

Project Plan

Improving Usability of Portflow Evidence Section



Graduation Internship at Drieam B.V.		
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1. Project assignment

1.1 Context

Drieam is an education technology company that enables higher education, commercial training providers and business schools to deliver the best learning experience with Canvas. Their customers include large educational institutes, business schools and commercial training providers such as Chamberlain, Yale, TU/e, Fontys, Thomas More, Hogeschool Utrecht, Instead, Vlerick, Schola Medica and PIVO among others.

There are several products being developed and maintained by Drieam. One of the products is Portflow. Portflow is a student-led development and assessment portfolio application. It can be launched within the context of an Learning Management System (LMS) such as Canvas and Brightspace. It is developed adhering to the Learning Tools Interoperability (LTI) standard enabling easy integration with LMSs. In the last 2 years, the product has been built from scratch and is nowadays being used by thousands of students and teachers across the globe. The application allows students to submit and keep track of their goals and evidence of their assignments. They can import various files, links and existing Canvas (LMS) assignments as evidence within their portfolio and submit (all or part of it) as a Canvas assignment. Teachers can review, grade and leave feedback per each evidence. The “My Portfolio” section is the overview of the entire structure of the portfolio. The “My Evidence” section is where the students can manage all their evidence. The assignment will be focused on Portflow, specifically the evidence section.

1.2 Goal of the project

The rapid development of Portflow and growth of the company has lessened the look and feel of the Portflow evidence section. At the moment this is just a basic list of all the evidence a single student has submitted to the portfolio. Student should be able to manage the entirety of their portfolio from there, however, it lacks features managed all the aggregated data. There is a lack of consistency and functionality among features such as collections and goals. The stand-alone features are functioning well, however, there needs to be a better way to handle all evidence and create a feeling of fluency and consistency among the entire portfolio. The current Evidence section feels redundant and cluttered, therefore, students do not use it much.

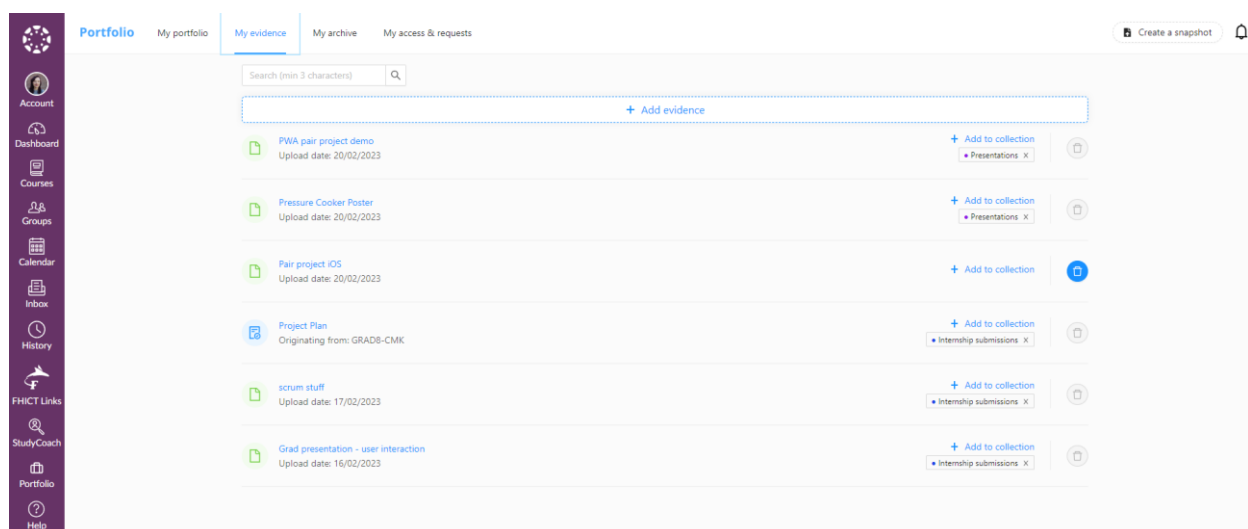


Image 1. Example of current My Evidence Section of Portflow.

Therefore, the goal of the assignment is to modernise and further enhance the evidence overview to allow users to manage their aggregated data (evidence) in a convenient and meaningful way. The company would like to

convert this basic list into a dashboard-like page with an overview of open summaries of all evidence and other useful features. As by aggregating the evidence data, students and teachers can have a clearer picture of the portfolio progress. This assignment fits into the Drieam's goal of putting the students in control of their lifelong development and enabling teachers to guide them accordingly.

1.3 Scope and preconditions

The student will join the existing development team of Portflow with the focus on improving the Evidence section. Collaboration with both the development team, the product owner, and the UX designer will be needed. The product will be production-ready code, released to production, and eventually tested by the students. Any new features will be implemented based on the ideas of the intern and customer feedback, to go through the whole feedback loop, resulting in better user experience for students and educators.

The software is already pre-existing, therefore, some of the technical choices are already set. Ruby on Rails and the React are used for development of the assignment. Ruby was chosen for backend as the syntax and ready-to-use solutions (gems) enable rapid development which is vital for fast growing company developing an LMS or LTIs driven by customer needs. React was utilized for nearly the same reasons. Rapid development and ability to create complex UIs due to its encapsulated components that manage their own state and can be reused throughout the web app. The student will learn and deepen the knowledge of the Ruby-on-Rails framework and React library through practice. The table below list out the responsibilities that fall under the inside and outside scopes of the project.

Inside scope:	Outside scope:
1 Learning the Ruby on Rails framework and React library	1 Advertising the new features
2 Consulting the design team for the right choices	2 Producing a design system for the assignment
3 Component and Unit Testing	3 End User testing
4 Validating the research findings	4 Releasing and maintaining the features
5 Presenting relevant research findings	5 Contact with the clients
6 Participating in Scrum activities	

1.4 Strategy

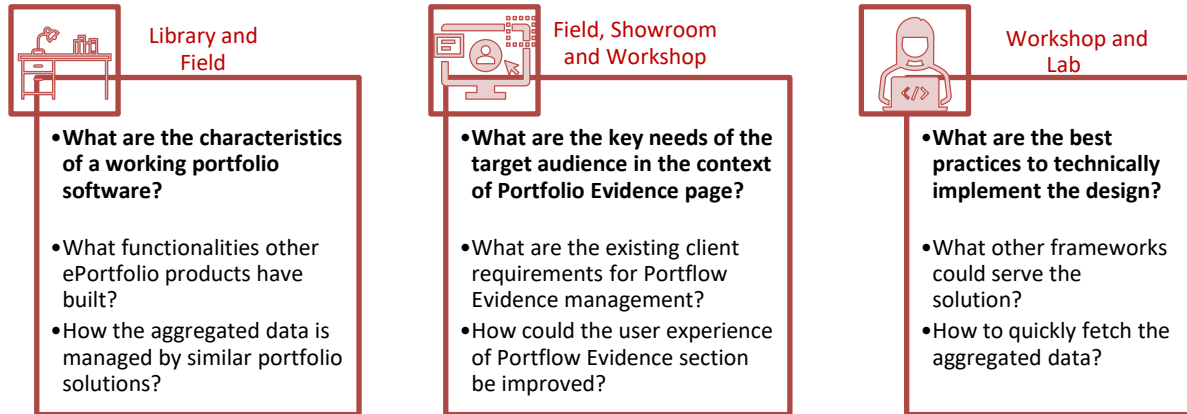
The Agile methodology is already used within the company, due to its flexibility and the values matching with the company's internal culture. The development team, that the student is a part of, already uses Scrum Framework in their daily activities. The framework was chosen as it enables the team to quickly adapt to the changing situations, receive frequent feedback, and supports frequent releases.

The student joins the daily stand-ups from day one to stay in the loop and will receive/create own epics and tasks as soon as the development stage is reached.

1.5 Research questions

As mentioned before evidence is the section where student should be able to manage all existing uploaded work (text documents, images, code snippets, reflections etc.) of the portfolio proving their completed assignments and meeting their goals. This Evidence overview needs to be improved to offer better functionality as per the goal of the assignment. It gives rise to the main question: How can we provide more tools to students to manage their evidence more easily? In order to answer it, the student needs to find out what are the potential features that

would add value to the evidence section, what are the requirements and expectations of the client and the company for the evidence section. How best to implement the new features and so on. The table below defines the key research questions (and sub questions) derived from the main problem. These questions also give rise to the phasing of the internship and gives way to a plan of action discussed in the next Chapter.



By answering these questions, the student will help the company ensure its product offers the best features for the students and educators. A well-functioning evidence section can also increase Portflow's competitive value and overall make the product more usable.

To ensure the goal has been met successfully user testing could be conducted to gather the feedback from peers and teachers. A review from the product owner or development team would also be a good validation of a completed assignment.

1.6 End products

The student will deliver the Solution for evidence overview improvement as well as all related research files and documents to the company and university. The exact deliverable will arise from Research and Analysis as well as Design phases. Below is an example of potential end products.



Figure 1. PBS structure of end product and deliverables.

2. Project organisation

2.1 Stakeholders and team members

The student will join the company full time and become part of the Learning Tools Interoperability (LTI) development team. All the stakeholders relevant to the assignment are listed in the table below starting with the student, tutor, mentor and finishing with least relevant members of the project.

Name	Abbreviation	Role and functions	Availability
Edita Pronckute edita@drieam.com	EP	Intern, Frontend developer	Full-time
Jo-An Kamp j.kamp@fontys.nl	JK	Graduation Internship Tutor	On a weekly basis More can be arranged if needed
Ellya Aisyah ellya@drieam.nl	EA	Graduation Internship Mentor, Frontend developer	Two days a week
Pieter J. Smits pieter@drieam.nl	PS	Product Owner, Product Manager	On a need basis
Elise Claassen elise@drieam.nl	MP	UX Designer	On a need basis
Gásten Sauzande gasten@drieam.nl	GS	Scrum Master, Team Member, Custom apps	On a need basis
Ignacio Aliende García ignacio@drieam.nl	IG	Team Member, Full stack, Focus Qualtrics	On a need basis
Matthijs Wanders matthijs@drieam.nl	MW	Team Member, Backend developer, Deployment and releases	On a need basis
Coline van Leeuwen coline@drieam.nl	CL	Team Member, Full-stack developer	On a need basis
Koen Sengers koen.sengers@drieam.nl	KS	Team Member, Backend developer	On a need basis
Stijn Thurkow stijn@drieam.nl	ST	Team Member, PO of Qualtrics	On a need basis
Daniel van Berzon daniel@drieam.nl	DB	Team Member, Full-Stack developer	On a need basis
Dennis Paagman dennis@drieam.nl	DP	Team Member, Backend developer	On a need basis
Jelle Heinemans jelle.heinemans@drieam.nl	JH	Team Member, Custom apps	On a need basis
Jorin Tielen jorin@drieam.nl	JT	Team Member, Backend developer	On a need basis
Martijn Pieters martijn@drieam.nl	MP	Manager, Frontend	On a need basis
Linda Linssen linda@drieam.nl	LL	UX Designer for Study Coach	On a need basis

2.2 Communication

Most of communication is done via emails, video calls, slack or live on location. Below are some of the major meetings that have an impact on the internship project.

Type of a meeting	Frequency	Location	Purpose	Attendees
Stand-Ups	Daily	Live or/and online	Discuss what has been done the day before and what are the plans ahead, and if there are any challenges and hindrances	Team members
Meeting with the Tutor	Weekly	Online via MS Teams	Discuss challenges, review documents and planning	Tutor and student
Meeting with each Mentor	Weekly	Live or/and online	Performance overview, improvement points	Mentor and student
Feature Based Refinement	On a need basis	Live or/and online	To validate ideas, assess features	Elise and student
Sprint Demo	Biweekly	Live or/and online	Recap of previous sprint	Product and development team
Sprint Retrospective	Biweekly	Live or/and online	Review of previous sprint process, what went well and what could be improved	LTI team
Lunch Talk	Monthly	Live or/and online	Update on company's goals and changes	All Drieam employees
Check-in with the Manager	On a need basis	Online	Reflect on the project and collaboration	Martijn and student

3. Activities and time plan

3.1 Phases of the project

The table below illustrates the rough stages of the project with the activity examples for each phase. Research and analysis will continue throughout the duration of the internship as it is Research based and the student will be learning and practising new things at every stage. Next, design, development and deployment phases may be looped over and over during the internship as it is organised in iterations. This way improvements can be made in a proper manner. Finally, the wrap up phase finalises the internship period and delivers the outcome.

Research and Analysis
<ul style="list-style-type: none">- Analyse the problem and the assignment- Identify core tasks- Draft project plan- Practice the new frameworks- Learn the client requirements form PO- Gather feedback from peers and colleagues
Design
<ul style="list-style-type: none">- Draft up potential solutions (the look and feel)- Create wireframes- Consult the UX designer (Elise)- Draft up the Design section of Project Report
Development and Deployment
<ul style="list-style-type: none">- Implementation of the solution- Testing and deployment of each feature- Describe the process and challenges in the Project Report
Testing and Feedback
<ul style="list-style-type: none">- Enabling access for some end users- Gathering feesback from end-user- Completion of Project Report- Prepare a final presentation
Wrap-up
<ul style="list-style-type: none">- Handover- Assessment

3.2 Time plan and milestones

The work is organised in 2 weeklong iterations based on Scrum framework. The team maintains a backlog using Zenhub (an extension of Github). Everyone is assigned to a task or an Epic, peer programming is also quite common. Every morning the team gathers for a Stand Up to discuss the challenges, what has been done and the plans for the day. This helps keep everyone in the loop and identify hindrances in time. There are also refinement sessions when needed and retrospectives to review the progress made and how it was achieved. The Scrum events are led by a Scrum Master who helps keep an overview of all matters.

The student will be joining the development team while systematically working on the assignment completion. The table below represents phases and main milestones over a timeline.

Week 1-4	Week 5-7	Week 8-17	Week 18-20	Week 21
<ul style="list-style-type: none">• Research and analysis phase• Project plan• Gather requirements and feedback• Company visit	<ul style="list-style-type: none">• Design phase• Producing wireframes• Validating designs with the UX designer	<ul style="list-style-type: none">• Development phase• Mid-term presentation• Formative review• Portfolio Submission	<ul style="list-style-type: none">• Testing and Feedback phase• 2nd company visit• Presentation & defence	<ul style="list-style-type: none">• Deployment to all clients• Wrap-up phase• Handover

4. Testing strategy and configuration management

4.1 Testing strategy

The student will perform technical testing on all of their code. Unit tests will have to be written to verify the structure and logic of the code whenever possible. For the frontend, component testing will be used to evaluate the behaviour of the solution. Some testing is already integrated in the existing CI/CD pipeline.

Lastly, End-to-End (E2E) testing will be used. E2E tests evaluate the solution from the end user's experience by simulating the real user scenario and validating the system under test and its components for integration and data integrity. Furthermore, it expands the overall test coverage, can help detect bugs and ensure the fluency and correctness of the entire solution. For this reason, there is an internal application set up where developers can try out their implementations in the real environment.

4.2 Test environment and required resources

The student is joining an existing development team, thus the Github organisation already has pre-set Actions (CI/CD pipelines). The student will learn about it more in the development phase of the assignment.

4.3 Configuration management

For basic version control GitHub is used. Each member is free to choose the GUI application (if any) to manage the shared repository. Tickets are tracked via an extension of GitHub – Zenhub. The branching strategy and issue management will be introduced at a later stage (Development stage).

5. Risk assessment

The table below lists some of the potential risks that are mostly out of student control, yet still has a chance of taking place. Column 2 and 3 lists the potential prevention or avoidance activities as well as how to mitigate once it occurs.

Risk	Prevention activities	Mitigation activities
1 Losing a core team member	Sharing information about each other's tasks to aid in workload overtaking if needed	Redistribution of workload to cover
2 Disputes among stakeholders	Proper communication, compromising	Involving 3 rd party (Semester Coach to mediate)
3 Data security risk	Planning work and meetings to be more private	Have an urgent meeting to discuss a proper course of action
4 Losing a PO/mentor	-	Other PO would take over
5 Company disagrees with my findings	Validate well, communicate	Accept and adjust

6. Completion criteria

The completion criteria have been split per category. Internship criteria aligns with the learning outcomes and personal goals of the student. Company criteria represents the expectations of the company towards the student. User criteria represents the end-user needs of the assignment solution. The completion criteria can be measured by submissions, tutor's and mentor's feedback, end-to-end testing and user satisfaction. Overall, the internship will be assessed and graded by 3 assessors. Furthermore, a successful solution will lead to an improvement on Canvas LMS that is used by peers and colleagues.

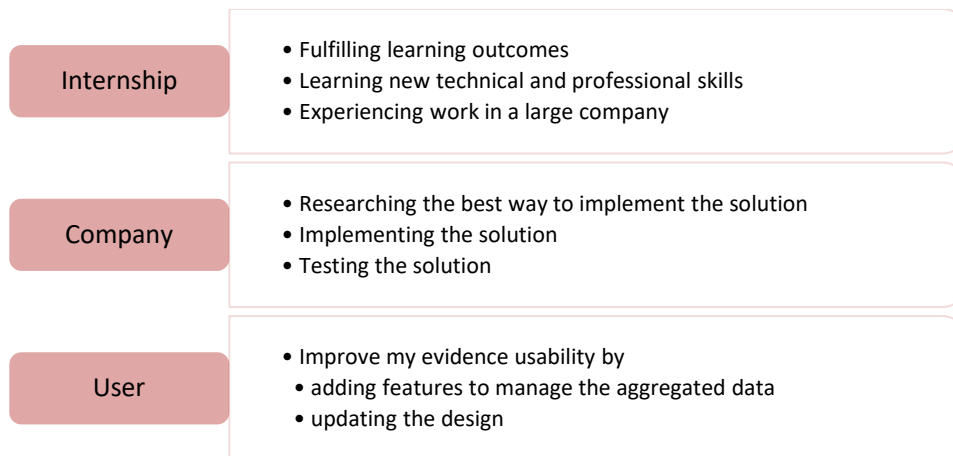


Figure 2. Project completion criteria overview.