API Documentation and Integration App

SOC09109 - Group Project

Group 49:

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Table of Contents

1. Introduction

1.1 Client Brief: Coastr

Coastr is a technology development company that works in the transportation sector, developing solutions and improvements for the car and van rental process. They maintain a fully-digital vehicle rental system with the aim of creating extensible products to create a seamless vehicle rental process for their customers.

Coastr aims to bring a new age of convenience and competition to the vehicle rental arena, giving customers access to competitive rates and exemplary service by creating an all-in-one platform that allows for digital control of vehicle fleets and business operations. These tools would allow Coastr customers to have a greater level of control over their vehicles while also receiving feedback and metrics for their business via advanced AI and telematics technologies.

1.2 Project Brief

The goal in the API Documentation and Integration App project (ADIA) is to build a client-facing app that serves as a central hub for Coastr customers integrating with their API. The app will provide clear visuals of API functions and thorough documentation, simplifying integration and decreasing the need for technical assistance. The app will assist customers in understanding, integrating, and using the Coastr API efficiently.

Anticipated advantages include enhanced customer integration experience, increased understanding of API features and limitations, and reduced need for direct technical assistance.

The cost and duration of the project have been estimated and are based on factors such as project scope, team capability, and the quality and availability of 3rd-party solutions. To identify relevant parties a dynamic stakeholder list will be maintained through the lifecycle of the project. The stakeholders, including the Coastr-appointed project representative, Customer Management team lead, development team members, and project manager, will identify and agree on requirements and quality expectations.

The objective of the ADIA project is to improve the customer experience and support customer success by providing a comprehensive, centralized, and user-friendly web application for

accessing API documentation and integrating with the Coastr API. This is expected to increase customer satisfaction, reduce the need for technical support, while also boosting efficiency in the integration process.

2. Project Description

From the outset of the project Coastr has had a few objectives firmly in focus, while also leaving plenty of room for research and decisions for the development team. This has allowed the development team to focus on the steps that will illuminate viable solutions while developing a product that exceeds Coastr's expectation of a minimum viable product. To meet the objectives of the project and provide an extensible platform that allows for future expansion the project the web application for Coastr should be capable of the following:

- The product must be compatible with Coastr's backend
- Easy access by customers to API documentation
- Visualization of the function of the API
- Guidance to customers on best use practices and integration techniques
- Extensible solution to cover future adaptations of current API

2.1 Purpose and Expected Benefits

The primary purpose of the project is the creation of a web application that provides Coastr customers with a "one-stop-shop" for API information. This will allow Coastr to more easily and readily integrate with their customers to allow the use of the Coastr platform. The application will act as a repository of information regarding the use of the API as well as best use practices, and demonstrations of the features in the API itself. These qualities are expected to benefit Coastr in several different ways. The streamlined process of integrating new customers into the Coastr API will reduce the amount of expensive technical support required of Coastr. It will provide valuable documentation to be used by both customers and Coastr staff. The application will also increase customer satisfaction as they will be given the appropriate tools to effectively use, query and understand various aspects of the Coastr API.

2.2 Expected Cost and Duration

Expected cost and duration is very important in any project and the ADIA project is no different. While this project follows a production cycle built around Edinburgh Napier University's trimester

structure, the importance of considering the cost and duration of the project is still a vital component in the overall success of the project.

The production team for the ADIA project is a group of students involved in the study of Computer Science at Edinburgh Napier University. The students come from different disciplines but as a production team they will not receive monetary compensation from the client of the university. This does not mean there will be no expenses incurred during the course of the project, but they are expected to be small personal expenses. Coastr has offered to provide licenses for products that require them, but also encourage the development team to investigate the use of 3rd party open-source solutions.

Where the timeline is concerned, the facts of the matter are far more rigid than the expected costs of the project. This project will run a tight development cycle in line with the "Term 2" of Edinburgh Napier Universities' 2022-2023 academic year. Barring extenuating circumstances this connotates the delivery of the project by April, 24 2023.

2.3 Requirements and Quality Expectations

The requirements and quality expected of this project are of paramount consideration. Due to the client-facing nature of the application it will be important to maintain a professional level of polish on both the visible and invisible components of the application. To meet these expectations the requirements have been prioritized using the MoSCoW process to identify the requirements that are most important during further development.

Figure 1: MoSCoW Prioritization Process

Classification	Requirement
Must have	1. The app must be compatible with different operating systems and popular web browsers, while working seamlessly with Coastr's API
	2. The app must provide comprehensive documentation of integration with Coastr's API, including clear diagrams and illustrations of the various functions within the API
Should have	1. The app should be user-friendly, intuitive to the customer, and visually appealing
	2. The app should provide clear instructions for the customer as well as access to a knowledge base and customer support
Could have	1. The app could have security/authorization to authenticate customers and protect sensitive information regarding Coastr, their customers and their API
Will not have	1. The app will not be maintained by the university development team after its delivery to Coastr for use and maintenance in the Coastr production environment

The solution to meet these requirements will also have several quality expectations to ensure the development is delivering the best product possible.

- Project delivered to contain "Must Have" requirements
- Design capable of extensibility for future adaptation
- Quality documentation of the development process
- Regular contact with client to ensure the project is developing to meet their need
- Code for the project meets basic security requirements to prevent misuse
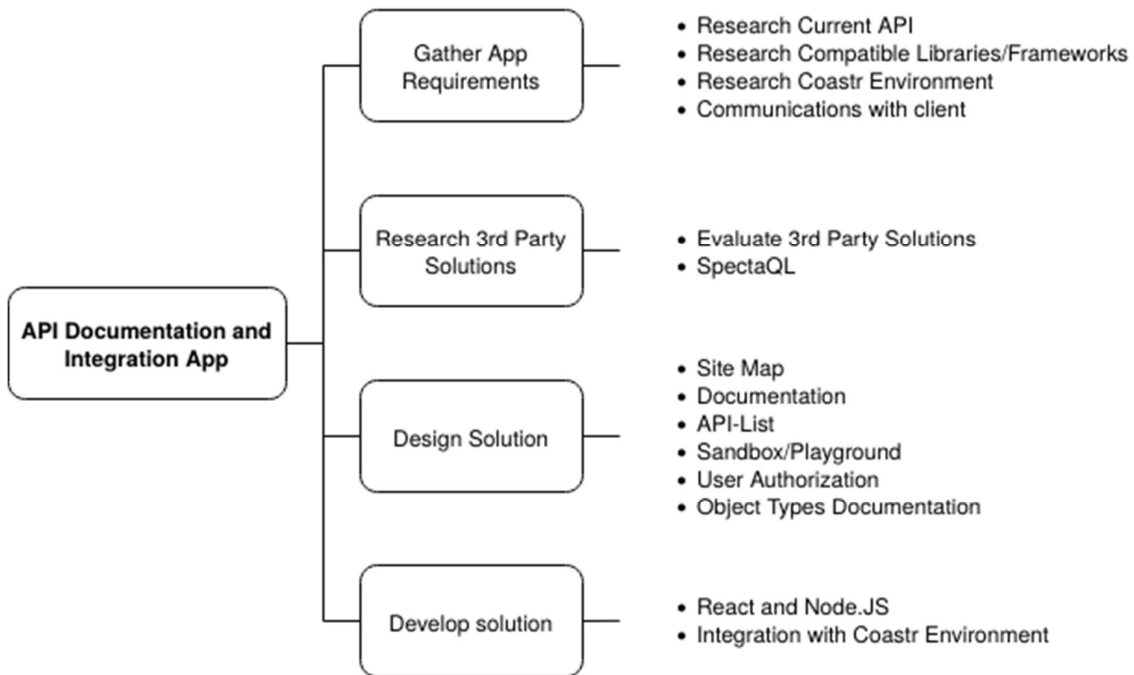
2.4 Stakeholder List

The stakeholders in this project are the people who will be most directly affected by the outcome of the project, in addition to being the people who have the most immediate influence over the project. These stakeholders will include several different representatives from Coastr as well as all members of the development team, to include the project manager. The stakeholders will be responsible for identifying and agreeing on the various quality expectations and requirements of the project. This list will be a living record of all the pertinent parties and their position that makes them relevant to the project. As a living record, this document will be updated if an additional relevant party is discovered, at the time of that discovery. This list acts as a record of the individuals that are required to have a strong knowledge of the ADIA project's timeline, requirements, scope, and progress.

- Coastr project representative
  - De Lima, Francis
- Coastr Customer Management team lead
  - Gupta, Arpit
- Project Manager
  - Taft, Luke
- Development Team
  - Hughes, Conor
  - Rossi, Benjamin
  - Sami, Mansour
  - Stankiewicz, Pawel
- Undiscovered relevant parties will be added as needed

3. Conclusion

In conclusion the ADIA project is calculated endeavour to improve the integration and satisfaction for Coastr customers looking to utilize their API. The project endeavours to create a customer-facing application that allows for access to appropriate API documentation as well as clear instructions on best practices for integration. In addition to providing clear instructions designed to aid in understanding and integrating with the API more efficiently, the project aims to visualize the functions of the API to further aid in that goal. Implemented correctly it is anticipated that this project will reduce the workload on Coastr technical support staff, freeing resources for use in other projects. The goal of the project is to enhance customer success in integration with Coastr's service.

Appendix 1: Deliverables Map

- Gather App Requirements
  - Research Current API
  - Research Compatible Libraries/Frameworks
  - Research Coastr Environment
  - Communications with client

- Research 3rd Party Solutions
  - Evaluate 3rd Party Solutions
  - SpectaQL

- Design Solution
  - Site Map
  - Documentation
  - API-List
  - Sandbox/Playground
  - User Authorization
  - Object Types Documentation

- Develop solution
  - React and Node.JS
  - Integration with Coastr Environment

Appendix 2: Follow-up Register

Type	Cause	Effect	Impact	Likelihood	Importance	Response Type	Response	Custodian
R	*Lack of Clear Communication*	Without clear communication and coordination among team members, tasks can overlap, leading to confusion and decreased productivity.	80	30	2	**Avoid**	Mitigate	PM
R	*Inconsistent Coding Standards*	Different coding styles can lead to difficulties in integrating work and maintaining a consistent codebase.	50	30	2	**Avoid**	Testing	CH,BR,PS,MS
R	*Difficulties using React*	React is a complex framework, team members may encounter technical difficulties while developing the web app.	30	80	2	**Avoid**	Training	CH,BR,PS,MS
R	*Missed Deadlines*	If team members don't prioritize the project or if unexpected events arise, deadlines may not be met, leading to delays and added stress.	80	20	1	**Avoid**	Prioritize	PM
R	*Version Control Conflicts*	When working on the same codebase conflicts can arise if versions do not match and changes are not properly managed.	60	10	3	**Avoid**	Mitigate	CH,BR,PS,MS
R	*Inadequate Documentation*	Without proper documentation it can be difficult for team members to understand the purpose of different parts of the code or how they should be modified.	80	30	2	**Avoid**	Mitigate	CH,BR,PS,MS

Note: The follow up register is a living document that will be updated as the project progresses. Additional columns denoting when issues are encountered and solved will be added as necessary.

Appendix 3: Record of Peer Review

Project Initiation peer review

Reviewer: Daniel van Dijke **Team:** 15

Reviewee: Luke Taft **Team:** 49

Date of review: 13/02/2023

1. Project description

Reviewer's comments and recommendations

The project brief (1.2) feels a little repetitive. Whilst the third paragraph does introduce the topics that will be covered in the project description effectively, I feel that the rest of this section could be condensed somewhat. For example, it starts out by stating the "goal" of the project and then ends by stating the "objective". This is effectively the same thing so merging these paragraphs may improve that section's structure.

Again, in Section 2.1 it feels like you've said a lot of the same as to what you've said in your project brief. Maybe consider restructuring these sections to avoid doing so.

For section 2.2, the first sentence seems unnecessary. Furthermore, you've stated that the production cycle is not conventional, without stating why. Consider explaining this because it doesn't appear to be unconventional to me. The duration section needs to be fleshed out. What is your final deadline? How many weeks do you have? Do you have a rough timeline of internal deadlines during those development weeks?

Section 2.3 leaves concerns about the requirements. Some of the requirements, such as the first must-have, leave a lot up to interpretation. Try and make these requirements more measurable and precise so the client knows exactly what, for example, operating systems your app will work on. Also, not sure if all the quality expectations listed are quality expectations or not.

The conclusion again repeats exactly the same as what has been said several times in the project brief and first section of project description. Do you really need a conclusion if this is the case?

Response and actions taken

- As there is no page limit it has been decided that some repetitiveness in the effort to emphasize critical points is an acceptable loss.
- The nature of the introduction is to introduce the major topics, therefore this point follows with the first, and no actions are to be taken
- Adjusted the statement about the production cycle to reference the restraints of working in a University context, without getting completely off topic to explain something that is ancillary to the project particulars. Added the final deadline but it does not seem necessary to count the weeks in the report. The number of weeks before that time is information available to anyone with a calendar. As a large portion of this project is research before developing a solution, creating a rough timeline during the initiation report is putting the cart before the horse.
- As the project is a web application that will most likely be node based it is planned to be platform independent. Naming specifics in the requirements detracts from the scope of what the project plans to accomplish and we have been advised against this by the client.
- Conclusions are included to repeat the information that is most important to retain.

2. Deliverables map

Reviewer's comments and recommendations

One of the map's main requirements is to highlight the Moscow priorities of the requirements listed, which this map does not do. Many of the "deliverables" listed such as "research current API" are not deliverables, rather they are work that is needed to develop the deliverables. Try to have the map focus largely on the deliverables instead. It's also unclear as to why the contents of 'gather app requirements' and 'develop solution' are duplicates, that feels unnecessary.

Response and actions taken

- "Each of the branches represents a specific task/activity that will require someone's attention, and which is time-limited - ie it has a clear end point after which it can be ticked off" is an excerpt from the example deliverables map. The current deliverables map reflects that process by having specific activities that feed into the main 4 deliverables for the client. The "gather app requirements" and "develop solution" sections are accidental duplicates and have been updated to reflect the appropriate content.

3. Follow-up register

Reviewer's comments and recommendations

Very good display of the follow-up register. However, it's clear that this is an extract that doesn't cover every category in the full register. So, explain in a figure caption why this is the case and maybe link to the full register here as well.

Response and actions taken

- Added brief explanation to Follow-up register stressing that this is a living document and some information that is not available at this time will be added when it becomes available. It contains the information that we currently have and that will change as that information changes.

4. Quality of document (clarity, presentation, etc.)

Reviewer's comments and recommendations

The formatting is done well, no point listing appendix 1, 2, 3, 4 in the table of contents though, maybe title those sections as to what they contain instead. I would recommend a figure caption for every figure explaining what it is, especially in the appendix, so it's clear to the reader as to why it's relevant.

There are also a lot of "corporate" statements in this report, statements that provide descriptions about terms that don't really need described, such as the introduction to the 'Stakeholders' section.

Response and actions taken

- Added appendix descriptions to the table of contents. Appendix descriptions are currently in the document. As this document is being written for and by people familiar with these terms, adding additional information seems extraneous at best.
- The nature of the report begs some "corporate" type statements. Changing these to sound less like industry professionals seems like a step in the wrong direction.

Appendix 4: Client Project Approval