Graphical User Interface for a Safety Analysis Tool

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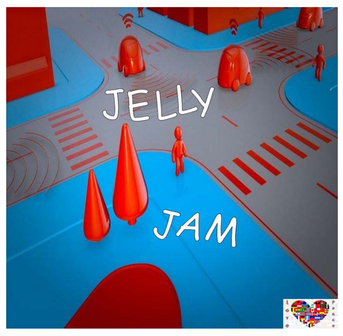


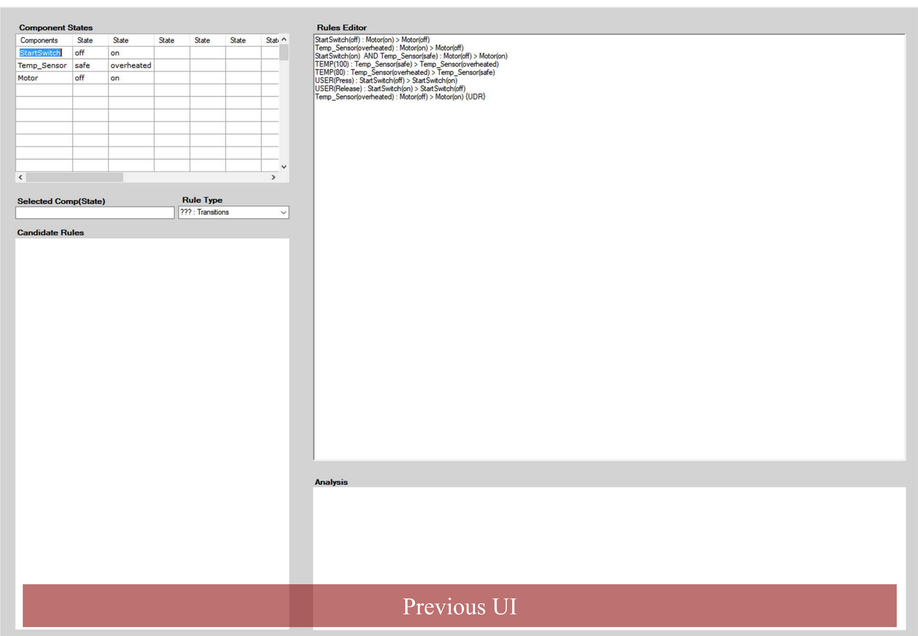
BACKGROUND

Safety Analysis Tool:
- Developed by Kaushik Madala and his team
- Developed to identify safety issues with autonomous devices

Graphical User Interface:
- Web-based user interface
- Created using Django web framework
- Connects the user with the tool

PURPOSE AND HYPOTHESIS

The motivation for this project is to create a GUI for a safety analysis tool. That matches the front-end to back-end in an aesthetic manner. We will be using this implementation to make the environment safer for humans in the presence of autonomous systems such as robots and self-driving cars. The client has implemented a safety analysis tool to identify safety issues with autonomous systems. Our client developed a safety analysis tool to identify overlooked safety issues. However, it is not currently usable for researchers and practitioners. In this project, we address the limitation of the tool by providing a web-based user interface to the safety analysis tool that allows researchers and practitioners to identify overlooked safety issues. We believe our project provides a means to analyze safety of the intended functionality (SOTIF).



MATERIALS AND METHODS

We have used multiple tools in creating our website and the most important was Django which is an open-source python framework for web development.

Django takes care of many aspects involved in the web development which made it easier for us to work and focus on the other components of our website.

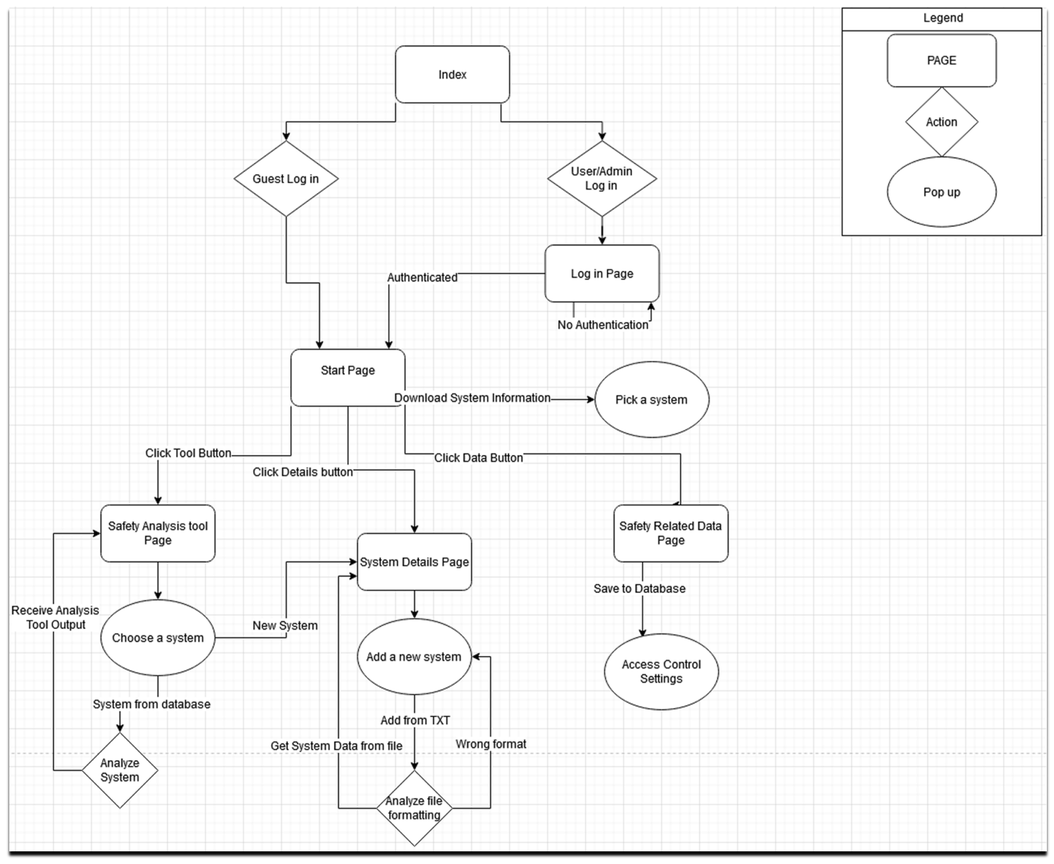
Both HTML and CSS helped make our website front-end looks more appealing, user-friendly, and easy to navigate.

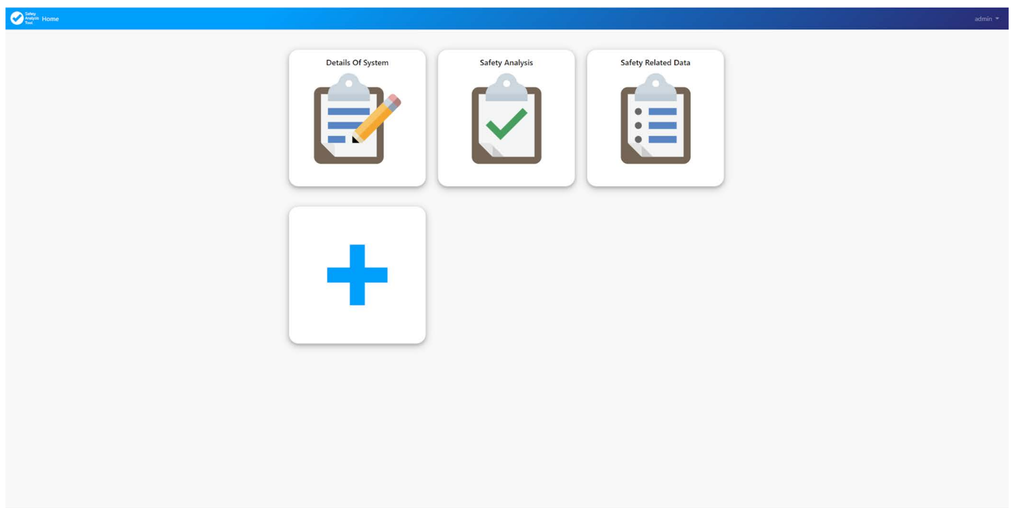
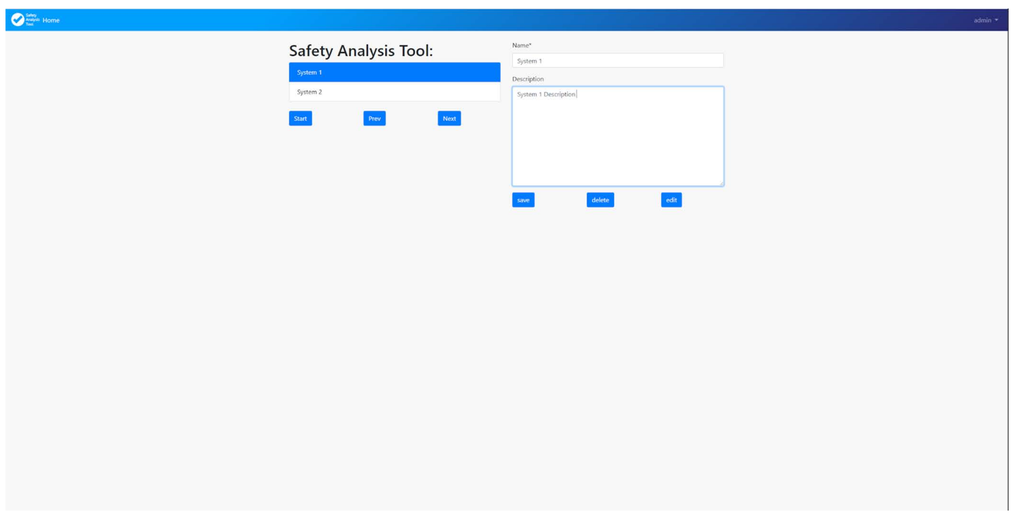
Tools:
- Django web framework
- Python
- Html
- CSS
- SQLite database

RESULTS

To access the website the user is required to have a computer with internet access and to have a modern browser such as Google Chrome. The user can register and login and more features from a guest login.

Also, we used Django default admin page for our website as it service the purpose of what we need to manage the website.



CONCLUSIONS

We are aiming to deliver the full potential of the safety analysis tool for the users in the most possible way. This website will give the users the ability to reach the safety analysis tool easily and to use its features by following few simple steps.