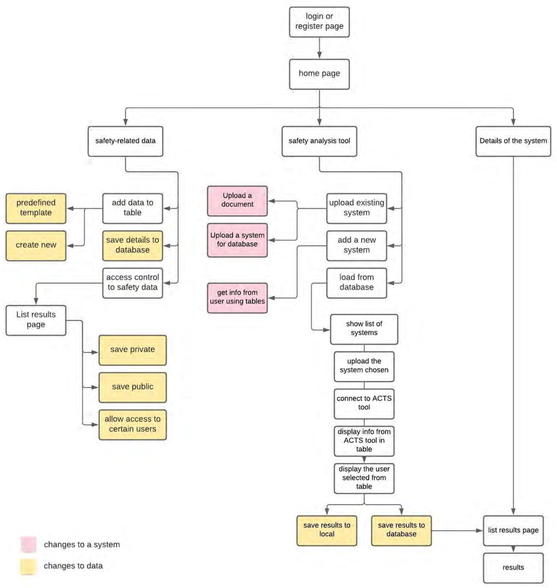
Safety Analysis Tool:
Autonomous Vehicle

SATAV

Project Overview

Our goal is to implement a helpful and easy-to-use web-based graphical user interface (GUI), which will incorporate the pre-existing ACTS tool. We do this with the intent of giving researchers and engineers ease of access to software that will not only make their work better but also people's lives safer. There has not been a website to implement this tool so that it can be used easily, and results saved and shared with others. Which is why we have decided to be part of making this website.

Website Design model



Design

You begin with the login page, which upon successful login takes you to the home page. From there, we have links in the topnav to the Safety Analysis Tool page, the Details of Systems page, and another for the Safety-Related Data page.

The Safety Analysis Tool page will let you add systems or load a system from the database, as well as connect to the actual ACTS tool and display results from the tool.

The Details of Systems page will let you see nice-looking information banners for the all of the results of the safety analysis that the user has stored to their account.

The Safety-Related Data page lets you add and remove data, as well as make changes to the existing data (and work with templates). Also allows you to change the visibility and access permissions of your results to other users.

Our website will make unpleasant text into easy to look at tables

Component Name	State1	State 2	...	State n
			....	
			...	

	Component Name	Property	Minimum value	Maximum value

Environmental entity name	State1	State 2	...	State n
			....	
			...	

	Environmental entity name	Property	Minimum value	Maximum value

Technologies

We are using the following to make the Safety Analysis Tool Website:

- Python
- Javascript
- HTML
- SQLite
- Flask
- Atom IDE

The Automated Combinatorial Testing for Software (ACTS) Tool is provided by NIST with the U.S. Department of Commerce

NIST National Institute of Standards and Technology U.S. Department of Commerce

Features

Authentication and Authorization:

1. Login In
2. Sign Up
3. Guest

Details of system page: This page will have the different results that a user has previously saved on the database.

Safety Analysis Tools:

1. Upload Existing System
2. Add a New System
3. Load From Database

Safety-Related Data:

1. Add Data to Table
2. Change Access Permissions
3. Save Details to a Database

Team Leftovers

Members: Duncan Campbell
Alex Daughters
Roshan Karki

Team Sponsor: Kaushik Madala

Affiliated with
University of North Texas

UNT

Testing

Mainly manual, due to the sensitivity of the material being provided. We run the app through a python script, and connect to our localhost web browser to access. From there, we are using dummy data to simulate with the ACTS tool integration through our SQL database.

Task Name	Start	Finish	Effort	Comments
Test Planning	3/18/21	3/20/21	2	Completed
Review Requirements documents	3/18/21	3/18/21	1	Completed
Create initial test estimates	3/18/21	3/18/21	2	Completed
Learn new test resources	3/19/21	3/20/21	6	Ongoing
First deploy to QA test environment	3/18/21	3/18/21	4	Completed
Functional testing – Sprint 1	3/20/21	3/21/21	4	Need to flesh out registration page
Iteration 2 deploy to QA test environment	3/31/21	4/1/21	6	To be completed
Functional testing – Sprint 2	4/2/21	4/4/21	8	To be completed
System testing	4/10/21	4/16/21	10	To be completed
Regression testing	4/10/21	4/16/21	10	To be completed
Usability Testing	4/10/21	4/18/21	12	To be completed
Resolution of final defects and final build testing	4/14/21	4/20/21	10	To be completed
Deploy to Staging environment	4/18/21	4/19/21	4	To be completed
Performance testing	4/20/21	4/22/21	8	To be completed
Release to Production	4/22/21	4/24/21	6	To be completed