

Bachelorarbeit

Schema-First Design of Forms in Web Apps: Integrating Angular, JsonForms and Spring Boot

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Abstract

Here comes the abstract of the thesis. It should be a short summary of the content of the thesis. It should contain at least 70 and at most 150 words. The font size should be 10pt. The left and right margins should be 1cm. The text in the abstract is written within the environment `\begin{abstract}` and `\end{abstract}`.

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1 Introduction

The length of the Bachelor thesis is between 12 and 30 pages (excluding appendix). After the title of the thesis, the author and a short abstract are given. Then the main part of the thesis begins. The Bachelor thesis has no title page and only an optional table of contents (between abstract and chapter 1).

2 Background

Before proposing and analyzing the new approach to form creation, it is important to understand the current state of form development both in the context of the project and in general.

2.1 Current Approach to Form Creation in Angular

As highlighted in Angular's own documentation[1]

3 Problem Statement and Objectives

3.1 Problem Statement

The current hands-on form development, while concrete and concise, is rigid and hard to adapt across projects. Due to the requirement of the ability to change the appearance of the forms for each project user, the current approach leads to many problems with the maintainability of the code.

Aside from the maintainability, the current approach also suffers from lots of redundancy in the code. Forms share many common elements, such as labels, input fields, and buttons, yet the current approach duplicates code rather than reusing components.

3.2 Objectives

With the problems clearly defined, the goal of this thesis is to analyze the feasibility of a new approach to form creation, one that successfully addresses the problems of the current approach. More specifically, the goals are:

- To analyze how much boilerplate and duplication exist in the current form creation approach.
- To design a schema-driven approach that unifies the form creation logic and supports custom appearance for each project.
- To implement a prototype of the new approach and evaluate developer productivity and maintainability.
- To recommend whether the new approach is feasible for production use and the best approaches for going forward.

References

- [1] Angular Team. *Forms in Angular*. Available online: <https://angular.dev/guide/forms> (Accessed on: 06/17/2025).