### University POLITEHNICA of Bucharest

Faculty of Automatic Control and Computers, Computer Science and Engineering Department





# BACHELOR THESIS

Dynamic Webform Builder

Scientific Adviser:

Ş.l. dr. ing. Răzvan Deaconescu

Author:

Flavius-Costin Tîrnăcop

 $Thank\ someone?$ 

Dedicated to someone?

### Abstract

Development time is an important topic today, with companies competing against each other in agile software development environments. By reducing the time needed to modify hard coded API URL's between successive deployments and by separating the front-end dependencies from the back-end companies can gain precious time and with that increase their income.

The project aims to provide a front-end application that is agnostic of the back-end structure, providing independence between the two platforms. The application will also be able to autogenerate generic UI components regardless of the data fetched from the API.

Keywords: Front-end, HATEOAS, REST, API, React, Django, python

# Contents

L	Intr	coduct		
	1.1	$\mathbf{Projec}$	ct Description	
		1.1.1	Project Scope	
		1.1.2	Project Objectives	
		1.1.3	Related Work	
		1.1.4	Demo listings	
		1.1.5	Tables	
2	Sta	te of t	he art	
	2.1	Back-	end Frameworks	
		2.1.1	Django	
		2.1.2	Tastypie	
	2.2	Fronte	end-end Frameworks	
		2.2.1	Bootstrap	
		2.2.2	React.js	

# List of Figures

1 1	D																		ก
1.1	Reporting Framework																		

# List of Tables

1.1 Generated reports - associated Makefile targets and scripts		- 3
---	--	-----

### Chapter 1

### Introduction

This is just a demo file. It should not be used as a sample for a thesis.

TODO:

Remove this line (this is a TODO)

### 1.1 Project Description

### 1.1.1 Project Scope

This thesis presents the  $\mathbf{MySuperProject}$ .

This is an example of a footnote <sup>1</sup>. You can see here a reference to Section 1.1.2.

Here we have defined the CS abbreviation, and the UPB abbreviation.

The main scope of this project is to qualify xLuna for use in critical systems.

Lorem ipsum dolor sit amet, consectetur adipiscing elit. Aenean aliquam lectus vel orci malesuada accumsan. Sed lacinia egestas tortor, eget tristiqu dolor congue sit amet. Curabitur ut nisl a nisi consequat mollis sit amet quis nisl. Vestibulum hendrerit velit at odio sodales pretium. Nam quis tortor sed ante varius sodales. Etiam lacus arcu, placerat sed laoreet a, facilisis sed nunc. Nam gravida fringilla ligula, eu congue lorem feugiat eu.

Lorem ipsum dolor sit amet, consectetur adipiscing elit. Aenean aliquam lectus vel orci malesuada accumsan. Sed lacinia egestas tortor, eget tristiqu dolor congue sit amet. Curabitur ut nisl a nisi consequat mollis sit amet quis nisl. Vestibulum hendrerit velit at odio sodales pretium. Nam quis tortor sed ante varius sodales. Etiam lacus arcu, placerat sed laoreet a, facilisis sed nunc. Nam gravida fringilla ligula, eu congue lorem feugiat eu.

#### 1.1.2 Project Objectives

We have now included Figure 1.1.

Lorem ipsum dolor sit amet, consectetur adipiscing elit. Aenean aliquam lectus vel orci malesuada accumsan. Sed lacinia egestas tortor, eget tristiqu dolor congue sit amet. Curabitur ut nisl a nisi consequat mollis sit amet quis nisl. Vestibulum hendrerit velit at odio sodales

 $<sup>^1</sup> www. google. com\\$ 

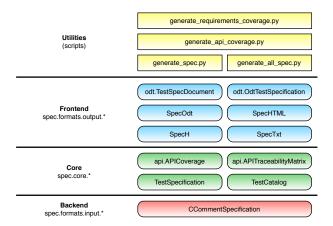


Figure 1.1: Reporting Framework

pretium. Nam quis tortor sed ante varius sodales. Etiam lacus arcu, placerat sed laoreet a, facilisis sed nunc. Nam gravida fringilla ligula, eu congue lorem feugiat eu.

We can also have citations like [1].

#### 1.1.3 Related Work

Lorem ipsum dolor sit amet, consectetur adipiscing elit. Aenean aliquam lectus vel orci malesuada accumsan. Sed lacinia egestas tortor, eget tristiqu dolor congue sit amet. Curabitur ut nisl a nisi consequat mollis sit amet quis nisl. Vestibulum hendrerit velit at odio sodales pretium. Nam quis tortor sed ante varius sodales. Etiam lacus arcu, placerat sed laoreet a, facilisis sed nunc. Nam gravida fringilla ligula, eu congue lorem feugiat eu.

Lorem ipsum dolor sit amet, consectetur adipiscing elit. Aenean aliquam lectus vel orci malesuada accumsan. Sed lacinia egestas tortor, eget tristiqu dolor congue sit amet. Curabitur ut nisl a nisi consequat mollis sit amet quis nisl. Vestibulum hendrerit velit at odio sodales pretium. Nam quis tortor sed ante varius sodales. Etiam lacus arcu, placerat sed laoreet a, facilisis sed nunc. Nam gravida fringilla ligula, eu congue lorem feugiat eu.

Lorem ipsum dolor sit amet, consectetur adipiscing elit. Aenean aliquam lectus vel orci malesuada accumsan. Sed lacinia egestas tortor, eget tristiqu dolor congue sit amet. Curabitur ut nisl a nisi consequat mollis sit amet quis nisl. Vestibulum hendrerit velit at odio sodales pretium. Nam quis tortor sed ante varius sodales. Etiam lacus arcu, placerat sed laoreet a, facilisis sed nunc. Nam gravida fringilla ligula, eu congue lorem feugiat eu.

We are now discussing the **Ultimate answer to all knowledge**. This line is particularly important it also adds an index entry for *Ultimate answer to all knowledge*.

### 1.1.4 Demo listings

We can also include listings like the following:

```
CSRCS = app.c
```

Listing 1.1: Application Makefile

<sup>2</sup> SRC DIR =..

<sup>3</sup> include \$(SRC\_DIR)/config/application.cfg

Listings can also be referenced. References don't have to include chapter/table/figure numbers... so we can have hyperlinks like this.

### 1.1.5 Tables

We can also have tables... like Table 1.1.

Table 1.1: Generated reports - associated Makefile targets and scripts  $\,$ 

Generated report	Makefile target	$\mathbf{Script}$
Full Test Specification	$\operatorname{full\_spec}$	generate_all_spec.py
Test Report	$\operatorname{test}\_\operatorname{report}$	${\tt generate\_report.py}$
Requirements Coverage	$requirements\_coverage$	generate_requirements_coverage.py
API Coverage	api coverage	generate api coverage.py

### Chapter 2

### State of the art

This is just a demo file. It should not be used as a sample for a thesis.

### 2.1 Back-end Frameworks

#### 2.1.1 Django

Lorem ipsum dolor sit amet, consectetur adipiscing elit. Aenean aliquam lectus vel orci malesuada accumsan. Sed lacinia egestas tortor, eget tristiqu dolor congue sit amet. Curabitur ut nisl a nisi consequat mollis sit amet quis nisl. Vestibulum hendrerit velit at odio sodales pretium. Nam quis tortor sed ante varius sodales. Etiam lacus arcu, placerat sed laoreet a, facilisis sed nunc. Nam gravida fringilla ligula, eu congue lorem feugiat eu.

#### 2.1.2 Tastypie

#### API

Lorem ipsum dolor sit amet, consectetur adipiscing elit. Aenean aliquam lectus vel orci malesuada accumsan. Sed lacinia egestas tortor, eget tristiqu dolor congue sit amet. Curabitur ut nisl a nisi consequat mollis sit amet quis nisl. Vestibulum hendrerit velit at odio sodales pretium. Nam quis tortor sed ante varius sodales. Etiam lacus arcu, placerat sed laoreet a, facilisis sed nunc. Nam gravida fringilla ligula, eu congue lorem feugiat eu.

### Schema

Lorem ipsum dolor sit amet, consectetur adipiscing elit. Aenean aliquam lectus vel orci malesuada accumsan. Sed lacinia egestas tortor, eget tristiqu dolor congue sit amet. Curabitur ut nisl a nisi consequat mollis sit amet quis nisl. Vestibulum hendrerit velit at odio sodales pretium. Nam quis tortor sed ante varius sodales. Etiam lacus arcu, placerat sed laoreet a, facilisis sed nunc. Nam gravida fringilla ligula, eu congue lorem feugiat eu.

### 2.2 Frontend-end Frameworks

### 2.2.1 Bootstrap

Lorem ipsum dolor sit amet, consectetur adipiscing elit. Aenean aliquam lectus vel orci malesuada accumsan. Sed lacinia egestas tortor, eget tristiqu dolor congue sit amet. Curabitur ut nisl a nisi consequat mollis sit amet quis nisl. Vestibulum hendrerit velit at odio sodales pretium. Nam quis tortor sed ante varius sodales. Etiam lacus arcu, placerat sed laoreet a, facilisis sed nunc. Nam gravida fringilla ligula, eu congue lorem feugiat eu.

### 2.2.2 React.js

Lorem ipsum dolor sit amet, consectetur adipiscing elit. Aenean aliquam lectus vel orci malesuada accumsan. Sed lacinia egestas tortor, eget tristiqu dolor congue sit amet. Curabitur ut nisl a nisi consequat mollis sit amet quis nisl. Vestibulum hendrerit velit at odio sodales pretium. Nam quis tortor sed ante varius sodales. Etiam lacus arcu, placerat sed laoreet a, facilisis sed nunc. Nam gravida fringilla ligula, eu congue lorem feugiat eu.

### Appendix A

# Project Build System Makefiles

### A.1 Makefile.test

```
# Makefile containing targets specific to testing
3 TEST_CASE_SPEC_FILE=full_test_spec.odt
4 API_COVERAGE_FILE=api_coverage.csv
5 REQUIREMENTS_COVERAGE_FILE=requirements_coverage.csv
  TEST_REPORT_FILE=test_report.odt
8
   # Test Case Specification targets
9
10
   .PHONY: full_spec
11
  full_spec: $(TEST_CASE_SPEC_FILE)
13
           @echo
           \verb§@echo "Generated_full_Test_Case\_Specification\_into\_\verb|\"\$^\""
14
           @echo "Please_remove_manually_the_generated_file."
15
16
17
   .PHONY: $ (TEST_CASE_SPEC_FILE)
18
   $(TEST_CASE_SPEC_FILE):
19
           $(TEST_ROOT)/common/tools/generate_all_spec.py --format=odt
               -o $@ $(TEST_ROOT)/functional-tests $(TEST_ROOT)/
               performance-tests $(TEST_ROOT)/robustness-tests
20
21
22
```

Listing A.1: Testing Targets Makefile (Makefile.test)

# Bibliography

 $[1] \label{localization} International Organization for Standardization. Iso/iec 26300:2006 open document format. \\ http://std.dkuug.dk/keld/iso26300-odf/is26300/iso_iec_26300:2006_e.pdf, December 2006. \\$