Project Plan

Genzai

Venlo

Svetoslav Stoyanov

Onboarding process

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| **Version : 1.0** |
| **Status : Draft** |
| **Author : Svetoslav Stoyanov** |

Version

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| **Version** | **Date** | **Author(s)** | **Amendments** | **Status** |
| 1.0 | 06/02/2023 | Svetoslav Stoyanov | Start of project plan | concept |
| 1.1 | 28/02/2023 | Svetoslav Stoyanov | Draft ready to be sent out | Draft |
| 1.2 | 01/03/2023 | Svetoslav Stoyanov | Feedback applied and ready to be sent | Draft |

Communication

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| **Version** | **Date** | **To** |
| 1.1 | 27/02/2023 | Roy Lenders, Victor Plescius |
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Contents

[1. Information Page 13](#_Toc128573913)

[2. Project Assignment 14](#_Toc128573914)

[2.1 Context 14](#_Toc128573915)

[2.2 Goal of the project 14](#_Toc128573916)

[2.3 The assignment 15](#_Toc128573917)

[2.4 Scope 15](#_Toc128573918)

[2.5 Conditions 15](#_Toc128573919)

[2.6 Research questions 16](#_Toc128573920)

[3. Global Planning 17](#_Toc128573921)

[4. Project Sprints 18](#_Toc128573922)

[5. Communication iii](#_Toc128573923)

[6. Versioning iv](#_Toc128573924)

# Information Page

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| --- | --- |
| Type of report: | **Project Plan** |
| Student name: | **Svetoslav Stoyanov** |
| Student number: | **3793222** |
| Study: | **Informatics – Software Engineering** |
| Internship Period: | **February 2023 – June 2023** |
| Company name: | **Genzai** |
| Address: | **Villafloralaan 1** |
| Postal code + City: | **5928 SZ, Venlo** |
| Country: | **the Netherlands** |
| Company supervisor: | **Victor Plesciuc** |
| Supervising Lecturer: | **Christian Salz** |

# Project Assignment

## Context

*<< Briefly describe the company and the context of the assignment. Provide information about the products and services of the company that your assignment focuses on. If you work for an external client of your client – think of a client of an internship company – describe them in the same way. In addition, indicate the concrete reason for the assignment and what developments are taking place in the company or the market that lead to the assignment.>>*

Genzai B.V. is an A.I. investment company which works together with industry partners in building Deeptech based start-ups. Now Genzai is involved in 14 different start-ups from a broad range of different industries.

Genzai is working together with ViaLuxury (vialuxury.com) which is a luxury hotel booking website. ViaLuxury focuses on selling the overcapacity of 4- and 5-star hotels in package deals. They currently work with 100 hotels in the Netherlands and Belgium but want to quickly expand across Europe in the next few years.

## Goal of the project

*<<NB To make your goals as concrete as possible, you should already have a good idea of the problem. What exactly is the issue? What is the problem to be solved or what is the challenge? Why is this question there? What is the urgency? What caused it? What are the consequences if nothing is done? And what has already been done to arrive at an answer? It is essential that you look critically at the client's needs. Is the problem outlined actually the problem? And is your client's question actually the right solution? Ask critical questions and try to arrive at the correct problem statement together with the client. If more research is needed to determine this, include this in your approach.>>*

Designing and building a website that allows for hotels to register and upload photos, fill in the descriptions and can configure package deals (for example hotel together with a dinner or a massage etcetera.

During this process (Onbroarding process) the hotel should be advised on different areas like pricing, package deals and should be able to select advised options.

A database should be designed and build to store the hotels, the database should be connected to API endpoints for this functionality scope.

Moreover, the algorithms (back-end calculations) for advising hotels should be designed and build.

My part is also to Build and test all API endpoints and support the front-end resource in connecting front-end with back-end (Collaboration with another employee).

The current situation and the issue are that, if a hotel wants to create a package deal, the employees need to contact ViaLuxury via phone or email including photos and other details about the package deal. Therefore, the challenge is to automate this process as much as possible.

The question Is “How would ViaLuxury Managers and employees onboard a hotel on their system as fast and easy as possible?”

## The assignment

The topic of this assignment is to

* Design and build a back-end structure for the website.
* Design and build a database to store all the onboarded hotels, their employees and administration, ViaLuxury representatives.

The hotels would be able to (via API Endpoinds):

* Register
* Upload photos
* Fill in descriptions
* Configure package deals

The system would also advice the hotel on different areas such as pricing, package deals and should be able to select advised options.

Moreover, the algorithms (back-end calculations) for advising hotels should be designed and build.

## Scope

*<< Indicate the scope. If necessary, make a context diagram for clarification that shows the relationships with other systems and the environment. This section should also describe what will not be delivered. For example, if you agree to deliver a high fidelity prototype, then (part of) the implementation and management falls outside your scope.*

*Make this as concrete as possible so that there are no misunderstandings between you and your client.*  
*>>.*

|  |  |
| --- | --- |
| **The project includes:** | **The project does not include:** |
| 1. Design and build back-end structure | 1. AI-related operations |
| 1. Design and build database | 1. Front-end related operations |
| 1. Implement endpoints |  |
| 1. Test implementation |  |
| 1. Back-end calculations for advising hotels |  |

## Conditions

Technologies used will be:

* FastAPI (for the API portal)
* Vue.js (front-end)
* Amazon Cloud
* Python as back-end language
* Slack (communication with the team and the client)
* GitLab (Version control)
* Jira (Issue tracker, task separation, project management)
* Time tracking

## Research questions

1. What packages are sold the most by 4- and 5-star hotels”. And other topics about packages and hotels?
2. How to run a PostgreSQL running on a Docker container?
3. How to deploy back-end system on a Amazon cloud?
4. How to create a manageable Python solution using Fast API

# Approach and Planning

## Approach

*<< Indicate here which method you follow in your project plan, for example whether you use a waterfall or scrum method. Also indicate how you will approach the problem definition phase and completion phase. With a scrum approach you can think of length of sprints, set-up of your sprints, stand-up, set-up of demos, retrospective, etc.)>>.*

The way of work for this internship will be the scrum methodology. The reasoning behind this choice is that I have been using the scrum methodology for many projects during my studies and am very familiar with it. Every Wednesday we have a weekly meeting, where we review tasks and issues. By working in an Agile way, both I and the client knows what is expected of me, creating clear communication and guidance for me. This creates the arguably most optimal solution for both me individually and Genzai/ViaLuxury.

## Research Methods

|  |  |  |  |
| --- | --- | --- | --- |
| **Question** | **Strategy** | **Instruments** | **Partial Products** |
| How to run a PostgreSQL running on a Docker container? | Library | **Library:** Looking into and understanding the fundamentals of how the Docker system works. It’s important to have a good understanding so that nothing is lost on later stage of the project. | * Literature study |
| How to deploy back-end system on a Amazon cloud? | Library  Experiment | **Library:** Looking into and understanding documentation about deploying a back-end structure on Amazon cloud service.  **Experiment:** Try different ways of implementation and select the most suitable one regarding ease of implementation, performance and documentation provided. | * Literature study * Experiment |
| How to create a manageable Python solution using Fast API | Library  Library  Lab  Field | **Library:** Looking into and understanding documentation concerning FastAPI implementation  **Library:** Analyse already existing code within Genzai and outside to gain a deeper understanding.  **Lab:** Unit Test API endpoints to make sure that they are working.  **Field:** See the documentation for existing code regarding their API structure. This will allow me to continue to write code in a similar manner to how the reset is written, making it simpler and clearer for the other developer. | * Literature study * Available Product Analysis * Unit Testing * Document Analysis |

# Global Planning

|  |  |  |
| --- | --- | --- |
| **Phases** | **Start date** | **End Date** |
| Initial project planning, getting to know the team and use cases separation | 06/02/2023 | 14/02/2023 |
| Sprint 1: Analysis and initial design. | 22/02/2023 | 08/03/2023 |
| Sprint 2: Analysis, update analysis and design artefacts, hotel research, initial implementation. | 08/03/2023 | 22/03/2023 |
| Sprint 3: Update design artefacts, Docker & AWS research. | 22/03/2023 | 05/04/2023 |
| Sprint 4: Database implementation changes/updates, and base endpoints. PostgreSQL on Docker implement. | 05/04/2023 | 19/04/2023 |
| Sprint 5: Back-end structure update, endpoints implementation, unit testing. Back-end on the cloud (AWS) implement. | 19/04/2023 | 03/05/2023 |
| Sprint 6: Back-end – database communication models and endpoints implementation, fix known bugs, modify unit tests. | 03/05/2023 | 17/05/2023 |
| Sprint 7: Endpoints implementation and unit testing, update analysis and design artefacts.  Wrap up (Optimization, polish the app, additional testing, finalize artefacts). | 17/05/2023 | 31/05/2023 |

# Project Sprints

Workday = 8 hours

|  |  |  |  |  |
| --- | --- | --- | --- | --- |
| **TaskID** | **Task name** | **Duration** | **Start Date** | **End Date** |
| 1 | Internship Genzai with ViaLuxury as a client. | ~ 80  Workdays | 06/02/2023 | 31/05/2023 |
| 2 | Basic research to support design and project plan | 6 Workdays | 06/02/2023 | 14/02/2023 |
|  |  |  |  |  |
| **Sprint 1: Analysis and initial design** | | | | |
| 3 | Initial use case diagram, use case scenarios and DB design, Project plan design basic research | 2 workdays | 22/02/2023 | 23/02/2023 |
| 4 | Meeting Bart & Alba, creating tasks, improving DB Schema, changing use cases and user stories | 1 workday | 24/02/2023 | 24/02/2023 |
| 5 | Writing Project plan, reviewing similar DB Schema to help improve our own | 1 workday | 27/02/2023 | 27/02/2023 |
| 6 | Finish writing project plan.  Update DB Schema according to feedback | 1 workday | 28/02/2023 | 28/02/2023 |
| 7 | Present DB Schema and improve according to the feedback | 2 workdays | 01/03/2023 | 02/03/2023 |
| 8 | Update DB Schema, request feedback | 2 workdays | 03/03/2023 | 06/03/2023 |
| 9 | Final DB Schema update | 2 workdays | 07/03/2023 | 08/03/2023 |
|  |  |  |  |  |
| **Sprint 2: Analysis, update analysis and design artefacts, hotel research, initial implementation** | | | | |
| 10 | Request approval for DB Schema.  Initial PostgreSQL DB implementation.  Research “what packages are sold the most by 4- and 5-star hotels” topic. | 1 workday | 08/03/2023 | 08/03/2023 |
| 11 | Generate initial FastAPI structure. Create register and login endpoints | 1 workday | 09/03/2023 | 09/03/2023 |
| 12 | Improve back-end structure, create endpoints, test initial database connection, update analysis and design artefacts | 6 workdays | 10/03/2023 | 17/03/2023 |
| 13 | Write initial unit tests, finalize back-end structure | 3 workdays | 20/03/2023 | 22/03/2023 |

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| **Sprint 3: Update design artefacts, Docker & AWS research** | | | | |
| 14 | Update analysis and design artefacts. Research PostgreSQL container running on Docker | 6 workdays | 22/03/2023 | 29/03/2023 |
| 15 | Research “How to run the back end on Amazon Cloud” and initial implementation | 5 workdays | 30/03/2023 | 05/04/2023 |
|  |  |  |  |  |
| **Sprint 4: Database implementation changes/updates, and base endpoints. PostgreSQL on Docker implement.** | | | | |
| 16 | Update/change the database. | 2 workdays | 06/04/2023 | 07/04/2023 |
| 17 | Update back-end structure, add/modify endpoints | 4 workdays | 10/04/2023 | 14/04/2023 |
| 18 | Run database on docker container. | 3 workdays | 17/04/2023 | 19/04/2023 |
|  |  |  |  |  |
| **Sprint 5: Back-end structure update, endpoints implementation, unit testing. Back-end on the cloud (AWS) implement.** | | | | |
| 19 | Write/Improve unit tests on existing implementation | 5 workdays | 20/04/2023 | 26/04/2023 |
| 20 | Deploy back-end on the cloud (AWS) | 5 workdays | 27/04/2023 | 03/05/2023 |
|  |  |  |  |  |
| **Sprint 6: Back-end – database communication models and endpoints implementation, unit testing.** | | | | |
| 21 | Create Data transfer objects | 2 workdays | 04/05/2023 | 05/05/2023 |
| 22 | Test DTO for DB communication operations. | 5 workdays | 08/05/2023 | 12/05/2023 |
| 23 | Update analysis and design artefacts. Implement new endpoints/improve old ones. | 2 workdays | 15/05/2023 | 17/05/2023 |
|  |  |  |  |  |

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| **Sprint 7: Endpoints implementation and unit testing, update analysis and design artefacts.** | | | | |
| 24 | Update DTOs, update analysis and design artefacts, improve documentation | 6 workdays | 18/05/2023 | 25/05/2023 |
| 25 | Update unit tests for DTO, fix known bugs, optimize DTO – DB communication | 4 workdays | 26/05/2023 | 31/05/2023 |

# Communication

Currently, the project team holds weekly progress meetings that last for an hour each. These meetings take place in person at the company's Venlo location. However, in case of necessity, the team holds the meetings online through Zoom. If the need arises for additional meetings, team members arrange them according to the specific case requirements. Besides, team members communicate during work hours at the working location as needed.

For written online communication, the team members use email or **Slack** for fast communication. To manage project tasks and sprints, the team uses **Jira** as their Scrum tool.

# Versioning

Our version control system is **GitLab**, where all up-to-date artefacts are stored.