

|  |
| --- |
| **Riga Technical University**  **Riga Business School**  **Technical Specification Document**  **ProView Bauska** |

**DOCUMENT VERSION 1.0**

**25.10.2019.**

**AUTHORS**

|  |  |  |
| --- | --- | --- |
| **Name** | **Role** | **Department** |
| Vladislavs Jerins | Team Leader | Software Team |
| Jēkabs Solovjovs | Project Leader | Software Team |

**DOCUMENT HISTORY**

|  |  |  |
| --- | --- | --- |
| **Date** | **Version** | **Document Revision Description** |
| 25.10.2019. | 1.0 | Fist version of the document |
| 07.11.2019. | 1.1 | Minor improvements based on instructor’s feedback |
|  |  |  |
|  |  |  |
|  |  |  |

**Table of Contents**

Contents

[1. Introduction 4](#_Toc22936187)

[1.1 Purpose of the document 4](#_Toc22936188)

[1.2 Project Scope 4](#_Toc22936189)

[1.3 Related documents 4](#_Toc22936190)

[1.4 Risks and Assumptions 4](#_Toc22936191)

[2. System/ Solution Overview 5](#_Toc22936192)

[2.1. System Dependencies 5](#_Toc22936193)

[3. Technical implementation 5](#_Toc22936194)

[3.1. Web Resource 5](#_Toc22936195)

[3.2. Web Hosting and Domain 5](#_Toc22936196)

[3.3. Languages/ systems 5](#_Toc22936197)

[3.3.1. PHP 5](#_Toc22936198)

[3.3.2. MySQL 6](#_Toc22936199)

[3.3.3. JS 6](#_Toc22936200)

[3.3.4. HTML 6](#_Toc22936201)

[3.3.5. CSS 6](#_Toc22936202)

[3.4. Users 6](#_Toc22936203)

[3.5. Input of Data 6](#_Toc22936204)

[3.6. Filters 7](#_Toc22936205)

[3.7. Output of Data 7](#_Toc22936206)

[3.7.1. All project representation 7](#_Toc22936207)

[3.7.2. Specific Project Representation (About) 7](#_Toc22936208)

[3.7.3. Specific Project Representation (Status) 7](#_Toc22936209)

[3.8. System Configurations 7](#_Toc22936210)

# Introduction

This document will address the issue of Bauska municipality. The municipality faces the problem of insufficient project and information flow. Municipality members see this issue as an inconvenient representation of projects on Bauska’s website. This document will describe ProView Bauska solution’s technical design.

## Purpose of the document

The Technical Specification Document is a document that defines the requirements for a project. A specification will provide the information on technical design, development and procedures related to the requirement outlines. This document is created based on the request of First Year Seminar course instructors and provides traceability on the technical specifications back to the business requirements. Included in this document will be the detailed technical requirements including.

## Project Scope

Current solution will mainly affect the municipality’s project representation and project flow. Citizens of Bauska will have an opportunity to use our solutions; however, the main purpose is to satisfy the needs of the municipality.

### Related documents

|  |  |  |
| --- | --- | --- |
| **Component** | **Name** | **Link to the document** |
| Functional Design | ProView Bauska\_Functional Specification Document | <https://drive.google.com/file/d/1vzcZoilKpJXlk8hdeUrGVmUOuEx9pOCt/view?usp=sharing> |

## **Risks and Assumptions**

● Team has a risk of failure in trying to satisfy the needs of the municipality. The main issue is to come up with improvements for the current system without the understanding of specific functions that make it uncomfortable to use.

● The risk is to fail in trying to find the best solution for data representation (charts, diagrams, etc.).

● There is a risk that our solution will not fit in the existing Bauska’s website because of technical differences.

● There is a risk that the solution will not be used because the new website might be developed in the closest future.

● The team assumes no responsibility for any risks or issues that are outside the team's technical knowledge or outside the control of the team.

# System/ Solution Overview

Project management system for Bauska municipality to easily access and process projects more efficiently. Includes accessing current and archived project information, deadlines, statistics and statuses. Solution aims to improve the municipality's project flow and potentially save time and money by ease of use.

### System Dependencies

Our solution will be implemented in existing Bauska’s website or new Bauska’s website, which is expected to be developed in the next year. Therefore, the solution must eventually follow prewritten technical rules of the new Bauska’s website to fully satisfy municipality’s wishes and function properly.

Our solution depends on the right to publicize it on the existing website. If it is not allowed by the municipality, our solution will be implemented as an independent website to show its functionality.

### Technical implementation

### Web Resource

As our solution will be mainly used by the municipality’s project manager during one’s working time, it will only be presented as a desktop solution. Moreover, Bauska’s website for this moment doesn’t has the best adaptivity. However, adaptivity will be considered as a necessary improvement in the future.

### Web Hosting and Domain

Our solution will be stored on free web hosing with free domain provided by the “InfinityFree” service. However, it is used only for presentation purposes. The main goal is to implement our solution on the existing Bauska’s website as a replacement for an existing section.

### Languages/ systems

### PHP

PHP is going to be the main programming language used for this project. Several reasons for usage of this language are following there is no need for compilation, it is faster than other scripting languages, it is open source language, which allows developers and municipality to reduce expenses for technical side. In addition, it is supported by multiple operating systems and it is design for dynamic web page development, which means that the page can be generated based on the parameters passed to it. Moreover, PHP can be used together with the HTML code, which also uses CSS, allowing to make the page not only functional but good looking. PHP also allows developers to use it to access database through web server. Due to time limitations, no frameworks will be used, MySQL queries will consist of “hand-crafted” statements.

### MySQL

Developers used open-source relational database management system to store the data entered manually by themselves and send there by the Project Manager from the municipality. It perfectly fits in our project because it is used on the web and Bauska’s issue that was given to the team during the First Year Seminar, in teams opinion, requires web-based solution. MySQL is considered as fast, reliable and handy for development purposes. It satisfies developers’ needs to store Bauska’s municipality’s data and can be used together with the PHP.

### JS

JavaScript is used to create interactive items together with the HTML and CSS. It is very powerful in combination with the HTML markup. It is especially handy to process forms and it was necessary for this project as project manager from the municipality will enter data through our website, which later will be recorded in our database. To represent pie-charts and horizontal diagrams on our website JS D3 will be used.

### HTML

Markup language used to structure content on the website. It is used to make fields from which the content will be taken through the PHP and stored in database. In addition, it is used to make elements, which with the usage of JS will be interactive. Developers used HTML to represent the text and basic information on the website.

### CSS

Developers used it to describe styles for the HTML structure and make the page good looking. Design is its main purpose.

* 1. **Users**

Pre-defined user by the developers will be able to edit, delete, and make new entries to the databases through our solution (without direct access to the actual MySQL database). User will be able to Log in to the account using password and login provided by the developers. Log in opportunity will be processed using PHP and user entries in the database. User can create a new project, which will lead to the new entries in the database using the PHP. In addition, user can edit existing projects, which will overwrite the existing project entries or delete project at all.

* 1. **Input of Data**

Pre-defined user will be able to access page to enter or edit the specific project entry. This page will include dropdown menus, which will be made using JS and other data entered by the user will be processed by the PHP and written as a new or edited entry in the database.

* 1. **Filters**

Pre-defined user will be able to add new options for filtering the results. Option choice will be pre-defined by the developers. Options chosen by user will be processed by the PHP and added to the existing filtering options.

* 1. **Output of Data**
     1. **All project representation**

Projects will be represented on the main page of “Projects” section. It is output from the MySQL database. By default, all projects will be presented; however, user can filter and sort them. Filtering will be achieved by comparing “check-box” values with the corresponding value in the database for each project entry. Option to check multiple “check-boxes” will be available. Sorting will be achieved by comparing either date or budget of the project that must be presented. “Check-box” checking will be implemented using JS. Visitor of the website will aslo be avilable to download more detailed report of the project by clicking the button, which links to the according file. Design of the page will be described using HTML with CSS. User will have an option to go to the specific project’s page to view detailed description.

* + 1. **Specific Project Representation (About)**

Page with detailed project representation will be presented using requests sent to the database looking for the ID of the specific project. The result will include all values from the databased, matched with the titles. The page will include a dropdown menu with option to view “Status” page mentioned in 3.4.3, which contains analytics of the specific project.

* + 1. **Specific Project Representation (Status)**

Project status page is going to present all the analytical information. Page with statuses will be presented using requests sent to the database looking for the ID of the specific project. When the specific database entry is found, JS D3 will be used to process the numbers to the pie-charts or horizontal diagrams. The page will include a dropdown menu with option to view “About” page mentioned in 3.4.2, which contains description of the specific project. This page will also contain information with update logs, which will be entered by the project manager and later taken from the database using PHP and represented in the according field.

* 1. **System Configurations**

Web server that supports languages and systems mentioned in 3.3.