Functional Design

PROJECT CLIENT ON BOARD

SAXION UNIVERSITY OF APPLIED SCIENCES

Date: 2022/11/24

Group: Brave Alligators

Authors:

Adrian Krantz – 524202

Darius Bejan - 516471

Georgs Jakubovskis - 517100

Hai Ha Pham - 493611

Tiffany Deng - 452428

Table of contents

[Introduction 2](#_Toc121095962)

[Requirements 3](#_Toc121095963)

[Functional 3](#_Toc121095964)

[Non-functional 3](#_Toc121095965)

[User stories (user requirements) 4](#_Toc121095966)

[Wireframes 5](#_Toc121095967)

[Login page 5](#_Toc121095968)

[Register page 6](#_Toc121095969)

[Customer CRUD page 6](#_Toc121095970)

[Company CRUD page 7](#_Toc121095971)

[Ticket CRUD page 7](#_Toc121095972)

[Converter CRUD page 8](#_Toc121095973)

[Log page 8](#_Toc121095974)

[Customer dashboard page 9](#_Toc121095975)

[9](#_Toc121095976)

[Navigation schema 10](#_Toc121095977)

# Introduction

As part of the course of “Client on Board” the group of authors were faced with a challenge of working in a 6 person team on a bigger project for a legitimate client “Profit Flow”. Profit Flow is an IT company offering smart solutions for specifically the solar panel market. The client has requested for the team of authors to design and engineer an application that is capable of performing an important function of monitoring the components of the solar panels called “converters”.

A converter is a device that regulates the electricity from a solar panel into a current that is allowed and accepted by home devices. With a faulty converter the solar panels cannot function properly, and if a fault occurs it is very difficult and time consuming to check if the converter functions properly or not.

The application will be used by 3 main user classes those being:

* Customer
* Company Admin
* Global Admin

To solve this problem the team used knowledge previously learned in past learning experiences such as REST API for fetching data from the web, and other frameworks used in web application development, as well as new concepts learned during the research phase.

The preferred development language was requested by the client to preferably to be “Typescript”. The team had no previous experience of working with typescript, and during the project research was also done to make sure the team members were competent in the usage of TypeScript. To make sure the project gets updated in a structured matter the team had agreed upon git etiquette which is a set of rules to be followed when making changes in ones local repository, this in return provided the team with the ability to make changes to the project without having such issues as merge conflicts.

This document involves a thorough analysis of the problem and it’s context and a validated solution.

# Requirements

## Functional

|  |  |  |
| --- | --- | --- |
| ID | Requirement | MoSCoW |
| F1 | A list of all customer’s converters must be displayed | M |
| F2 | Each converter shows the following details:   * + Status   + Device ID   + Description   + Expected throughput   + Company | M |
| F3 | All client-side input must be validated before sending it to the server | M |
| F4 | The server performs server-side validation | M |
| F5 | A CRON job is used to get status updates from converters | M |
| F6 |  |  |

## Non-functional

|  |  |  |
| --- | --- | --- |
| ID | Requirement | MoSCoW |
| NF1 | Frontend is built using Svelte | M |
| NF2 | Backend is built using Node.js and Express | M |
| NF3 | All response bodies must return valid JSON | M |
| NF4 | Frontend and backend provide descriptive error messages | M |
| NF5 | The user is automatically logged in after registration | M |
| NF6 | All endpoints have good and bad weather tests | M |
| NF7 | The API returns JSON along with an appropriate HTTP status code | M |
| NF8 | The REST API must use the following REST principles:   * + URL paths represent resources not actions   + HTTP requests are used as intended. GET requests never update a resource.   + Query parameters are used for querying and should limit results. | M |
| NF9 | The database uses PostgreSQL | M |
| NF10 | At least a single API connection is to be made to one of the supplied brands for converters | M |

## User stories (user requirements)

|  |  |  |
| --- | --- | --- |
| ID | Requirement | MoSCoW |
| US1 | As a company administrator, I want to be able to see the history of events in an installed converter, so I can keep track of a converter's data | M |
| US2 | As a customer, I want to be notified if my converter detects a failure so that I know if my solar panels are working | M |
| US3 | As a customer, I want to be able to see the history of events in an installed converter, so I can keep track of converter's data | M |
| US4 | As a customer, I want to be able to register with an email and a password so that I can use the application | M |
| US5 | As company administrator, I want to be able to create, remove, update, and delete the converters of a customer, so I can maintain the website | M |
| US6 | As a company administrator, I want to be able to create, remove, update, and delete the companies, so I can maintain the website | M |
| US7 | As a customer, I want to login to the application so that I can keep track of my converters | M |
| US8 | As a company administrator, I want to be able to register so that I can access the application | M |
| US9 | As customer, I want to be able to see the availability and status of the converters, so I can be sure the converters work properly | M |
| US10 | As a customer, I want to be able to register so that I can access the application. | M |
| US11 | As a global administrator, I want to be able to add, remove and modify company administrators so that I can maintain the application | M |
| US12 | As a global administrator, I want to login to the application so that I can maintain the application | M |
| US13 | As a company administrator, I want to login to the application so that I can keep track of my clients | M |
| US14 | As a global administrator, I want to be able to do what company administrator and the customer can do, so I can maintain the system | M |
| US15 | As a global administrator, I want to be able to do what company administrator and the customer can do, so I can maintain the system | M |
| US16 | As a company administrator, I want the application to be able to communicate with different supplier's converters so that our customers can track their converters | M |
| US17 | As a company administrator, I want to see the expected throughout put per converter, so I can make sure that the expectations are met | M |
| US18 | As a customer, I want to see the expected throughout put per converter, so I can make sure that the expectations are met | M |
| US19 | As company administrator, I want to be able to create, remove, update, and delete the tickets of a converter, so I can maintain the website | M |
| US20 | As a company administrator, I want to be able to add, remove and modify customers so that I can maintain all my customers on the application | M |

# Wireframes

## Login page

Graphical user interface

Description automatically generated

## Register page

Graphical user interface

Description automatically generated

## Customer CRUD page

Table

Description automatically generated

## Company CRUD page

Graphical user interface, table

Description automatically generated with medium confidence

## Ticket CRUD page

Table

Description automatically generated

## Table Description automatically generatedConverter CRUD page

## Graphical user interface, table Description automatically generated with medium confidenceLog page

## Customer dashboard page

## Graphical user interface Description automatically generated

# Navigation schema

