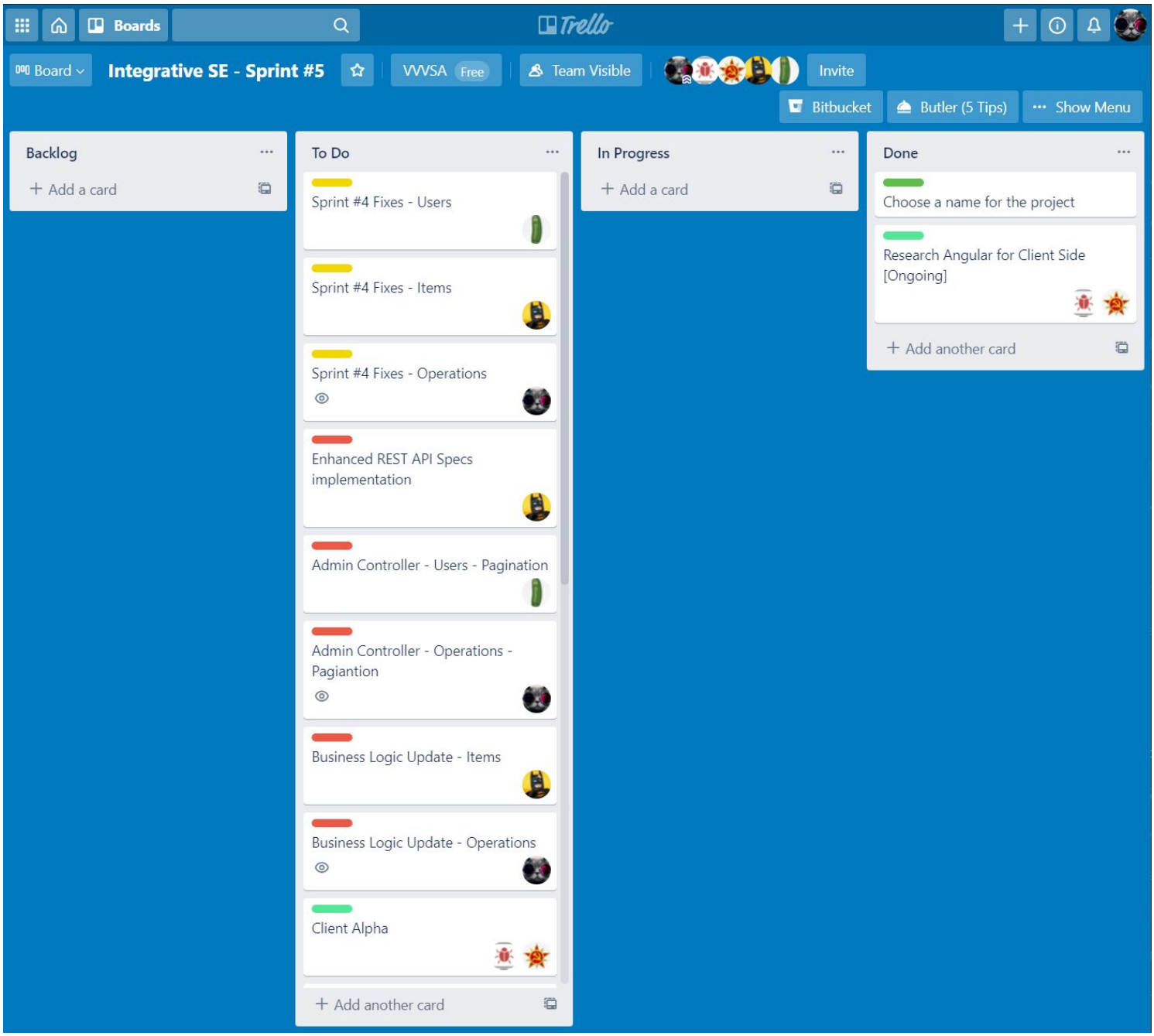
- ### Why did we not complete all planned work?

  As mentioned above, some additional tasks or features we planned to implement were abandoned due to poor task and time management by our team. Nevertheless, the core functionality of our project was successfully implemented.

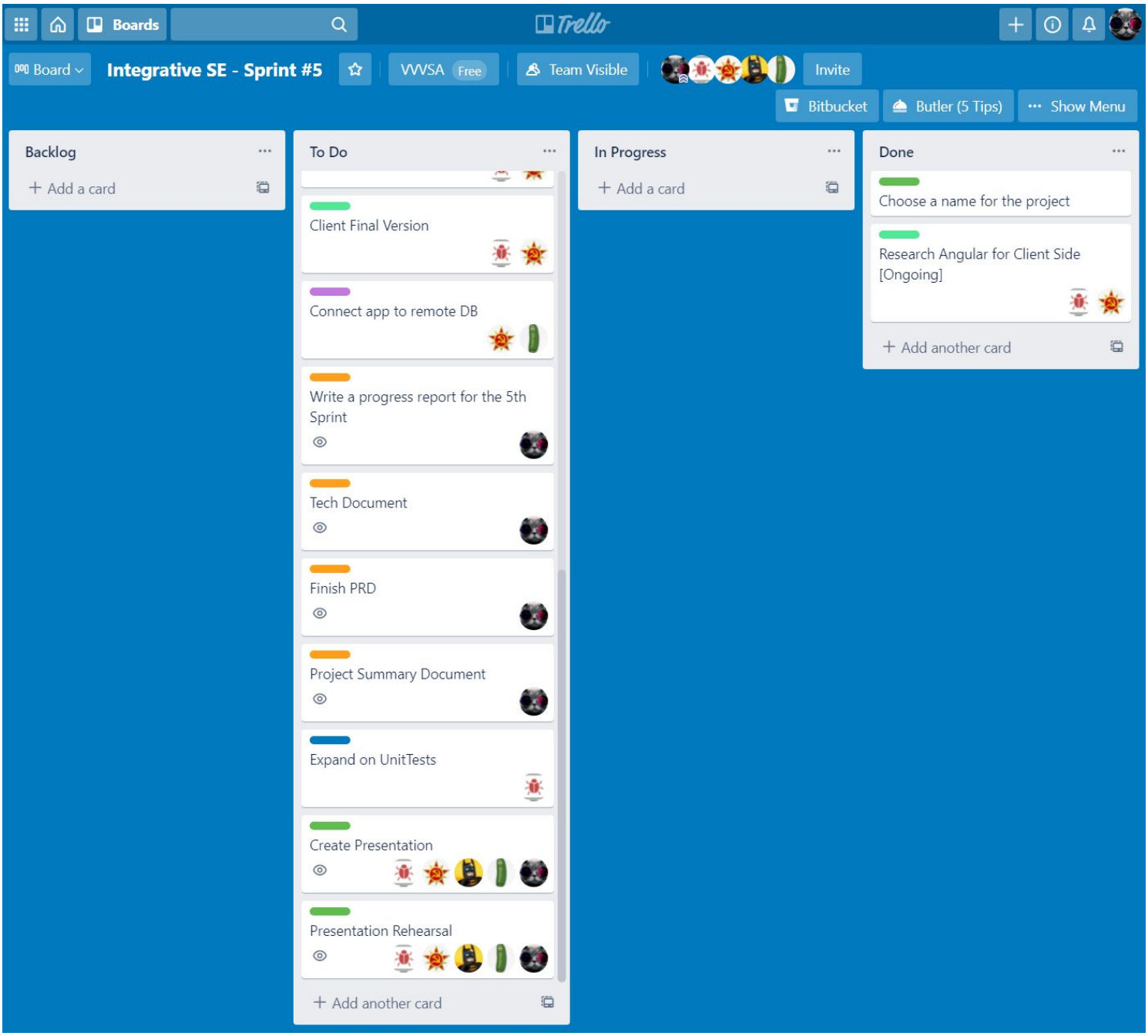
Kanban Boards

- **Start of Sprint - Taken on: 22/12/20**
- **Split into two snapshots due to high amount of tickets**

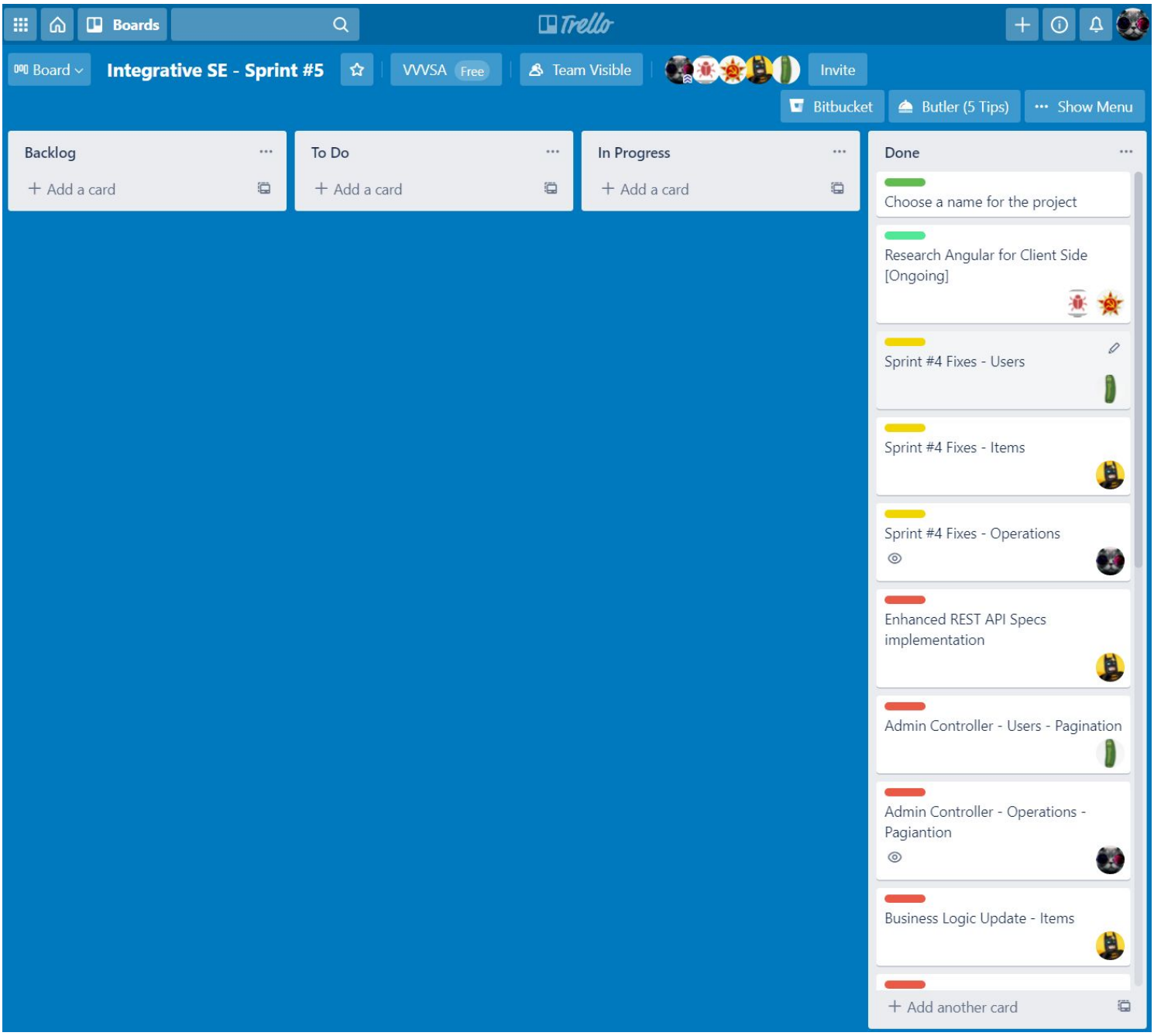
Part 1/2



Part 2/2


Boards
Trello
Board
Integrative SE - Sprint #5
VVVSA
Free
Team Visible
Invite
Bitbucket
Butler (5 Tips)
Show Menu
Backlog
Add a card
To Do
Client Final Version
Connect app to remote DB
Write a progress report for the 5th Sprint
Tech Document
Finish PRD
Project Summary Document
Expand on UnitTests
Create Presentation
Presentation Rehearsal
Add another card
In Progress
Add a card
Done
Choose a name for the project
Research Angular for Client Side [Ongoing]
Add another card

- **End of Sprint - Taken on: 09/01/21**



Project Requirements Document

1 - Introduction

Our System will focus on the “Digital Twins” representation of various courts, public parks and or locations that allow people to exercise, play team sports and improve their physical health in the process.We aim to target places such as basketball courts, outdoor gyms, tennis courts and more.

The System will allow users:

- Filter locations based on the users activity preferences.
- Update a locations status based on real life state (Closed/Occupied/In repair/etc)
- Be informed about the location's opening hours (If there are any).
- Know if the location requires booking in advance, if so - display the required price.
- Let other users know if a location is temporarily unavailable.

1.1 - Purpose of the System

The main purpose of our application is to allow people who are interested in sporting activities to exercise in appropriate locations by eliminating the irrelevant places for them. Allowing users to find the relevant court for their need ahead of time should ease the process of going to exercise and take care of their physical health.

A typical user will be able to select a sporting activity i.e Basketball and only see locations that allow him to play Basketball, as such - football fields / tennis courts and other locations will not be shown.

1.2 - Scope of the System

For the scope of this project we have chosen to focus on the basic requirements of such a software to provide a minimum viable product for a user to experience.

Due to the limited time and ability, we chose to focus on the following:

- Searching for locations based on sport preference and distance
- The ability to view the locations opening hours (if relevant)
- View a photo of the location ahead of arrival
- Know the current status of a locations i.e Occupied/Closed/Being Repaired and more
- The ability to add a sport to a location if needed
- Know ahead of time if a location requires some kind of payment to use

Out of scope:

- Live geolocation of the user
- User authentication and security
- Live Weather information at a location
- The ability to advertise private locations
- Location ratings
- Scheduling and renting courts ahead of time
- Real time updates about the location

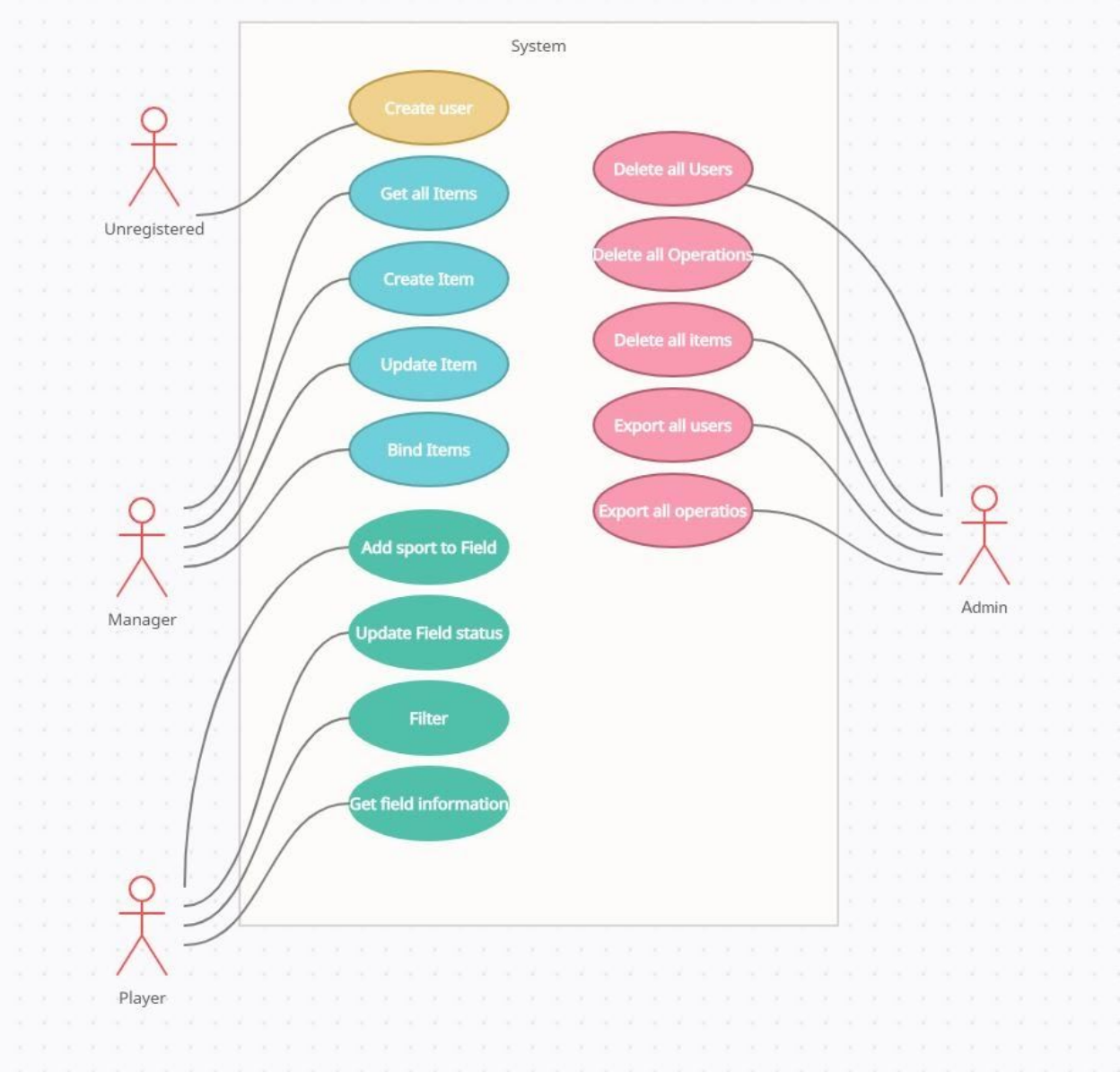
2 - Actors and Goals

1. **Player**
    - **Role** - Primary
    - **Description** - A person who is interested in using our application to locate relevant sporting locations around him
    - **Goals** - Locate relevant sporting locations in order to ease the process of going out to exercise and improve their physical health
2. **Manager**
    - **Role** - Secondary
    - **Description** - A person who can add and manage items in our system
    - **Goals** - Provide the sporting locations for our users to query
3. **Admin**
    - **Role** - Secondary
    - **Description** - A person who is responsible for the administration of our system with the ability to delete and export our data outside the system
    - **Goals** - Manage the system with operations such as export data / delete data

3 - Functional Requirements

1. The ability to sign up to use the application
2. The ability to log in with a registered account
3. The ability to update a users profile
4. The ability to filter locations based on sporting preferences
5. The ability to filter locations based on distance the user is willing to travel
6. The ability to view a location's status (Closed/In Repair/ etc..)
7. The ability to view a location’s opening hours if relevant
8. The ability to view a location’s required entry fee if relevant
9. The ability to update a location’s state to let others know if the location status has changed
10. The ability to add a sporting activity to the location if the location is not updated to support it in the application
11. The ability to view a location’s photo ahead of arrival to know the condition of the location

3.1 - Use Case Diagram



3.2 - Use Case Details

- Name: **Create User**

  Goals: Create a new user to access the application's functionality

  Participating: User

  Basic Workflow

  1. Enter web application
  2. Navigate to the sign up form
  3. Fill form
     - If the user tries to sign up with an existing email address - the user will be overwritten since authentication is not in the scope of our project
  4. Once the user is created - Log into the application

- Name: **Filter locations**

  Goals: Filter locations based on the user's preferred sporting activity and distance

  Participating: User

  Basic Workflow

  1. Enter web application
  2. Log in
  3. Choose the preferred sporting activity and the distance the user is willing to travel to reach the location
     - If there are locations matching the users requirements and they are considered active in the system - he will be able to see the locations on the map for further interaction

- Name: **Get a locations information**

  Goals: Get relevant information on the location the user has chosen

  Participating: User

  Basic Workflow

  1. Enter the web application
  2. Log into the system
  3. Filter a location based on the preferences
  4. Once the relevant locations show up on the map - Clicking on one of them opens a new alert with the relevant information of the location with information such as Opening hours, Required Price, Sporting activities and location status

- Name: **Update a location's status**

  Goals: Update a location's status if the status changes

  Participating: User

  Basic Workflow

  1. Enter the web application
  2. Log into the system
  3. Filter a location based on the preferences
  4. Once the relevant locations show up on the map - Clicking on one of them opens a new alert with the relevant information of the location.
  5. Clicking on the "Gear" icon opens the window to edit the location's properties. There the user can update the location's status and additional properties

- Name: **Add a sporting activity to a location**

  Goals: Add a sporting activity to a location if the location is not updated to support the relevant sporting activity

  Participating: User

  Basic Workflow

  1. Enter the web application
  2. Log into the system
  3. Filter a location based on the preferences
  4. Once the relevant locations show up on the map - Clicking on one of them opens a new alert with the relevant information of the location.
  5. Clicking on the “Gear” icon opens the window to edit the location’s properties.
  6. Clicking on the “Click To Add Sports” button opens a new window
  7. There the user can add a sporting activity to allow the location to support a new sporting activity

4 - Non functional requirements

- Usability - Our project comes with a user friendly interface in a form of a web application which allows users to easily navigate through the relevant locations in a few simple steps
- Reliability - Since our server and database are running on a limited plan, longer term reliability and large amounts of requests are not applicable to our scope
- Performance - N/A
- Supportability - Our system is accessible through all the main browsers such as Chrome/Firefox/Edge/Opera and supports all operating systems capable of running a browser on them

Technology Document

YouSport

Digital Twins System

Sporting Locations

Front End	Back End	Data Storage
Angular	Spring Web Framework Hibernate	MySQL

- **RESTful API was used to communicate between the front end and the backend of our application**
- **The database server is hosted on the Amazon RDS (Relational Database Service) server. The engine we have chosen is MySQL.**
- **To provide world accessibility we have opened Amazon EC2 virtual pc to host our Spring WEB application on.**

Testing tools and software

Front End	Back End	Data Storage
Postman	JUnit	H2

General Summary of the Project

Project Conclusions

- ### What worked well and should be continued in future projects in the industry?

  Throughout the project the team was able to adapt quickly to difficulties and complications that popped up last minute - This is something we hope we could be able to do when we are involved in future projects in the industry.

  In addition, working together on a project without ever actually coming face to face with our teammates proved to be easier than expected - something that might be beneficial to us in the future in case we are required to work with people who are in other places on the globe and have a different timezone to us.

  The last thing was teamwork - multiple times we had difficulties with certain tasks that were easily solved by teamwork and communication. We never had a situation where one team member couldn't complete their task and other teammates refused to help. This is something that we hope will continue in the future, regardless of the team we will have.

- ## How could we improve our work in future projects?

  We think we could improve in 3 major areas:

  1. Defining requirements early - Even though we agreed on the system's functionality in the kickoff meeting, some aspects were unclear and the deeper we dove into the project the harder it was to keep track of what's in scope and what is out of scope. If we define hard limits for our system at an early stage - much confusion and misunderstanding can be avoided.
  2. Testing - We should put more effort into developing automated tests to ease the testing process of our application after each change. Manual testing through Postman took way too much time which could have been used to develop additional functionality for our application. Instead of leaving the automated testing development to a single team member, each team member should have contributed their part when they add/change functionality to ease the development down the stretch.
  3. Communication - We should probably do more sync meetings to know how each team member is advancing with their tasks and be able to provide the appropriate feedback or be able to prioritise different tasks accordingly.

- ## What did we enjoy the most during the project?

  We think that the most enjoyable part of our project was seeing how in a short amount of time we can develop a minimum viable product that can be expanded upon further down the line.

  At the start of the project it was hard to imagine how we are going to develop our idea into an actual application but as we advanced through the course we started seeing how things fit together and come together to form an application that can be used by actual people.

  In addition, working on a project of this scope was much easier and more effective with the AGILE methodology. Seeing the improvement each sprint was both beneficial and motivating as opposed to projects we've had in the past - where we were given 1 month at the end of the semester to build something from scratch.

- ## What would we do differently if we started from the beginning?

  As mentioned above, several key aspects would have to be defined at the beginning of the project:

  1. Communication - We should have scheduled more sync meetings the further we got into the project. At the start we had 1-2 meetings and we had no problems with that.

     When the amount of required work increased our amount of meetings didn't scale appropriately which led to some confusion about the state of our work. Scheduling more meetings to fit the complexity of tasks in the project would help us tremendously.

  2. Testing - Manual testing was acceptable at the start but the more complex the project got the harder it was to maintain. We should have put more effort into automating the testing process to allow us to advance quicker and improve the quality of our work. In retrospect - when someone finished working on a feature he should have added/adjusted the required tests to ease the work of other team members.

  3. Requirements - Turns out, verbal agreement wasn't enough for us midway through the project. There was some confusion about the core functionality of our application when we started working on the client which led to wasted time that could have been spent better in other aspects of the project i.e testing/improving the code/ adding functionality and more.

- ## How working remotely affected our project?

We think that working remotely was really beneficial to our project.

Besides simulating the experience of working remotely with people we never met in real life we had a lot of positive effect on the project due to the fact that we didn't have to travel to the campus for the lectures.

Being able to log into a remote class from wherever was really convenient since most of our team members are currently working and some of us have families and kids that need attention in the evening hours.

Not having to slog through traffic jams and real life complications just to make it to class allowed us to focus on our learning and making the final project better.

We even think that if some other courses switched to remote learning we would have more academic success and better overall performance.

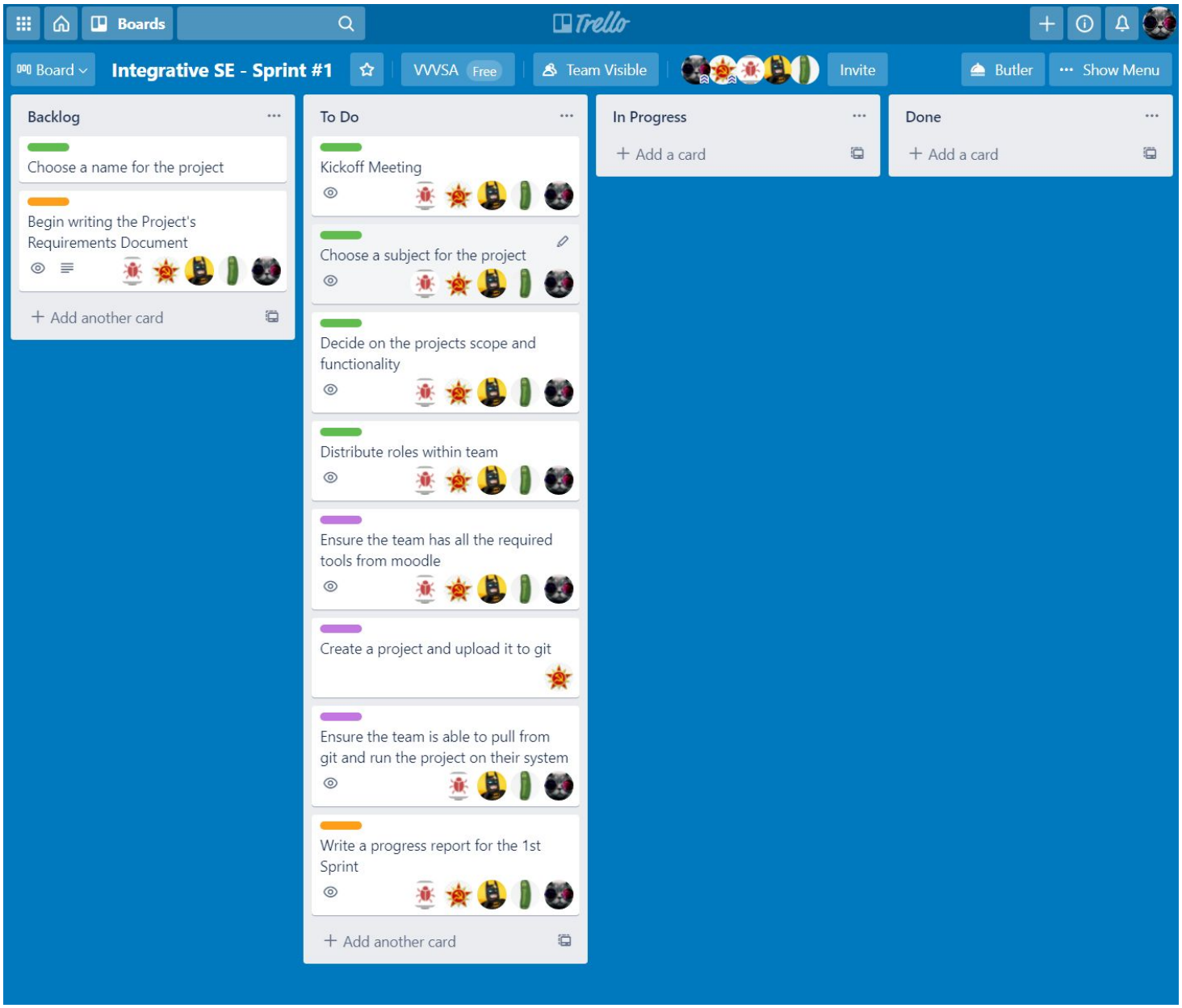
Having a course end at 10pm is difficult enough even with remote learning. It's hard to imagine being focused and effective if we had to sit in a small crowded room in the campus.

Overall - Working remotely greatly benefitted our project and we hope that we can implement some of the lessons we learned during the project in further projects and adventures :) .

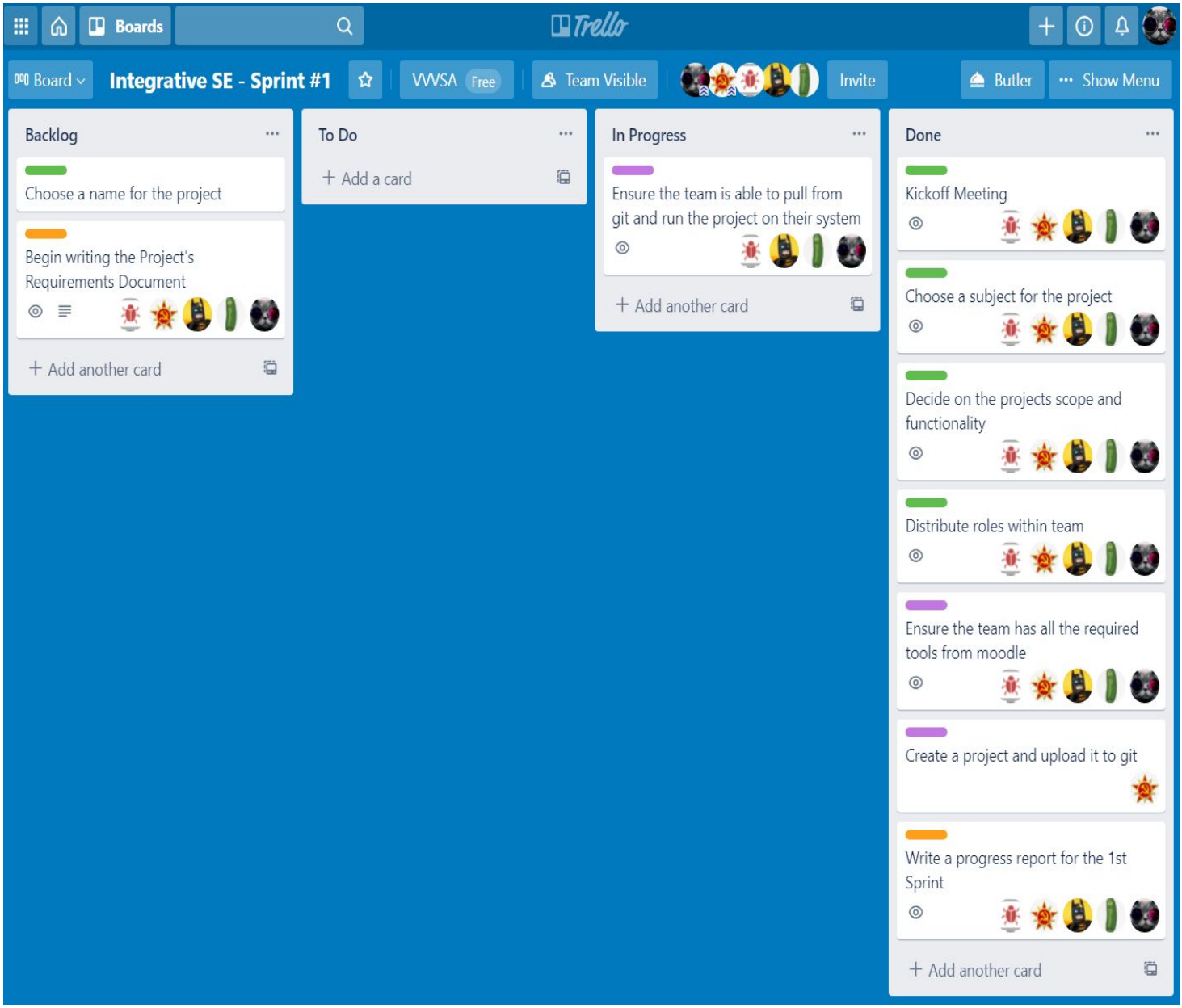
Project Kanban Boards

- ### Sprint #1

  Sprint Start - Kanban board taken on **29/10/20**

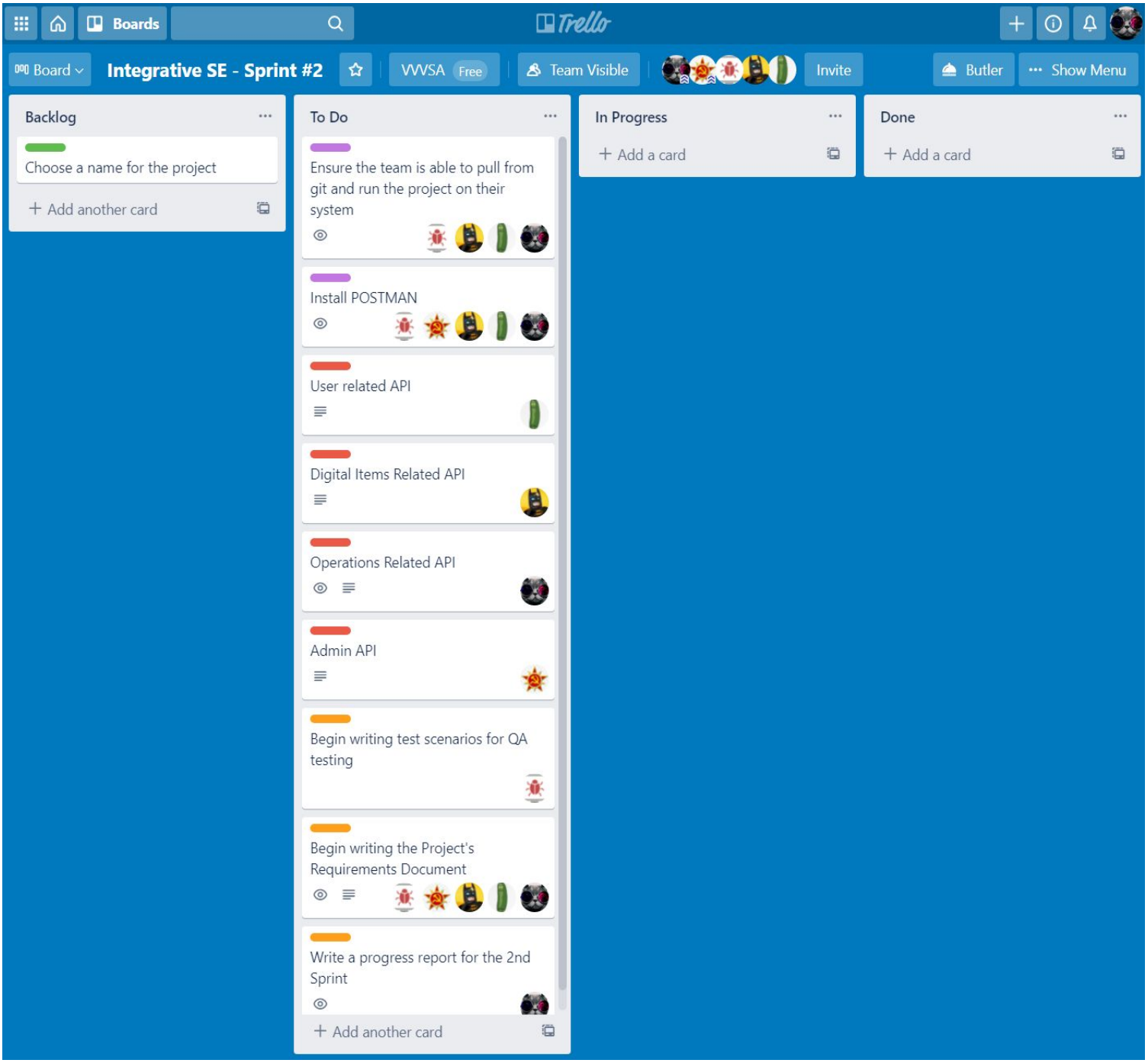


Sprint End - Kanban board taken on **01/11/20**

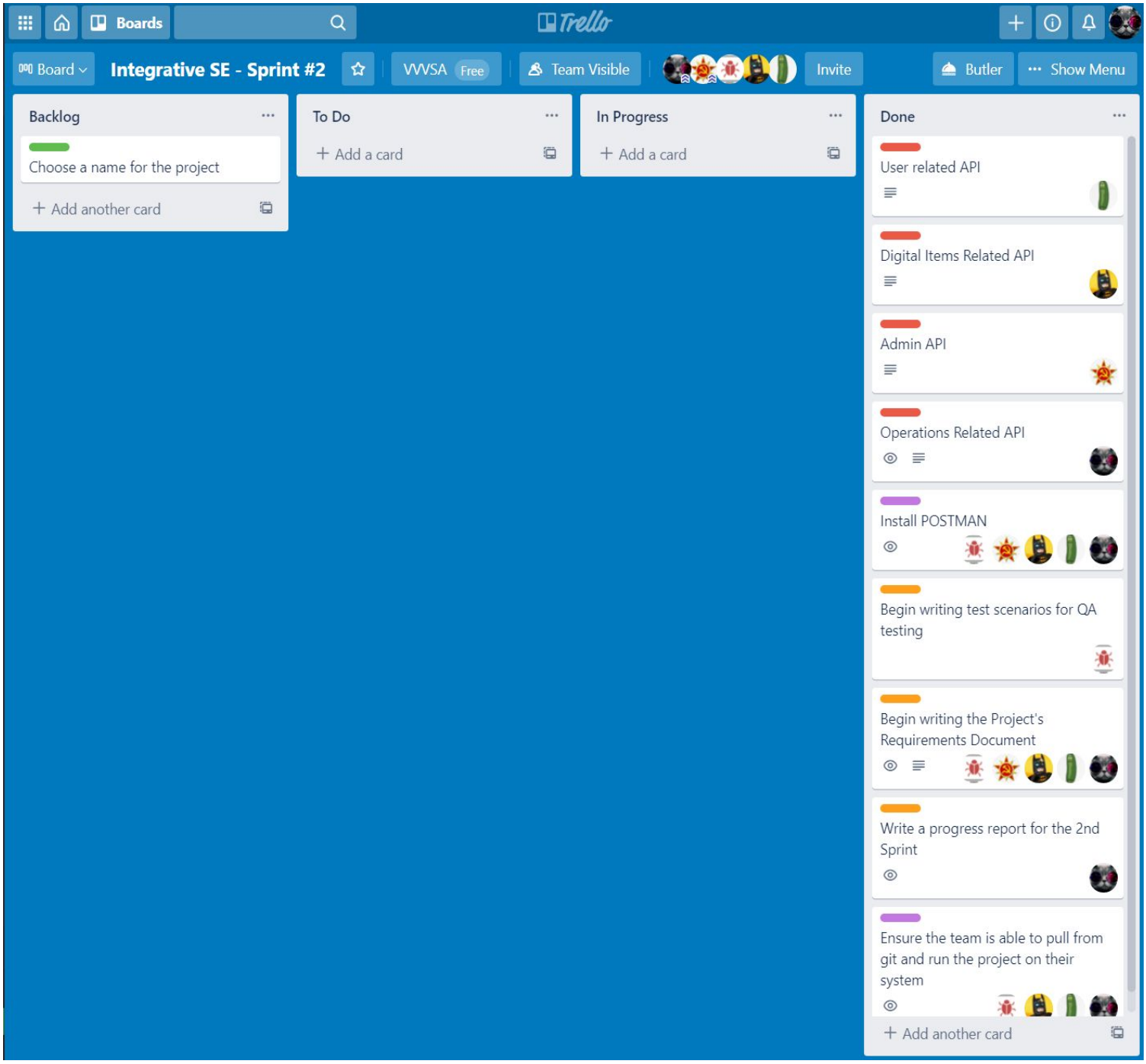


- ## Sprint #2

Sprint Start - Kanban board taken on **09/11/20**

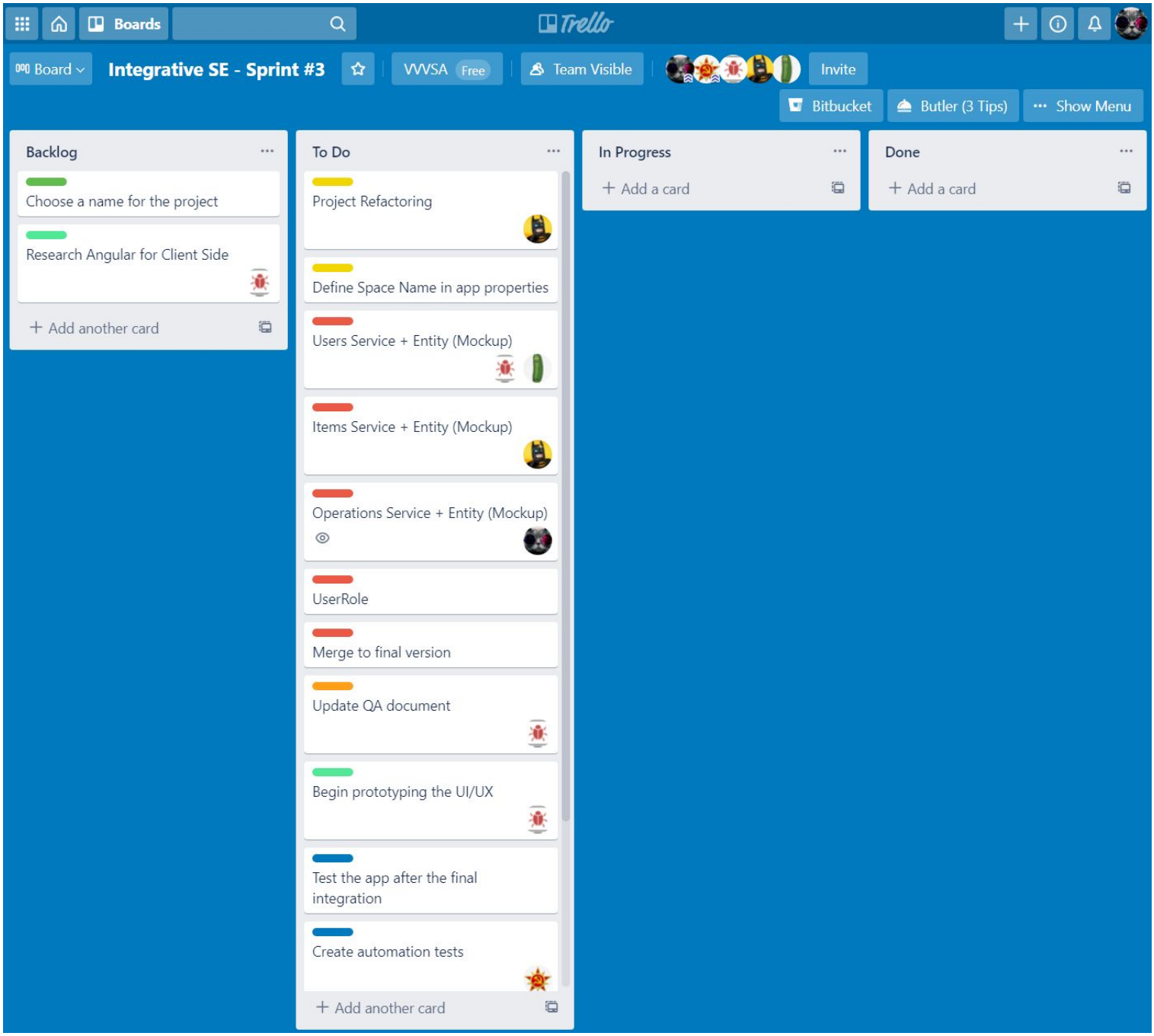


Sprint End - Kanban board taken on **15/11/20**

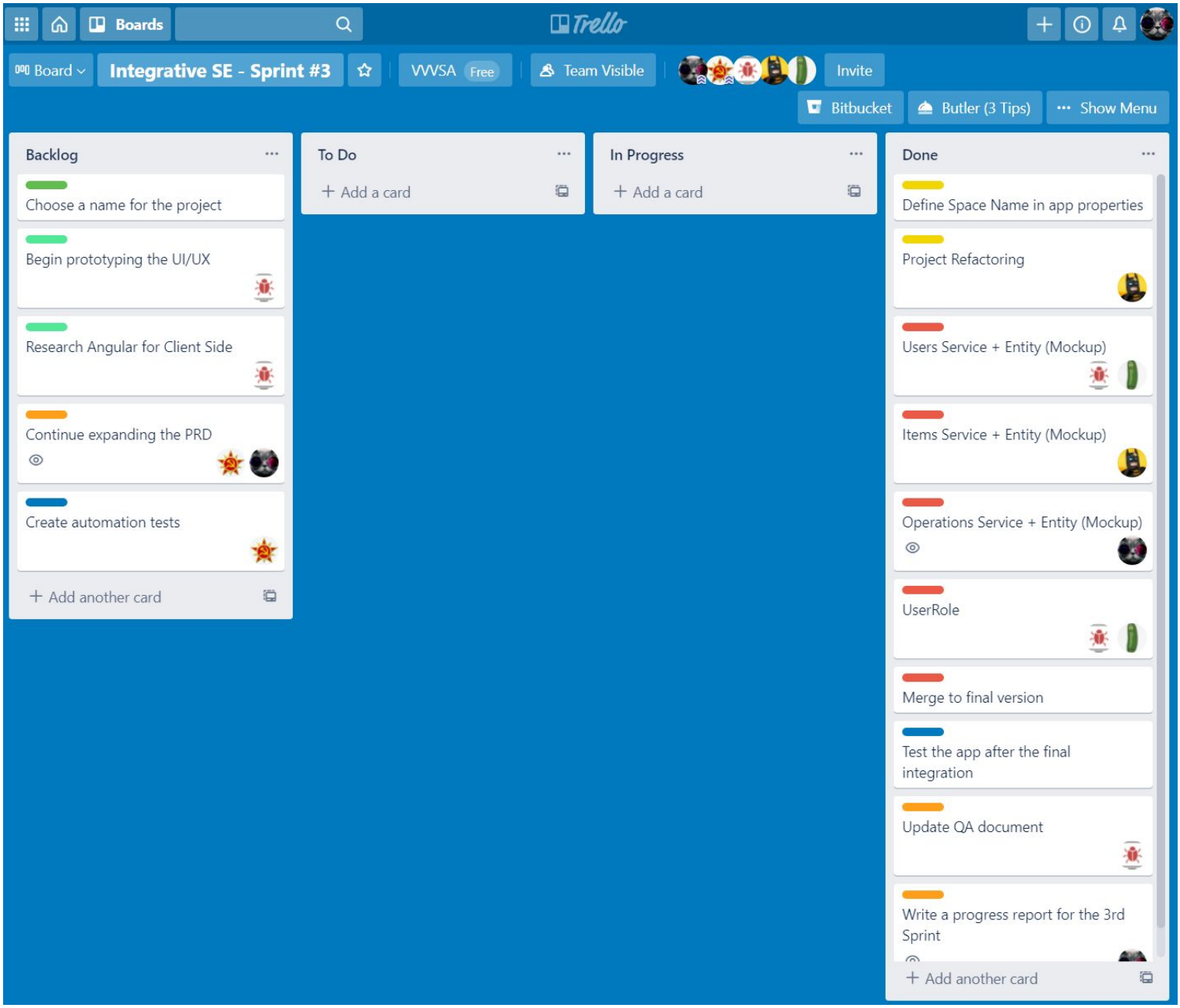


- ## Sprint #3

  Sprint Start - Kanban board taken on **23/11/20**

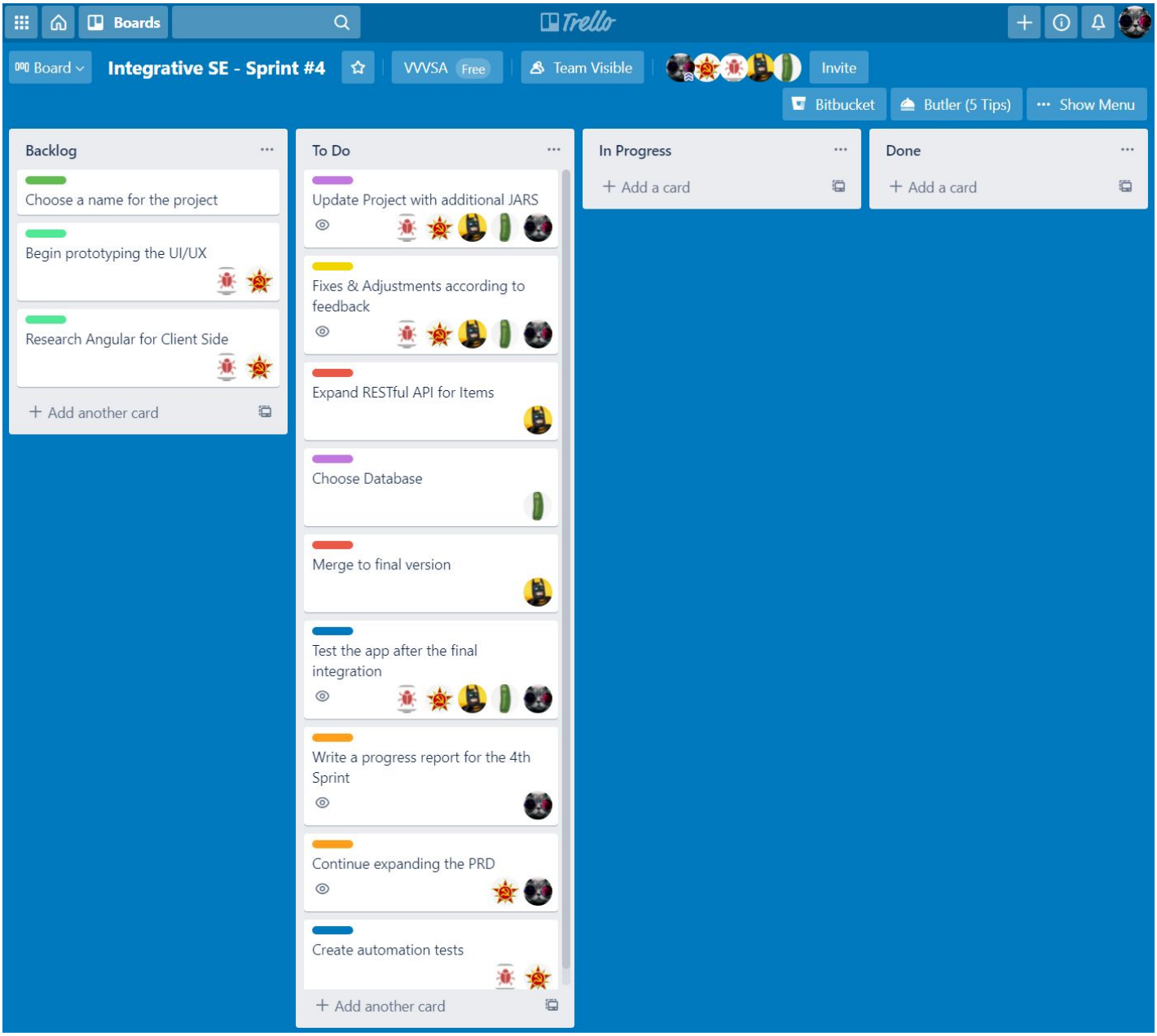


Sprint End - Kanban board taken on **29/11/20**

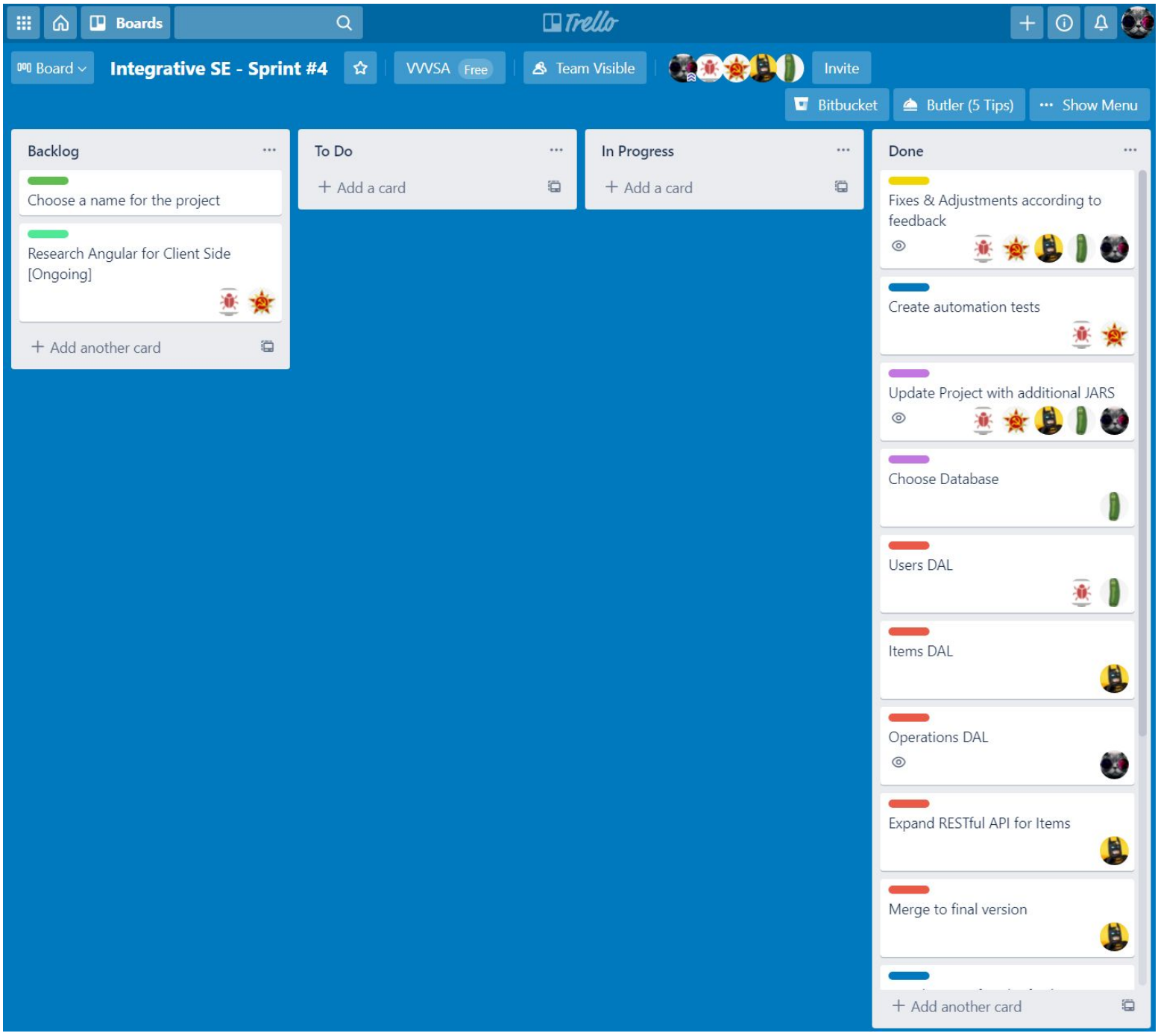


- ## Sprint #4

Sprint Start - Kanban board taken on **02/12/20**



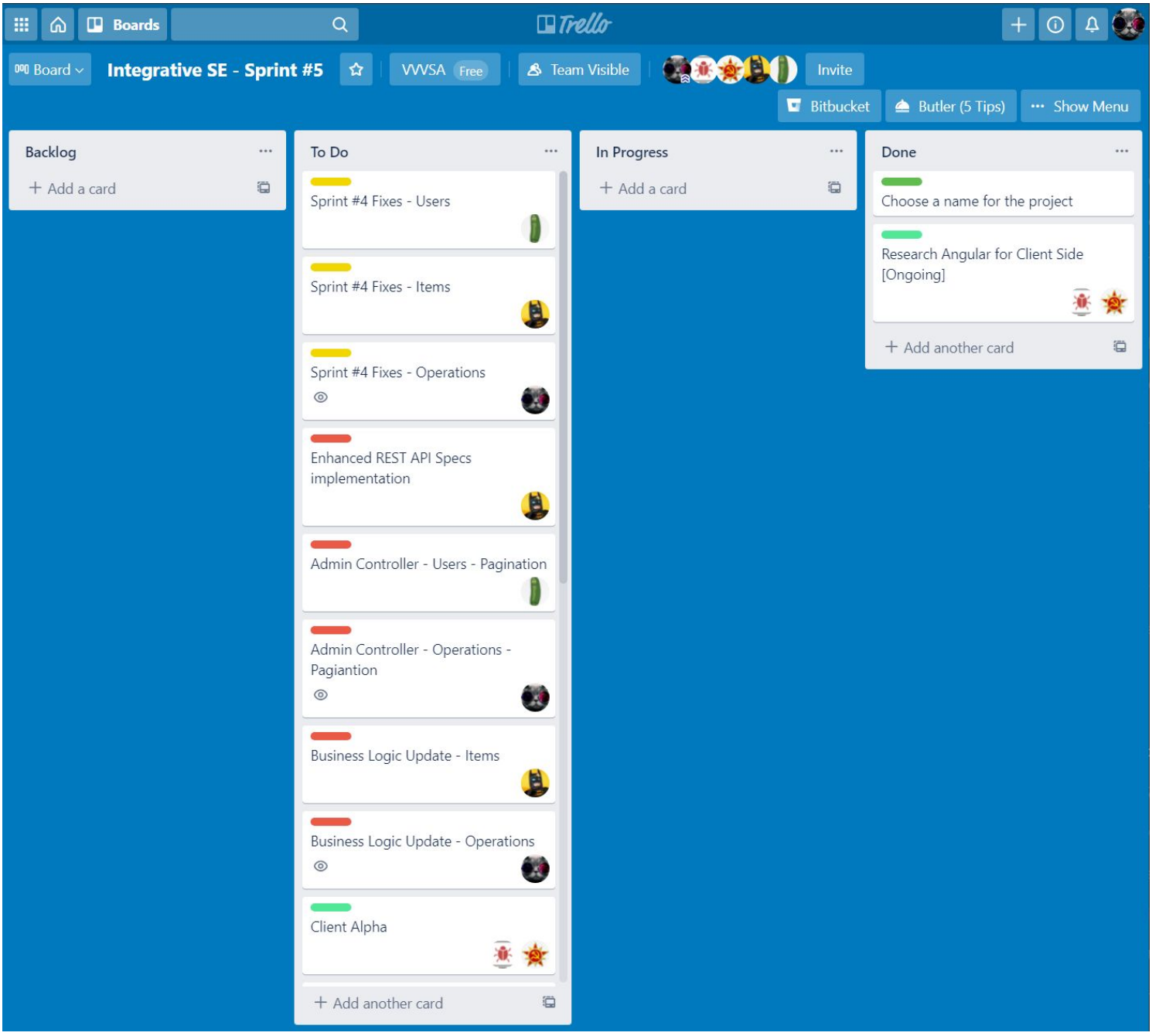
Sprint End - Kanban board taken on **20/12/20**

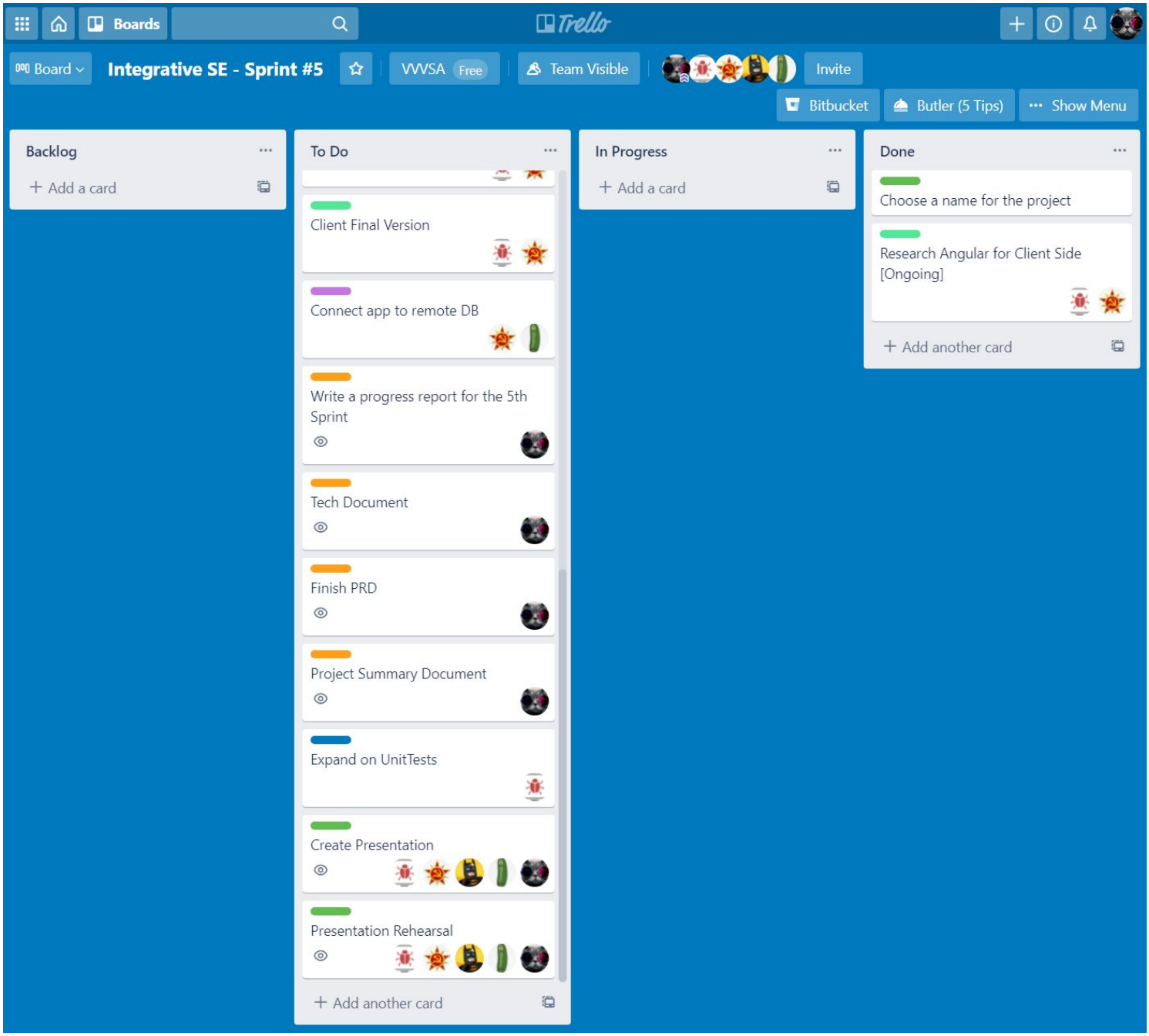


- ## Sprint #5

  Sprint Start - Kanban board taken on **22/12/20**

  Board split into two snapshots due to high amount of tickets




Boards
Trello
Board
Integrative SE - Sprint #5
VVSA
Free
Team Visible
Invite
Bitbucket
Butler (5 Tips)
Show Menu
Backlog
Add a card
To Do
Client Final Version
Connect app to remote DB
Write a progress report for the 5th Sprint
Tech Document
Finish PRD
Project Summary Document
Expand on UnitTests
Create Presentation
Presentation Rehearsal
Add another card
In Progress
Add a card
Done
Choose a name for the project
Research Angular for Client Side [Ongoing]
Add another card

Sprint End - Kanban board taken on **09/01/21**