GetawayGo

SCRUM Process and Implementation Plan

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GetawayGo

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Introduction

SCRUM Overview

SCRUM is an Agile project management framework used to break down complex projects into smaller, manageable tasks that are completed in increments. It emphasizes flexibility and continuous feedback, allowing the developer to respond quickly to changes and improve throughout the development process. SCRUM operates in iterative cycles called sprints, typically lasting 2-4 weeks, where each sprint delivers a potentially shippable product.

Why SCRUM for GetawayGo

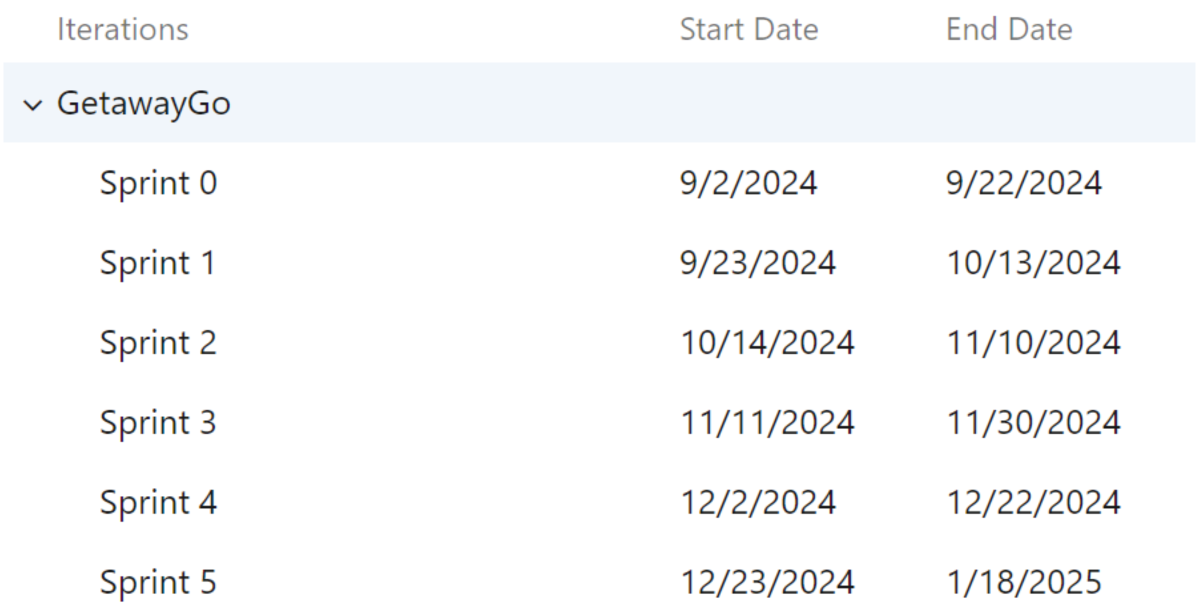
SCRUM is being applied to the GetawayGo project to handle the complexity of developing a scalable microservices platform. Given the need for adaptability in developing multiple services like user management, property management, and booking, SCRUM allows the developer to maintain agility and incorporate feedback. Even though, there is only one developer in this project, the SCRUM framework is still a good approach to tackle this project to ensure that the platform evolves based on user and stakeholder needs and to make the development process simpler.

Azure DevOps Board

The Azure DevOps board is an excellent choice for managing projects because it provides comprehensive and flexible platform for tracking progress and organizing tasks. It integrates seamlessly with SCRUM methodologies, offering Features, PBIs and tasks to breakdown the work items into manageable pieces. By using Azure DevOps, I can ensure that development is streamlined, transparent, and aligned with the project's goals.

Sprints

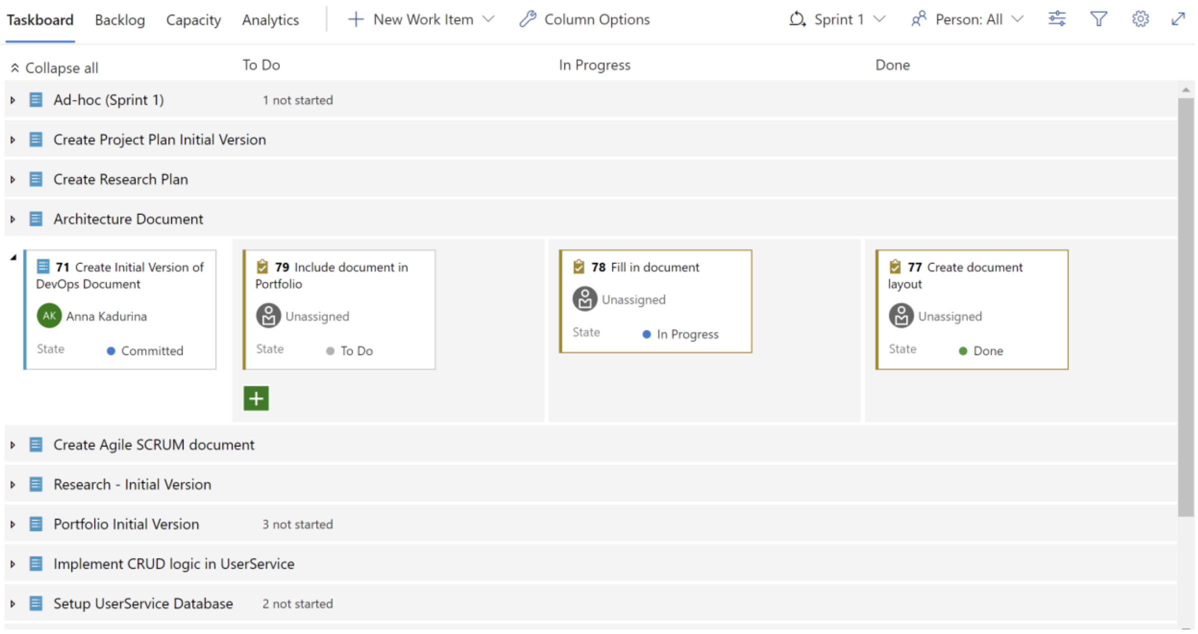
This project will have 6 sprints in total, each lasting 3 weeks. All the sprints are already created and related work items can be placed in the relevant iteration.



Iterations	Start Date	End Date
GetawayGo		
Sprint 0	9/2/2024	9/22/2024
Sprint 1	9/23/2024	10/13/2024
Sprint 2	10/14/2024	11/10/2024
Sprint 3	11/11/2024	11/30/2024
Sprint 4	12/2/2024	12/22/2024
Sprint 5	12/23/2024	1/18/2025

Figure 1 – Sprints in the GetawayGo project

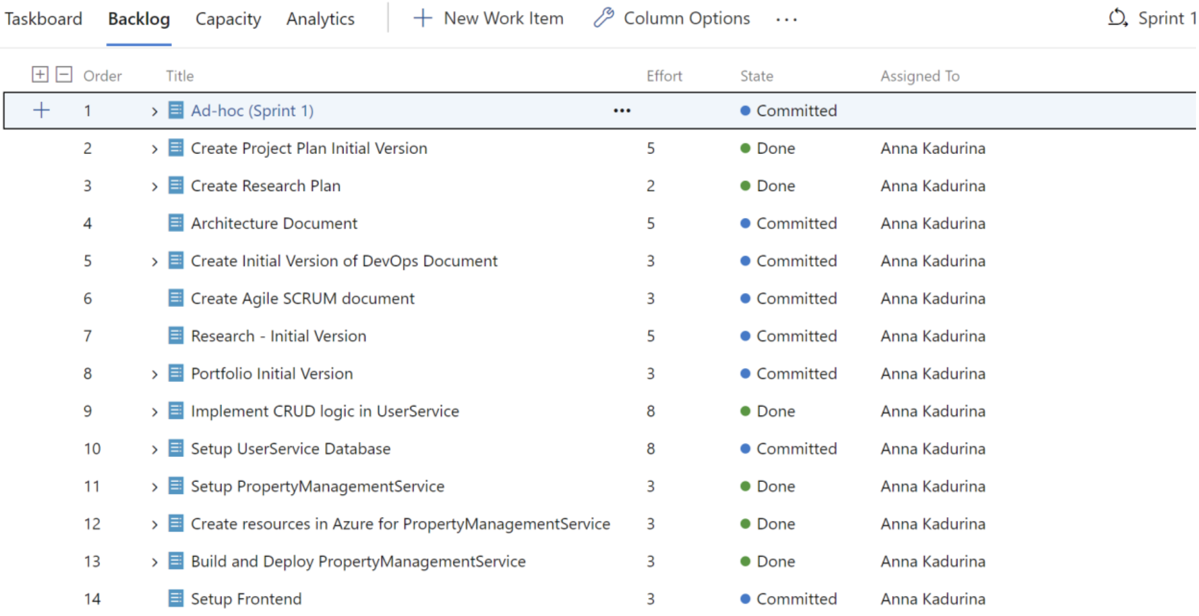
Each sprint will have clear objectives, focused on delivering a shippable product at the end. The sprint's taskboard consists of the PBIs and the columns: To Do, In Progress and Done. This way the progress of the work items can be tracked accordingly.



	To Do	In Progress	Done
Ad-hoc (Sprint 1)	1 not started		
Create Project Plan Initial Version			
Create Research Plan			
Architecture Document			
71 Create Initial Version of DevOps Document AK Anna Kadurina State ● Committed	79 Include document in Portfolio Unassigned State ● To Do	78 Fill in document Unassigned State ● In Progress	77 Create document layout Unassigned State ● Done
Create Agile SCRUM document			
Research - Initial Version			
Portfolio Initial Version	3 not started		
Implement CRUD logic in UserService			
Setup UserService Database	2 not started		

Figure 2 – Sprint Taskboard

For tracking the effort and having a clearer view what is the state of the PBIs, the sprint backlog will be used. This way the total effort and progress of the sprint is visualized better. The order of the PBIs on the board is by priority.



Order	Title	Effort	State	Assigned To
1	Ad-hoc (Sprint 1)		● Committed	
2	Create Project Plan Initial Version	5	● Done	Anna Kadurina
3	Create Research Plan	2	● Done	Anna Kadurina
4	Architecture Document	5	● Committed	Anna Kadurina
5	Create Initial Version of DevOps Document	3	● Committed	Anna Kadurina
6	Create Agile SCRUM document	3	● Committed	Anna Kadurina
7	Research - Initial Version	5	● Committed	Anna Kadurina
8	Portfolio Initial Version	3	● Committed	Anna Kadurina
9	Implement CRUD logic in UserService	8	● Done	Anna Kadurina
10	Setup UserService Database	8	● Committed	Anna Kadurina
11	Setup PropertyManagementService	3	● Done	Anna Kadurina
12	Create resources in Azure for PropertyManagementService	3	● Done	Anna Kadurina
13	Build and Deploy PropertyManagementService	3	● Done	Anna Kadurina
14	Setup Frontend	3	● Committed	Anna Kadurina

Figure 3 – Sprint backlog

Lastly, the Burndown trend will be utilized to monitor the progress of the sprint by evaluating the Remaining Effort throughout the sprint.

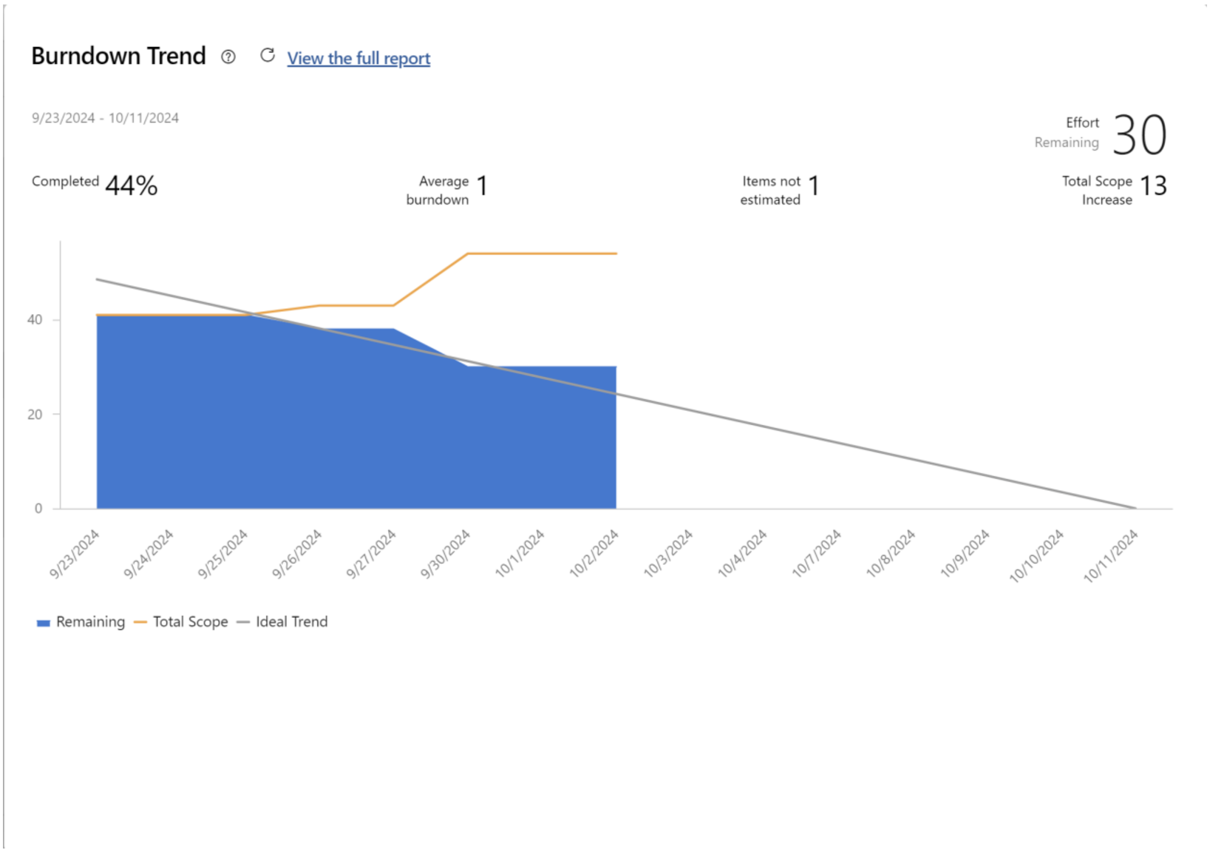
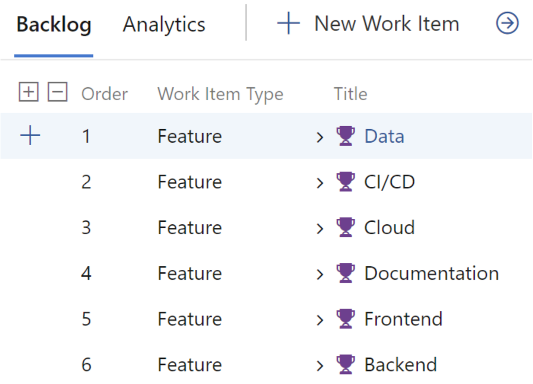


Figure 4 – Burndown chart – Sprint 1

Features

The Features are a chunk of functionality that delivers considerable business value, and that fulfills a stakeholder need. I have created various Features to start the project with. Of course, further in the development, more detailed Features can be included to keep up with the continuously evolving project. The Features serve as Parents to the relevant PBIs.

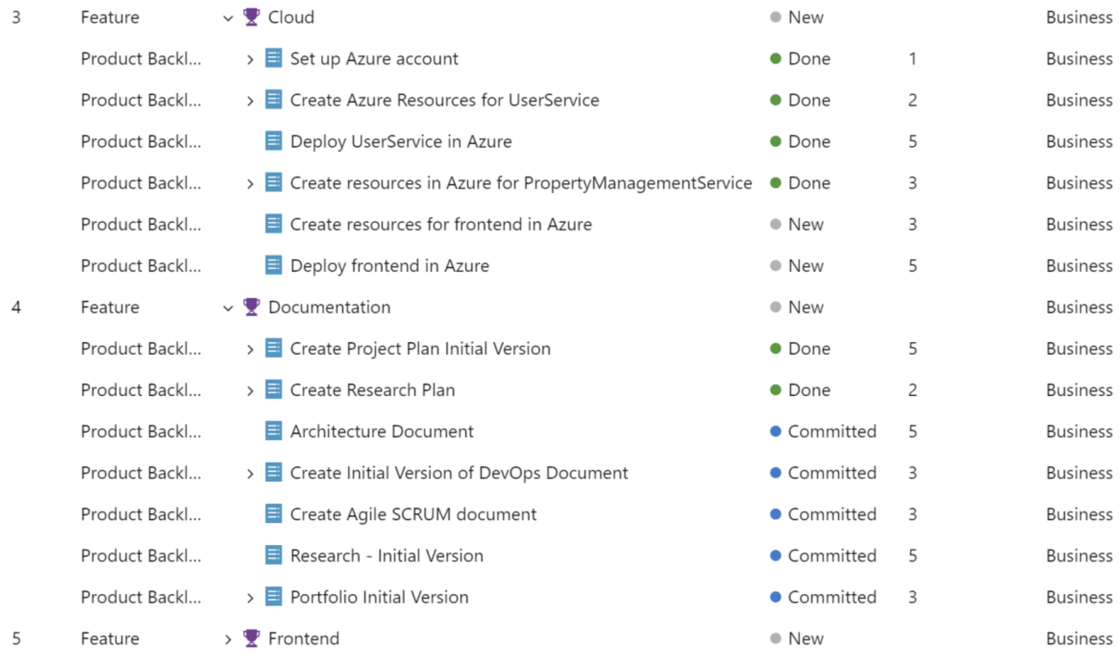


Order	Work Item Type	Title
1	Feature	Data
2	Feature	CI/CD
3	Feature	Cloud
4	Feature	Documentation
5	Feature	Frontend
6	Feature	Backend

Figure 5 – Features in GetawayGo

Product Backlog Items (PBIs)

PBIs are smaller, actionable tasks that contribute to fulfilling Features. Each sprint is filled with relevant PBIs to be done. They contribute to one or more Features. Each PBI has a state – New, Approved, Committed, and Done. When a PBI is created, the state is New. After refinement of the PBI, the state is Approved (Approved to be included in the planning for next sprint). When the PBI is included in the sprint, and the planning is done, all the PBIs are now with state Committed. After completing a work item, you put it do Done.



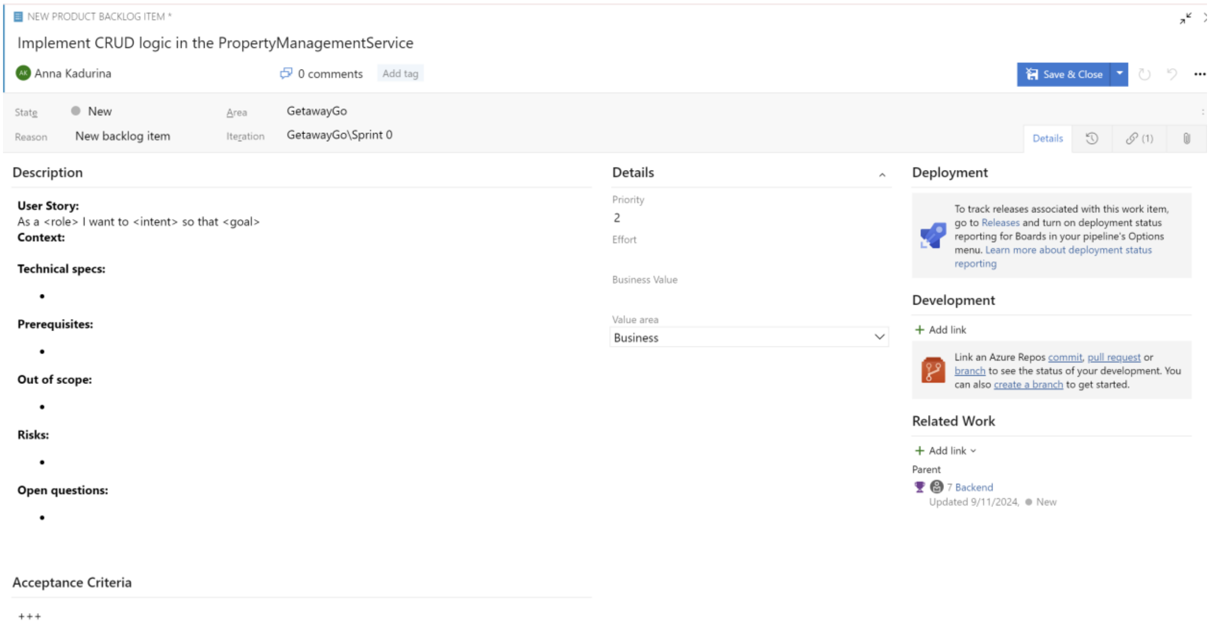
3	Feature	Cloud	● New		Business
	Product Backl...	Set up Azure account	● Done	1	Business
	Product Backl...	Create Azure Resources for UserService	● Done	2	Business
	Product Backl...	Deploy UserService in Azure	● Done	5	Business
	Product Backl...	Create resources in Azure for PropertyManagementService	● Done	3	Business
	Product Backl...	Create resources for frontend in Azure	● New	3	Business
	Product Backl...	Deploy frontend in Azure	● New	5	Business
4	Feature	Documentation	● New		Business
	Product Backl...	Create Project Plan Initial Version	● Done	5	Business
	Product Backl...	Create Research Plan	● Done	2	Business
	Product Backl...	Architecture Document	● Committed	5	Business
	Product Backl...	Create Initial Version of DevOps Document	● Committed	3	Business
	Product Backl...	Create Agile SCRUM document	● Committed	3	Business
	Product Backl...	Research - Initial Version	● Committed	5	Business
	Product Backl...	Portfolio Initial Version	● Committed	3	Business
5	Feature	Frontend	● New		Business

Figure 6 – Example of PBIs

When I have completed a PBI, I am putting relevant proof of it being Done. This way I can have screenshots ready for Documentation or presentation in front of stakeholders. The proof consists of: Implementation of the PBI, Relevant testing – Unit testing, Local testing, Production Testing, and Deployment.

User Stories

Each PBI has a template designed by me. The template consists of some details that are needed to understand and complete the work item. One of the things that you must fill in and understand, is the user story. Each PBI has a user story that needs to be fulfilled to consider the item as Done. In the next screenshot, you can see a PBI I have just created and imported the template in it that needs to be filled out now. An example user story in this situation is: *As a* *host I want to be able to create, update, delete and see my properties, so that I can manage my listings in GetawayGo.*



NEW PRODUCT BACKLOG ITEM *

Implement CRUD logic in the PropertyManagementService

Anna Kadurina 0 comments Add tag

Save & Close

State: New Area: GetawayGo

Reason: New backlog item Iteration: GetawayGo\Sprint 0

Details (1)

Description

User Story:
As a <role> I want to <intent> so that <goal>
Context:

Technical specs:

-

Prerequisites:

-

Out of scope:

-

Risks:

-

Open questions:

-

Acceptance Criteria

+++

Details

Priority: 2

Effort:

Business Value:

Value area: Business

Deployment

To track releases associated with this work item, go to Releases and turn on deployment status reporting for Boards in your pipeline's Options menu. Learn more about deployment status reporting

Development

+ Add link

Link an Azure Repos commit, pull request or branch to see the status of your development. You can also create a branch to get started.

Related Work

+ Add link

Parent

7 Backend
Updated 9/11/2024, New

Figure 7 – PBI template

Story Points (Effort)

For assigning Story Points to PBIs, I use Fibonacci numbers (1, 2, 3, 5, 8, etc.) to represent the relative complexity, effort, and time required to complete each task. A Story Point of 3 is typically assigned to tasks that are of normal difficulty, with higher numbers (5, 8) indicating more complex or time-consuming tasks, and lower numbers (1, 2) for simpler, quicker items. This scale helps in sprint planning and estimation by giving a clear indication of the workload.

Definition of Done and Acceptance Criteria

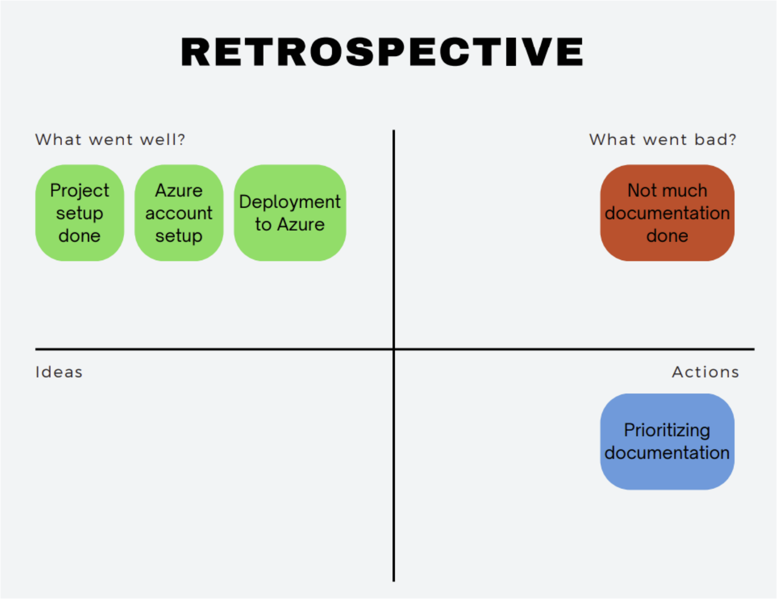
The Definition of Done for my project ensures that a task is fully complete before it is considered finished. This includes writing the code, conducting thorough testing – unit testing, local testing and production testing. Additionally, any related documentation must be updated.

The Acceptance Criteria is defined per PBI and contains of the specific requirements that a particular work item must meet to be considered successful. These criteria are unique for each PBI and focuses on the functionality that needs to be delivered.

The Definition of Done ensures that all development work follows certain quality standards, while Acceptance Criteria ensures that each PBI delivers the expected functionality. Both work together.

Retrospective

The Retrospective is the time to reflect on the past sprint. It is important for me as a solo developer to asses what went well, what didn’t, and how improvements can be made. For each Retrospective, I am going to utilize tools like Mural and Canva.



RETROSPECTIVE

What went well?

Project setup done

Azure account setup

Deployment to Azure

What went bad?

Not much documentation done

Ideas

Actions

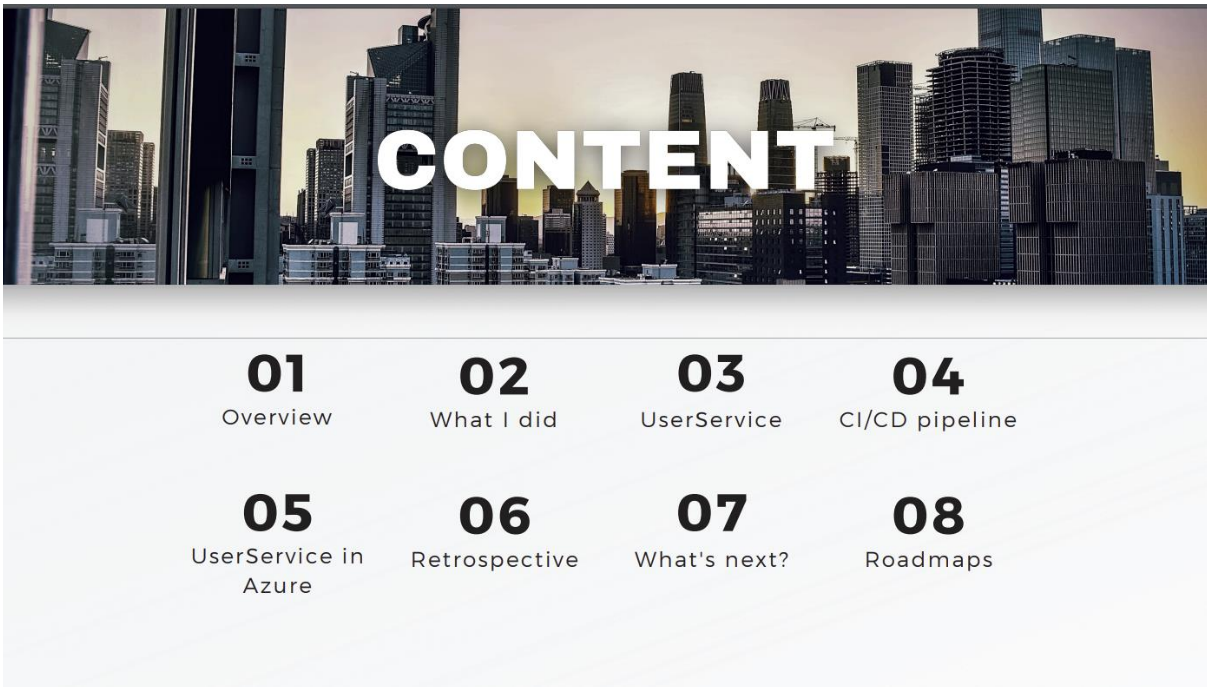
Prioritizing documentation

Figure 8 – Retrospective from Sprint 0

The needed Action derived from this Retrospective was the need to prioritize the documentation. This is reflected in the next sprint planning, where the documentation is on top of the board, meaning that it is with the highest priority.

Sprint Review

Sprint Review is the time to explain the progress of the project, show what was achieved in the past sprint and collect all feedback and incorporate it. For each Sprint Review, I am going to have a presentation where I present all the needed information.



CONTENT

01 Overview

02 What I did

03 UserService

04 CI/CD pipeline

05 UserService in Azure

06 Retrospective

07 What's next?

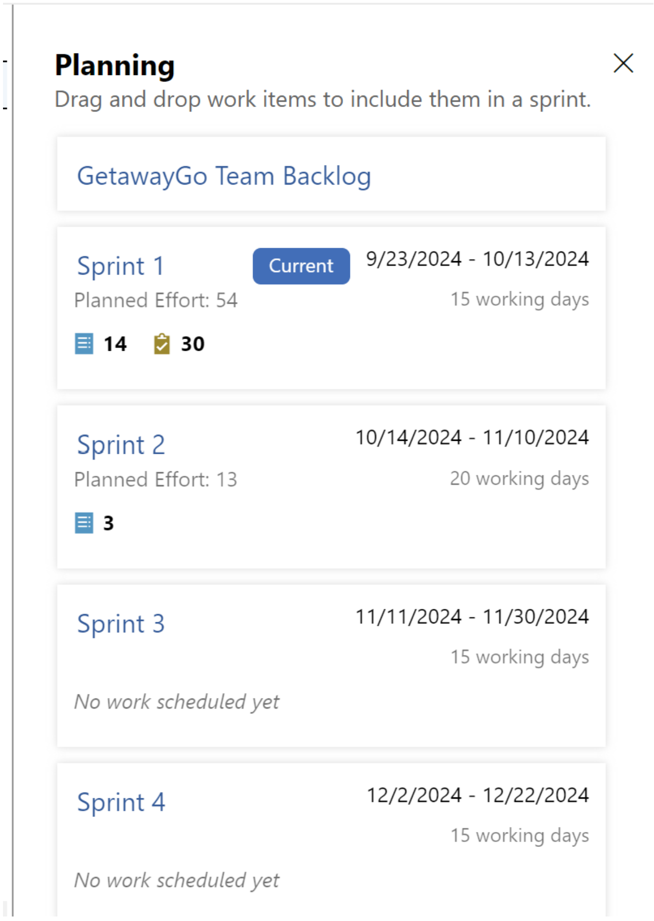
08 Roadmaps

Figure 9 – Sprint 0 Review

As you can see, the presentation contains of an Overview, What I did – a breakdown of the completed tasks in the sprint, some highlights of the sprint that are demoed or explained separately with proof, Retrospective, What's next – the next sprint planning, and the Roadmaps. By including these topics, I ensure that it is clear what was achieved in the sprint, how the sprint went, what's next and what the bigger picture is.

Sprint Planning

At Sprint Flip, the next sprint is being planned. In that process, I define what is the priority of the next sprint and what the main objective will be based on feedback, goal, and retrospective. For planning, I am using the Planning Filter in the Backlog in Azure DevOps.



Planning

Drag and drop work items to include them in a sprint.

GetawayGo Team Backlog

Sprint 1 Current 9/23/2024 - 10/13/2024
Planned Effort: 54 15 working days
▤ 14 ✓ 30

Sprint 2 10/14/2024 - 11/10/2024
Planned Effort: 13 20 working days
▤ 3

Sprint 3 11/11/2024 - 11/30/2024
15 working days
No work scheduled yet

Sprint 4 12/2/2024 - 12/22/2024
15 working days
No work scheduled yet

Figure 10 – Planning in Azure DevOps

Refinement

Refinements are not an official event within the SCRUM framework, however they are important to the process. Within a refinement, the new PBIs are being evaluated, the Acceptance Criteria is written, the User Story is finished and then the PBI is approved. By doing refinements, I ensure I always have PBIs that are ready to be included in the next sprint or even pulled in the current one if there is enough time.

Tools and Resources

In the GetawayGo project, the following tools and resources are being used to facilitate the SCRUM process and ensure efficient project management and development:

- **Azure DevOps**: Used for managing the SCRUM board, tracking PBIs, user stories, and sprint progress, as well as handling CI/CD pipelines.
- **Visual Studio**: The primary IDE used for development of the .NET microservices.

- **Visual Studio Code**: The primary IDE used for frontend development with React.
- **Swagger**: Used for API testing and documentation to ensure the endpoints function correctly.
- **Faker.NET**: Used to generate fake data for testing during the early stages of development.
- **SonarQube**: Integrated for code quality analysis, ensuring best practices are followed.
- **Git**: Used for version control and collaboration between team members through Azure Repos.
- **Postman**: Tool for API testing, verifying the responses of services.
- **Azure App Services**: Cloud platform for deploying and hosting the microservices.
- **SQL Server/Azure SQL**: For database management of application data.

Roadmaps

A roadmap is a strategic overview of the project, providing a high-level, long-term view of its goals and key deliverables. Unlike the detailed, iterative nature of sprints, which focus on short-term tasks and progress, a roadmap illustrates the bigger picture, highlighting the project's overall trajectory from start to finish.

Functional Roadmap

The functional roadmap represents the progression of each functional component throughout the project. It is clearly stated when the implementation of a certain microservice starts and when it should end. By adhering to this roadmap, I ensure that I have enough time to implement all the needed components that make the GetawayGo project.

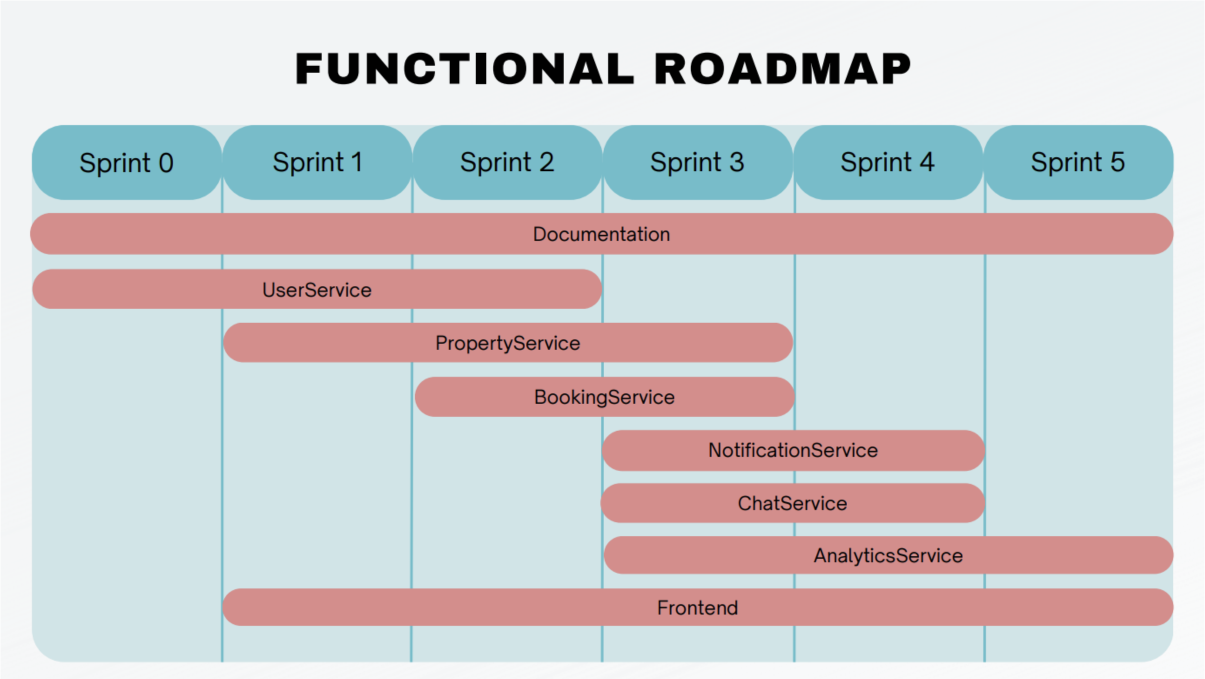


Figure 11 – Functional Roadmap of GetawayGo

Technical Roadmap

The technical roadmap represents the main topics/implementations connected to the Learning Outcomes of the semester. This way, I ensure that I have planned and estimated the needed progress of each learning outcome.

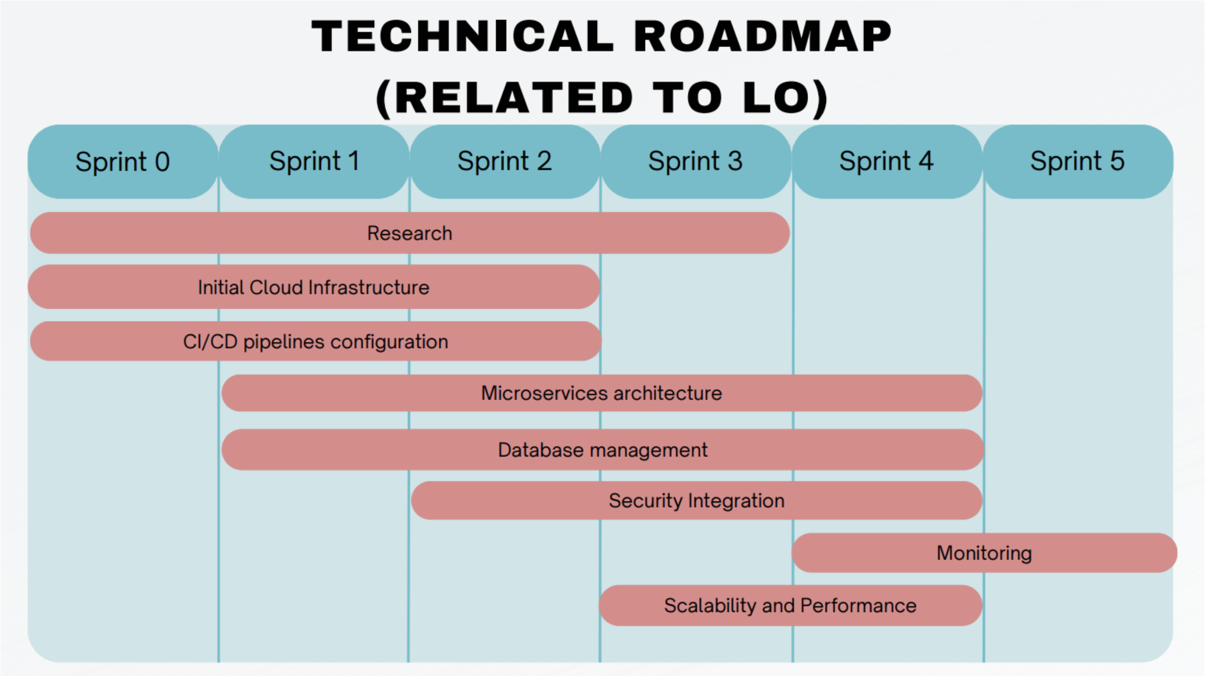


Figure 12 – Technical Roadmap of GetawayGo

Conclusion

In conclusion, the implementation of the SCRUM framework for the GetawayGo project offers a structured yet flexible approach to project management and development. By utilizing tools like Azure DevOps, I can effectively track progress and manage tasks. The iterative nature of SCRUM allows me to break down the project into manageable sprints, enabling regular feedback and continuous improvement. I will follow all SCRUM events throughout the semester and make sure that I act not only as a developer, but a Scrum Master and a Product Owner in my own project.