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Portfolio Reader Guide

S-A-RB

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# Introduction

< Explanation document, reading guide, …>

*This guide guides the reader through the contents of your portfolio and shows where you stand in relation to your learning outcomes at a particular moment in the semester.*

*The portfolio is the collection of all partial results that you have achieved at a particular moment (snapshot) in the semester. This snapshot is made at the end of a sprint. For each learning outcome, you describe at what level you are. In addition, in the evaluation of each sprint, you describe the steps you are going to take to reach the next level.*

*At the end of the semester, your portfolio contains partial results that demonstrate that you have performed at a proficient level for all learning outcomes. You also conclude at that moment with a conclusion, which reflects on how your semester went.*

*Partial outcomes are all the products you have realized for the individual and pro task project: you can think of: Code, documents, snapshots, projects of followed tutorials, interviews, etcetera.*

*The portfolio and your reading guide are growing during the semester.*

< Explanation group project>

< Explanation of individual project>.

<Explain your starting knowledge, experience, interests and what you would like to learn and achieve this semester>.

# Learning outcomes

*Indicate where you think you are on the development scale, based on the feedback from your teachers.*

*Describe to the reader for each learning outcome what you have achieved during the past sprint and why this contributes to the learning outcome. Substantiate the why with feedback from your technical tutors.*

*The portfolio grows with content; sometimes certain content will no longer be relevant. Describe each sprint from the current status of your portfolio. You use hyperlinks to refer the reader directly to material in your portfolio.*

*(Reflection on progress) indicate where you are now and what your tutors have given as feedback to grow further on the development scale.*

## Enterprise software development as a team effort.

You develop and deploy enterprise software, both individually and as a team, which fits the current question and needs of your stakeholders. Your final solution is designed with the possibility for future further development.

**Development (undefined, orienting, beginning, proficient, advanced)**

|  |  |  |  |
| --- | --- | --- | --- |
| **ID** | **Description** | **Type** | **Level** |
| 1.1 | Sprint 0 | Group project | orienting |
| 1.2 | Sprint 1 | Individual project/ Group project | orienting |
| 1.3 | Sprint 2 | Individual project/ Group project | orienting |

**Substantiation**

1.1- Sprint 0 Group project

During the previous sprint, the project team worked on creating an initial documentation that defined required features that would be essential for the client. As well as, getting familiar with the currency trading concept.

1.2- Sprint 1 Individual project

In the individual project I have worked on creating the initial documentation required to detail the required functionalities as well with time plan on how I expect to meet the raised criteria.

1.3 - Sprint 1 Group project

During the previous sprint, the project team created an initial architecture for the currency trading testing website. To do this, the team conducted interviews and used event storming techniques to gather information on the customer's requirements. By analyzing this information, the team was able to identify the key features and functionalities that needed to be included on the website.

1.3 - Sprint 2 individual project

For the iteration of the sprint, I have researched for the best databases that would work well with appliance of microservice. Set up the initial project repository with several microservices in place to continue making the message broker and gateway.

1.3 - Sprint 2 Group project

For the iteration of the sprint, I have worked on finding alternatives to setting up the trading system to work via commands but to no success. This approach has taken too long and has not brought many results in progressing with the projects development. These results encouraged us to find other alternatives how we can approach the provided problem of testing strategies. We started collecting historical tick data and researching how to test strategies with python libraries.

**Reflection on my progress**

1.1- Sprint 0

My semester coach recommended to ensure that the requirements from the group project corelate with the learning outcomes and which of the features would correlate with the required functionalities. For the initial research and documentation, I believe we are at the level of ‘orienting’.

Graphical user interface, text, application

Description automatically generated

1.2 - Sprint 1

For the sprint I have drafted an initial research plan draft where I detailed what questions I’m interested going in depth. For the initial research and analyzing my individual project I believe I have achieved the level of ‘orienting.’

Graphical user interface, text, application

Description automatically generated

1.3 - Sprint 2

For the sprint I have started on my individual project developing initial microservices and the architecture for further development. In addition, restructured my prioritization what needs to be developed to adhere to the learning outcomes. As well as, worked on a group project finding trusty resources for historical currency tick data to have additional options to testing strategies effectiveness.

For the initial start on coding for my individual project as well finding alternative approach to the group projects problem I believe I have achieved the level of ‘Orienting’.

Graphical user interface, text, application, chat or text message

Description automatically generated

## Investigative Problem-Solving

You deliver professional products according to planning, which is the result of solving problems in a structured and methodical approach. You demonstrate a critical view towards your own and other people’s work.

**Development (undefined, orienting, beginning, proficient, advanced)**

|  |  |  |  |
| --- | --- | --- | --- |
| **ID** | **Description** | **Type** | **Level** |
| 2.1 | Sprint 0 | Group project | orienting |
| 2.2 | Sprint 1 | Individual project/ Group project | orienting |
| 2.3 | Sprint 2 | Individual project/ Group project | orienting |

**Substantiation**

2.1- Sprint 0

During the initial project planning phase, we analyzed different functionalities as well as required features that would be important to the client. We decided to start various documentations regarding the research of strategy back testing for currency trading software.

2.2 - Sprint 1 Individual project

For the individual project I have researched on distinctive features that would align with the required learning outcomes. This allowed me to focus on several features that would be a sufficient implementation to achieving in building a microservice based application.

2.2 - Sprint 1 Group project

During this sprint iteration, we have went documenting the project in depth on understanding how the software architecture should look like. As well as, requiring client meeting to present both new developments and the current questions we have regarding the inside information about trading.

2.3 - Sprint 2 Individual project

During this iteration I have researched on different databases that would work well with microservices. As well as developed several microservices to start developing a gateway and message broker which would allow me to communicate with different services at once. So far, I was able to finalize two of the services and started working on creating docker instances of the project.

2.3 - Sprint 2 Group project

During this iteration I had to research alternative approaches to making meta trader run headless as well as, testing different strategies to run on a headless meta trader. I was able to run the strategy, but it was not able to run without manual interaction because of license issues. In addition, I was able to collect some recent historical currency data which would allow me to test different strategy performances using external libraries. I need to connect several months of data to have a good ground for evaluation to get better insight upon the strategy performance.

**Reflection on progress**

2.1- Sprint 0

My semester coach recommended to ensure that the requirements from the group project corelate with the learning outcomes and which of the features would correlate with the required functionalities. For the initial research and documentation, I believe we are at the level of ‘orienting’.

Graphical user interface, text, application

Description automatically generated

2.2-Sprint 1

For the sprint I have drafted an initial research plan draft where I detailed what questions I am interested going in depth. For the initial research and analyzing my individual project I believe I have achieved the level of ‘orienting.’

Graphical user interface, text, application, email

Description automatically generated

2.2- Sprint 2

For this sprint I have worked on creating different microservices for my individual project to allow messaging between different services so far, I was able to fully finish two of services. As well as, worked on group project to find an approach to testing different strategies and finding suitable sources of historical currency tick data that I could later use for backtesting.

For this I believe I have reached the level of ‘orienting.’

Graphical user interface, text, application, email

Description automatically generated

## Personal Leadership

You acquire skills required for your future career. You are aware of multiple career paths and can reflect which ones fit best, considering your (potential) skills and ambitions. You are aware of developments in software engineering and can signal trends.

**Development (undefined, orienting, beginning, proficient, advanced)**

|  |  |  |  |
| --- | --- | --- | --- |
| **ID** | **Description** | **Type** | **Level** |
| 3.1 | Sprint 0 | Group project | orienting |
| 3.2 | Sprint 1 | Individual project/ Group project | orienting |
| 3.3 | Sprint 2 | Individual project /Group project | orienting |

**Substantiation**

3.1- Sprint 0

During the initial project planning phase, we analyzed different functionalities as well as required features that would be important to the client. We decided to start various documentations regarding the research of strategy back testing for currency trading software.

3.2- Sprint 1 Individual project

For my individual project, I have started in drafting several documentations regarding both research and feature requirements. This would allow me to plan my sprints effectively in future sprints.

3.2- Sprint 1 Group project

During this sprint iteration, we have went documenting the project in depth on understanding how the software architecture should look like. As well as, requiring client meeting to present both new developments and the current questions we have regarding the inside information about trading. With the addition of event storming, we were able to get a clearer grasp on how the system should function.

3.3- Sprint 2 Individual project

For my individual project, I have created several microservices to allow me to work further along with developing an architecture for messaging in-between the two services. I am intending to containerize my application components separately to make them able to communicate using ‘RabbitMQ’.

3.3- Sprint 2 Group project

For the group project, we have worked on configuring a repository to running meta trader headless to be able to run custom strategies through commands but to no success. For that reason, we have started developing an alternative approach to the project incase the main approach fails.

**Reflection on progress**

3.1- Sprint 0

My semester coach recommended to ensure that the requirements from the group project corelate with the learning outcomes and which of the features would correlate with the required functionalities. For the initial research and documentation, I believe we are at the level of ‘orienting’.

3.2- Sprint 1

For the current sprint, I have developed several documentations that would allow me to further plan out my development cycle, as well recognize several functional requirements that align with the required learning outcomes. For the initial research and documentation, I believe we are at the level of ‘orienting’.

3.2- Sprint 1

For this sprint we analyzed functional requirements for the developed software to pinpoint how the

system should function. This allowed us to get a clearer overview of the functionality’s workflow. For the

initial research and documentation, I believe we are at the level of ‘orienting’.

3.3: Sprint 2

For this sprint I have tried running strategies on a headless Meta trader and find an approach to retrieving useful data remotely which led to researching alternative ways to obtain strategy effectiveness results. Alternatively, I have created several microservices to continue to containerize the application using docker. I believe, I am at the level of ‘orienting.’



## Targeted Interaction

You use appropriate communication considering your role in a team, your audience, and the medium to convey your message and results of your software development process.

**Development (undefined, orienting, beginning, proficient, advanced)**

|  |  |  |  |
| --- | --- | --- | --- |
| **ID** | **Description** | **Type** | **Level** |
| 4.1 | Sprint 0 | Group project | orienting |
| 4.2 | Sprint 1 | Individual project /Group project | orienting |
| 4.3 | Sprint 2 | Individual project /Group project | orienting |

**Substantiation**

4.1- Sprint 0

During the initial start of the sprint, we have communicated with our assigned teachers and clients. As well as, having an introduction to the project that we will be partaking in.

4.2- Sprint 1

For my individual project, I have communicated with several teachers explaining my initial thoughts on the project and justifying which features corelate with the learning requirements.

4.2- Sprint 1

During this sprint iteration, we have introduced the group project to different teachers as well giving a presentation how we understand the current problem to the client highlighting how we are expecting in mitigating his initial problem.

4.3- Sprint 2

During this sprint iteration, we have developed an Ethical design document which would allow us to analyze the project on the ethical standpoint. By playing the TICT Ethics game we got insight upon possible ethical conflicts to the application which we could categorize giving us some pointers of what we should consider further into the development.

**Reflection on progress**

4.1- Sprint 0

For the sprint, we have contacted different teachers discussing about the proposed group projects. For the initial discussion, I believe we are at the level of ‘orienting’.

4.2- Sprint 1

For the sprint, I have communicated with several teachers explaining my project idea. For the initial discussion, I believe we are at the level of ‘orienting’.

4.2- Sprint 1

For this sprint we have presented our understanding of the group project and taken in client’s feedback on what does he prioritize. For the initial research and communication, we are at the level of ‘orienting.’

4.3- Sprint 2

For this sprint we have analyzed the group project ethical standpoint. This was done playing TICT game analyzing different points of projects functionalities if they comply with Ethical behavior of software. On deliberation with the other teams, we got valuable insight upon disclaimers that we should provide for users and data privacy when any kind of data will be saved. We intend to consider these pointers moving forward with the project.

## Scalable architectures

Besides functionality, you develop the architecture of enterprise software based on quality attributes. You especially consider attributes most relevant to enterprise contexts with high volume data and events. You design your architecture with future adaptation in mind. Your development environment supports this by being able to independently deploy and monitor the running parts of your application.

**Development (undefined, orienting, beginning, proficient, advanced)**

|  |  |  |  |
| --- | --- | --- | --- |
| **ID** | **Description** | **Type** | **Level** |
| 5.1 | Sprint 0 | Group project | undefined |
| 5.2 | Sprint 1 | Individual project /Group project | orienting |
| 5.3 | Sprint 2 | Individual project /Group project | orienting |

**Substantiation**

5.1: Sprint 0

During this iteration we haven’t started on developing the architecture.

5.2: Sprint 1

During this iteration we haven’t started on developing the architecture.

5.2: Sprint 1

During this iteration we have done some event storming to get a better grasp of the software functionality.

5.3: Sprint 2

For this iteration I have worked on setting up several microservices with separate databases using PostgreSQL. I did some research to know which database is best suited for microservices and provides the most features. Such as spring data JPA that provides a set of abstractions that allow developers to work with databases using consistent API.

So far, I am using spring basic Authentication to secure my applications endpoints but I’m intending of using OAuth or JWT tokens but to go further in that I want to do additional research.

**Reflection on progress**

5.1: Sprint 0

I believe we are at the level of ‘undefined.’

5.2: Sprint 1

I believe we are at the level of ‘undefined.’

5.2: Sprint 1

For making a first draft of functional requirement I believe I have achieved the level of ‘orienting’

5.3: Sprint 2

I have developed several restful API’s which will allow me to continue in developing more features to my software as now I have a working database. Next, I should focus on developing some testing and security to increase the software maintainability.

## **Development & Operations (DevOps)**

You set up environments and tools which support your chosen software development process. You provide governance for all stakeholders’ goals. You aim for as much automation as possible, to enable short release times and high software quality.

**Development (undefined, orienting, beginning, proficient, advanced)**

|  |  |  |  |
| --- | --- | --- | --- |
| **ID** | **Description** | **Type** | **Level** |
| 6.1 | Sprint 0 | Group project | undefined |
| 6.2 | Sprint 1 | Individual project | Undefined |
| 6.3 | Sprint 1 | Group project | undefined |

**Substantiation**

6.1: Sprint 0

During this iteration we haven’t started on developing the architecture.

6.2: Sprint 1

During this iteration we haven’t started on developing the architecture.

6.2: Sprint 1

During this iteration we have done some event storming to get a better grasp of the software functionality.

6.3: Sprint 2

During this iteration we haven’t started on developing the architecture.

**Reflection on progress**

6.1: Sprint 0

I believe we are at the level of ‘undefined.’

6.2: Sprint 1

I believe we are at the level of ‘undefined.’

6.2: Sprint 1

For making a first draft of functional requirement I believe I have achieved the level of ‘orienting’

6.3: Sprint 2

During this iteration we haven’t started on developing the architecture.

## Cloud Services

You can explain what a cloud platform provider is and can deploy (parts of) your application to a cloud platform. You integrate cloud services (for example: Serverless computing, cloud storage, container management) into your enterprise application, and can explain the added value of these cloud services for your application.

**Development (undefined, orienting, beginning, proficient, advanced)**

|  |  |  |  |
| --- | --- | --- | --- |
| **ID** | **Description** | **Type** | **Level** |
| 7.1 | Sprint 0 | Group project | Undefined |
| 7.2 | Sprint 1 | Individual project/ Group project | Undefined |
| 7.3 | Sprint 2 | Individual project/ Group project | undefined |

**Substantiation**

7.1: Sprint 0

During this iteration we have not started on developing the architecture.

7.2: Sprint 1

During this iteration we have not started on developing the architecture.

7.2: Sprint 1

During this iteration we have done some event storming to get a better grasp of the software functionality.

7.3: Sprint 2

During this iteration I have only started dockerizing the application as I just developed several microservices to communicate in between.

**Reflection on progress**

7.1: Sprint 0

I believe we are at the level of ‘undefined.’

7.2: Sprint 1

I believe we are at the level of ‘undefined.’

7.2: Sprint 1

For making a first draft of functional requirement I believe I have achieved the level of ‘orienting’

7.3: Sprint 2

During this sprint I have not developed any cloud services, but I started on dockerizing my project. For this I believe I am at the level of ‘orienting’.

## Security by design

You investigate how to minimize security risks for your application, and you incorporate best practices in your whole software development process.

**Development (undefined, orienting, beginning, proficient, advanced)**

|  |  |  |  |
| --- | --- | --- | --- |
| **ID** | **Description** | **Type** | **Level** |
| 8.1 | Sprint 0 | Group project | undefined |
| 8.2 | Sprint 1 | Individual project/ Group project | undefined |
| 8.3 | Sprint 2 | Individual project/ Group project | orienting |

**Substantiation**

8.1: Sprint 0

During this iteration we have not started on developing the security architecture.

8.2: Sprint 1

During this iteration we have not started on developing the security architecture.

8.3: Sprint 2

During this iteration I have created several microservices using postgres as their database. I believe by utilizing postgres ability to use JPA is easier implementation as well it leaves developers making less mistakes and vulnerabilities to the project.

**Reflection on progress**

8.1: Sprint 0

I believe we are at the level of ‘undefined.’

8.2: Sprint 1

I believe we are at the level of ‘undefined.’

8.3: Sprint 2

For this sprint I have set up initial microservices to communicate by http requests, for this I believe I have achieved the level of ‘oriented.’

## Distributed data

GDPR

You are aware of specific data requirements for enterprise systems. You apply best practices for distributed data during your whole development process, both for non-functional and functional requirements. You especially take legal and ethical issues into consideration.

**Development (undefined, orienting, beginning, proficient, advanced)**

|  |  |  |  |
| --- | --- | --- | --- |
| **ID** | **Description** | **Type** | **Level** |
| 1.1 | Sprint 0 | Group project | orienting |
| 1.2 | Sprint 1 | Individual project/ Group project | orienting |
| 1.3 | Sprint 2 | Individual project/ Group project | orienting |

**Substantiation**

9.1: Sprint 0

During this iteration we have not started on developing the security architecture.

9.2: Sprint 1

During this iteration we have not started on developing the security architecture.

9.3: Sprint 2

During this sprint iteration, we have developed an Ethical design document which would allow us to analyze the project on the ethical standpoint. By playing the TICT Ethics game we got insight upon possible ethical conflicts to the application which we could categorize giving us some pointers of what we should consider further into the development. One of the main concerns from the other group who analyzed our project was the user data privacy. As the user wont trade real money but the strategies that they uploads is still considered personal information that needs to follow **GDPR** regulations. Due to this reason, it would be wise to give more disclaimers to the users who would use the application.

**Reflection on progress**

9.1: Sprint 0

I believe we are at the level of ‘undefined.’

9.2: Sprint 1

I believe we are at the level of ‘undefined.’

9.3: Sprint 2

I believe for developing an Ethical design document and participating in the activities I am on the level of ‘orienting.’

# Reflection

*Reflect here on your (study) process per sprint.*

*Where are you getting stuck, what is going well, where do you need help. This is not about the content; you have described this in the learning outcomes.*

Sprint 0

Sprint 1

Sprint 2

For this sprint I have focused on producing more for the group project neglecting individual project. Where I felt the responsibility of doing more for the group project due to lacking deliveries. I’m intending on focusing on my individual project for the next sprint as well deliver more in regard to the application deployment to docker and communication in between the microservices.

Sprint 3

Sprint 4

Sprint 5

# Conclusion

*Here, at the end of the semester, you reflect on your process and end result. You can also refer back to the goals you set in the introduction, to see to what extent you were able to achieve them.*

*Also mention what you are proud of, what you would like to do differently in the coming semesters and whether you have come to different insights about the field of study. Is there perhaps a particular subject you would like to explore further?*