Finding a Suitable Graduation Project

Author: Lucas Jacobs

Internship Semester Five

This assignment is about one module to implement from LB3 to LB4, which is called the 'qualification file'. A qualification file is a set of core tasks (basic and profile parts), work processes, and competencies. A qualification file is used in the MBO education of the Netherlands. It is used to check if a student has reached all the requirements of the specific education they are doing. The module consists of two parts.

- Managing the qualification files: maintaining the qualification files, elective parts, and importing qualification files. In this management you can do, CRUD operations, copying to institutes, searching, etc.
- Assessment scheme management: making an assessment scheme that teachers can use to grade students.

To continue, the objective of this internship is two things. To begin, to get experience in the ICT company and develop my soft-skill and developer skills. Secondly, the successful development of the module 'qualification file' to the expected outcomes Author-e demands.

Furthermore, the importance of this study is in the challenges that come with the outdated LB3 system. By correctly integrating the module 'qualification file' into the LB4 system, this project aligns with the goals of Simac Learning Solutions but it also ensures the continuity and maintainability of LearningBox.

*LB3: Learning Box 3. A LMS for students and teachers. For example, students can read the theory and take tests. Teachers can assess and grade students.

*LB4: The new version of LB3, that is currently in development

Company

Author-e started as TVAS in 1998, where it started making interactive videos and animations. In 2001 it changed to Content-e and it went to the name Author-e in 2010. The vision of Author-e is to have a trusted software firm specializing in designing, developing, implementing, hosting, and expertly managing web applications.

Author-e is a company that uses the model B2B. This means that it creates and maintains products of other companies. Besides doing tasks for companies, Author-e also has its own product. Author-e product is a collaborative authoring environment with integrated Document Management System (DMS) functionalities. To integrate document storage and authoring, we have created our own document format. These Author-e documents can be edited simultaneously by multiple authors within the system. Apart from the standard editing utilities, you can use our own collaborative functionalities.

Evaluation Of Internship

In today's world, where technology is evolving rapidly fast, this internship at Author-e has given me more confidence and knowledge to continue my journey as a Software Developer.

At the beginning of this internship, I got overwhelmed with all the things that I had to get used to. I had no experience with the framework they are using for LB3, also they used components in LB4 I had to get used to. Author-e uses for LB3 PHP, whereas for LB4 Blazor front-end, with a C# API. I managed to quickly get used to the LB4 environment. On the other side, understanding the LB3 system was quite a struggle, but eventually, by asking for help and questions about the system to various people, I managed to get a better understanding. The challenges that I faced when understanding the LB3 system with the outdated architecture, allowed me to improve my problem-solving skills, and further expand my understanding of software development complexities.

During the internship, I came across some real challenges such as complicated tasks and errors that were difficult to solve. This resulted sometimes in some stress. However, by applying the DOT framework and collaborating with the UI/UX developer, the company supervisor, and the client, I

managed to correctly plan my project that would result in a successful project. This experience of really applying correct planning improved me both mentally and gave me more confidence.

With the results of this project, I am proud of the products I managed to deliver. All in all, I expanded my technical skills, more confidence regarding meetings, significant planning improvements, and developed a better collaboration inside of a team. I would like to give gratitude to all the people who supported and mentored me during this internship at Author-e.

Ideas Graduation Project

- Needs to be closed distance to my home, so in the range of around 50 kilometers, since this graduation project can also potentially deliver me a full-time job.
- I am open to each opportunity, but I would be searching for smaller companies, since in the first years after graduation I want to work for a company and later on start my own company. Therefore this will also be a great opportunity for me to get a better insight into how a small company runs there business. Also, it can be each type of company, such as B2B, B2C, etc.
- One thing that would be important is that it will bring potential long-term impact. I am excited to have a project that can make a significant impact on the organization or the industry itself. For example, in a company that needs optimization in their supply chain, I can for example research an implementation using blockchain technology which not only aligns with my interest but also allows me to experience new technologies and improve potential business flows.
- Overcoming challenges: I am self-aware of the lack of professionalism when presenting, due to stress and a bit of anxiety, this is where I want to improve regarding soft skills. My overall technical skills can also improve in the sense of each area as a software engineer, to broaden my overall skills around how all processes work.
- I would like to have a graduation that is a specific assignment, but it strikes multiple topics to research and apply my gained knowledge during the graduation. This means not only the standard coding but also trying to learn more in-depth about topics and apply them. Furthermore, it needs to align with my current knowledge and build upon it, so the topic should also not be abstract for me.

Example Suitable Project
https://asam.fhict.nl/student/Assignment/Details/2880eea9-9936-47bd-880d-e28dc5159fb5

Approach To Graduation Project
How I would approach the graduation project, I would follow the following approach:

- **Understanding the assignment requirements**: Getting to know what the assignment is about to understand the scope, objectives, and requirements of the project. Also setting up the desired outcomes what I want to achieve and also what is expected to be achieved.
- **Assessing Skills and Knowledge**: Comparing my current skills and knowledge to what is needed for the assignment. This is to identify my gaps or areas that need improvement to meet the requirements of the project.
- **Research starts on the topic:** Getting to know the technology and deepening my knowledge of the subject.
- **A Technical Roadmap**: A roadmap that will show the steps that are needed to fulfill the requirements of the graduation project. So breaking down the tasks into manageable epics, considering multiple factors.
- **Planning**: A detailed time plan to have an overview of each task that needs to be completed, taking into account the duration of the graduation project and deadlines of the company. This is to plan my way around having sufficient time to properly do my research, development, potential testing, and refinements to the project.
- **Potential Challenges**: Look for potential challenges or obstacles that can become challenging during this project. So technical complexity, resource restraints, or even compatibility issues.

Therefore, communication will be a key factor, making personal leadership an important role for my graduation project.

- **Collaborating with the potential development team**: Try to gain knowledge when needed with the development team to gather insights, get guidance, and align with the approach of the company standards and practices. The communication will lead to a smooth and successful project execution.
- **Continuous Feedback**: During this project, I need to seek feedback from my supervisors from both the school and the company itself, but also from other colleagues of the company. This is to identify areas where I can improve and validate my progress, to adjust my progress accordingly. This will make sure to grow my learning mindset and will improve my overall development.

To give a time plan on how to take this into practice, I will show an overview of how I will approach the assignment that I gave for an example of a suitable project that I would like to dive into, based on an 18-week semester duration.

- **Week 1-2: Initialization phase**
  - Gather the initial information about the requirements, and start research on blockchain technology.
  - Start on the project plan (project goals, scope, user stories, organization information).
  - Kick-off meeting with both the company and Fontys supervisor to establish the roles and responsibilities.
- **Week 2**
  - Update user stories and create a prioritized backlog.
  - Finalize the project plan.
  - Having a first design of the architecture and design for the Dapp, including the frontend components and smart contracts.
  - Have a sprint planning meeting with my company supervisor, to select the user stories to work on the first sprint.
- **Week 3-16: Sprints execution**
  - Scrum is used, having bi-weekly sprints, lasting two weeks. (assuming two weeks)
  - Implement front-end components using Vue.js, for the first version of the Dapp.
  - Developing smart contracts that are made with Solidity/C# or Python, focussing on NFTs, etc.
  - Having regular sprint meetings with the company including retrospectives, gathering all the feedback, and improving upon it. Also gaining feedback from the Fontys supervisors, to make sure that the project is on the right track, regarding their expectations.
  - Collaborate closely with the development team and stakeholders, to make sure the product will align with their requirements.
  - Doing applied research that is appropriate to this assignment.
- **Week 16**
  - Completing the final sprint, and prioritizing for any refinements.
  - Prepare a project presentation to finalize my findings and results to the company.
  - Have a sprint review meeting, to showcase the completed Dapp, and final feedback on it.
- **Week 17-18: Project finalization and closing**
- **Week 17**
  - Finalize the documentation, including user manuals to understand the work, deployment introductions, and technical requirements.
  - Address recommendations and potential bugs in the result.

- Week 18
  - Present the results to the company and Fontys supervisors.
  - Discuss the outcomes, what I have learned, and future improvements to work on.
  - Finish and submit the final project report, with the work I have done, conducted research with conclusions, achievements, recommendations for future work, and evaluation on the whole project.
  - Be proud of the result I have achieved and celebrate it with the company.

So by applying the Scrum methodology, having consistent meetings with people who are involved in the project, seeking feedback, follow the structure that is set in the project plan, that will result in finally delivering a final Dapp product that will meet the expectations of Citrus Andriessen.

This way of approach can vary on the way of working in the company, but most companies apply a Scrum approach.