# CJ1 Report

Andre Alves, Divyesh Joshi, Myungjun Kim

## Web App that Generates Electric Circuit LaTeX Code

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**Title of Project**

Web App that Generates Electric Circuit LaTeX Code

**Keywords**

Life, Universe, Everything

**Abstract**

Arthur Dents travel to a new future . . .

**Andre Alves, Divyesh Joshi, Myungjun Kim**

**Thema des Projekts**

Web-App, die LaTeX-Code für elektrische Schaltkreise generiert

**Stichworte**

Leben, Universum, Alles

**Kurzzusammenfassung**

Arthur Dents Reise in eine neue Zukunft . . .

# Contents

# 1 Introduction

As a CJ1 project, this team chose to build a webapp that would allow a user to draw a circuit graphically and use that circuit to obtain LaTeXcode to draw a circuit using the CiruiTikZ package. While the project was subject to a number of delays, a functional MVP was developed, and its source code is publicly available on GitHub. Instead of building the webapp from scratch, the team forked the *draw.io* software by JGraph Ltd [? ], which was renamed *diagrams.net* while working on this project. While starting from that source code was essentially necessary due to the scope of the project, this came with many of its own challenges.

## 1.1 Phases

This project execution was divided into three distinct phases:

1. **P**hase 1: Team created as of four.

2. **P**hase 2: Adopted Agile (Scrum) project management method with three-member team.

3. **P**hase 3: Replace Agile with Project Management Lite [? ].

### 1.1.1 Phase 1

This project began around October 2021 with a team of four students. During this phase, the team identified *draw.io* as a good starting point for the project so the team would not have to design a GUI from scratch.

### 1.1.2 Phase 2

After beginning the project, Frances Joy Poblete disenrolled from HAW to pursue a career in user experience design. Following her disenrollment, the team had to reevaluate the scope of the project and ensure it was still something that could be accomplished by three team members. Ultimately, the team decided this was still possible, and the remaining team members decided to adopt an Agile (Scrum) approach to project management. To accomplish this the team decided to use the industry standard software packages Jira [**?** ] and Confluence [**?** ], both from Atlassian.

Ultimately, delays stemming from Ms. Poblete's departure caused development to be delayed from Winter Semester 2021/22 to Summer Semester 2022. However, around the start of the semester, one of the team members had to take a semester off from the program and left Germany during that time. As a result, development during the semester was slow to accommodate that team member's needs.

### 1.1.3 Phase 3

Once full-time development of the project resumed in the weeks following the end of exams in summer semester 2022, the team quickly concluded Scrum [**?** ] (Agile) project management was not ideal for this project. Scrum is a great project management style that is very successful in industry software development. However, a central part of Scrum includes daily "stand-up" meetings to synchronize the team's efforts and discuss the previous days' accomplishments. Since the team was working asynchronously across two continents, this approach was rather untenable.

To replace Scrum, the team chose *Project Management Lite*, which was the required reading for IE5-Scientific and Project Work [**?** ]. As a result, the PMLite paperwork is included in this report, but the original Scrum Jira-based Kanban boards are not.

# 2 Structure of Webapp

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## 2.1 User Stories

There were two viable user stories for this project:

1. As a *researcher/student/educator/engineer*, I want to draw circuits for LATEXdocuments using a GUI so that I can draw the circuits more quickly than I can code them.

2. As a *researcher/student/educator/engineer*, I want to draw circuits for LATEXdocuments using a GUI so that I do not need to be a LATEX*expert* to draw circuits.

Since any person who is writing a LATEXdocument must have some level of coding knowledge, expecting users to slightly modify circuit code is a reasonable expectation. Therefore, the following user story was considered, but ultimately not included in the planning process:

- As a researcher/student/educator/engineer, I want to draw circuits for LATEXdocuments using a GUI so that I do not require any LATEXknowledge.

## 2.2 Other test

dssg

# 3 Editing Components

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## 3.1 User Stories

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## 3.2 Other test

dssg

# 4 Parser Structure and Next Steps

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## 4.1 User Stories

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Since any person who is writing a LaTeXdocument must have some level of coding knowledge, expecting users to slightly modify circuit code is a reasonable expectation. Therefore, the following user story was considered, but ultimately not included in the planning process:

- As a researcher/student/educator/engineer, I want to draw circuits for LaTeXdocuments using a GUI so that I do not require any LaTeXknowledge.

## 4.2 Other test

dssg

## Declaration

We declare that this CJ1 Project has been completed by ourselves independently without outside help and only the defined sources and study aids were used.

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