

Department of
**COMPUTER SCIENCE
AND ENGINEERING**

Senior Design Day 2020



INFORMATION TECHNOLOGY

Open Source Generation

Team Members:

- Jeremiah Spears
- Ryan Haupers
- Aleck Blohowiak
- Benjamin Geiger

External Sponsors/Mentors:

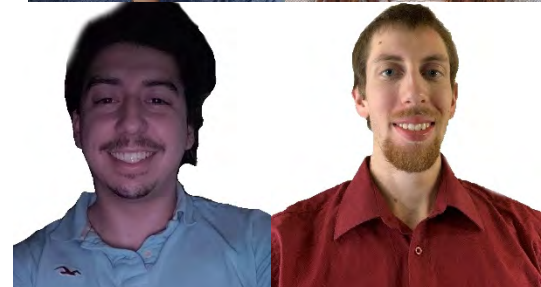
- Tom Agnew

Internal Sponsors/Mentors:

- David Keathly

Abstract:

This system is designed for web developers, allowing them to use dictionary items that act as a form of template to create web pages. As a whole, this system forms a sort of domain-specific-language that only requires the most basic information from the developer to better interpret their vision and form certain widgets based on minimal syntax. There are several templates that comprise the dictionary of resources a developer can use. These different widgets can interact with PostgreSQL database fields and with each other. The system primarily uses Ruby on Rails to form the necessary Javascript as well as Hasura and Apollo to form queries to the database and update the information displayed by the page and its widgets.



Discovery Park Virtual Tour / Up In The Cloud

Team Members:

- Utsav, Shrestha
- Blake, Kohl

External Sponsors/Mentors:

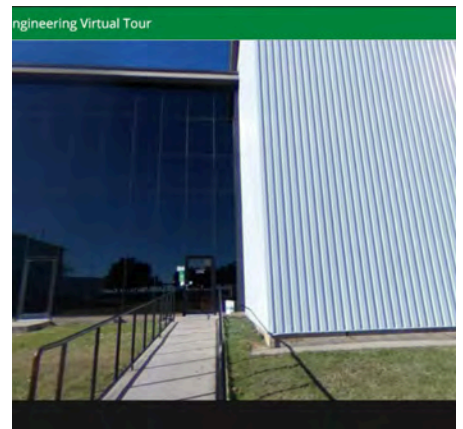
- Jim, Byford

Internal Sponsors/Mentors:

- Kayla, Green
- Xiaozhong Luo

Abstract:

The problem we are trying to solve is for those that can't attend or missed UNT Discovery Park in-person tours or people coming in from out of state or further away. This application helps them tour around UNT's famous Discovery Park at their own leisure whenever they want. This is innovative especially at a time like right now with the pandemic going on and the universities closing the campuses with only the essentials workers being able to go to campuses. This application can help the masses tour Discovery Park if this pandemic continues to go on in the future. Especially with everything moving to online and virtual classrooms, this application will be easy for users to use.



SRS Distribution Parcel Pickup Locker System



Team Members:



R. Cooper Snyder



Animesh Siwakoti



Ryan Heckmann



Colton Butler

External Sponsors/Mentors:

SRS Distribution:

- Patrick Garcia
- Pete Bachman

Internal Sponsors/Mentors:

University of North Texas:

- Professor David Keathly
- Alejandro Olvera

Abstract:

The purpose of this application is to allow SRS Distribution to securely store ordered items in lockers so customers can pick them up at anytime. The locker interfaces with an internal order and employee database to keep track of the orders stocked and notify customers their orders are stocked.

- Phase 1 includes building the software GUI with mock MySQL database interconnectivity, along with proof of concept lock/controller hardware.
- Phase 2 will include industrial grade lock/controller hardware with a secure physical locker and integration into production systems.

Homepage of GUI

Software:



Welcome to SRS!

Customer Entry
Employee Entry



Circles U Application

Team Members:

Pranjal Dhungana
Blake Becker

External Sponsors/Mentors:

Parker Wallace

Internal Sponsors/Mentors:

Keith

Abstract:

- The purpose of this project is to continue development on the CirclesU web application, a social application that is used to connect with people using geo-location, in order to deploy it within the next year. We are adding features to the app including “Sign in with Google”, separating circle data, fixing and creating customizable profile pages, and finalizing incognito mode features.



This project was interrupted by mandatory Expo SDK 34 upgrades. Development on the project requirements will continue immediately after these upgrades have been completed

Team Automate

Team Members:

- Caleb Agbey
- Victoria Brookes
- Loksubhash Pulivarthi

External Sponsors/Mentors:

- TD Ameritrade

Internal Sponsors/Mentors:

- Professor David Keathly

Abstract:

TD Ameritrade are a broker who offer an electronic trading platform for the trade of financial assets. Regulators such as the SEC send TD Ameritrade petitions for information via Electronic Blue Sheets (EBS). As required by law, TD Ameritrade are required by law to process the EBS requests accurately and within a specific time frame. Firms that do not fully comply with the rules and regulations that surround EBS can be issued substantial fines.

The current process that is used is heavily dependent on personal. Data is copied and pasted into a database query. The human interaction that is currently needed increases the risks of error that could result in heavy fines.

The purpose of this project was to create a fully functioning system that can handle EBS requests with little to no interaction by personal. The system will reduce the risk to the firm by improving the ability to accurately report trade data in a timely manner and increase the firm's competitive advantage by enhancing efficiency.



Victoria Brookes



Caleb Agbey



Loksubhash Pulivarthi

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- Ryan Haupers
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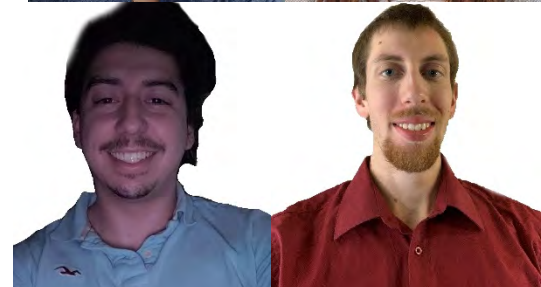
- Tom Agnew

Internal Sponsors/Mentors:

- David Keathly

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Laundris RFID Analytics Project

Team Members:

- Devin Johns
- Robert Stout
- Read Ballew
- Robert Martinez

External Sponsors/Mentors:

- Don Ward
- Jamar Beall

Internal Sponsors/Mentors:

- Professor David Keathly

Abstract:

Laundris came to UNT with a specific problem, that is proving the concept of scanning RFID tags in laundry and using that information to update a database to show pertinent and value creating information. We have taken that launchpad and created a web application to be used internally and as a proof of concept to connect an RFID scanning tool to a web application that updates a database.

This information, once properly displayed and connected can be used to forecast and create projections of future laundry needs. The algorithms behind the forecasting, projections, and data that is being displayed on the web application were created by a separate Computer Science Capstone Team that we worked in tandem with.

A system like this does not currently exist in the current market. Its value can be shown through the projections and inventory tracking capabilities. This system will save a large portion on time and effort that is already used in companies, making them more efficient.



Special acknowledgements to the CS Capstone Team (Chris Panko, Casey Kinnamon, Connor Crossland, Natalie Drewfs, and Zach Harte) for completing the difficult journey with us.



Flag Program Developed by Galactic Troopers

Team Members:

- Moubarak Akamou
- Kristopher Lonzie
- Nicholas Bert
- Felipe Palacios

External Sponsors/Mentors:

- Paul Manley

Internal Sponsors/Mentors:

- David Keathly

Abstract:

Our team is working together with Paul Manley who is over at the Grayson County Rotary Club/ Flag Program. The rotary club has a system where they charge members a fee and proceed to place American flags on certain holidays like Memorial Day and Veterans Day. The Client wants the site to make it easier for the club to know if one of their customers cancel their subscription or even started a subscription to opt in and make it easier to manage all the people associated with the flag program. We're creating a database and website, using html, CSS, php, and a virtual environment to test the website where accessing information is easy and secure and more up-to-date for not only this organization but for others that might find it helpful.



Acknowledgments: Alejandro Olvera

Water Well Application by Eagle Coders

Team Members:

- Adriatik Begaj
- Juliet Gacheru
- Brennen Johnson

External Sponsors/Mentors:

- Redi Clean – Don Teeters

Internal Sponsors/Mentors:

- David Keathly

Abstract:

Continental Technologies, Inc. has created a trifecta of water well products known as Redi Clean. Redi Clean allows for water well treatment in agricultural, industrial, municipal, and residential sectors by not only regaining the loss of volume but also increasing the life of the wells by reducing or eliminating iron bacteria buildup, corrosion, and mineral scaling. Currently, Continental Technologies, through Redi Clean, provides a recommendation on how to perform water well treatments. The recommendations are given based on the depth, size of casing, and static water level. Contractors usually rely on Continental Technologies to provide recommendations, and in some cases, this is after following wrong procedures for performing the treatment. A web application would streamline the process and remove confusion about the products and the procedures used. It would also help reduce the workload for Redi Clean during after-hours.



Translators : Ms. Pilar, Cynthia M. DuPont



Texas Veterans Association Website Framework

Team Members:

Pierson Beckman
Benjamin Cobb
Cameron Faubion
George Kavalaparambil

External Sponsors/Mentors:

- Gary Hardy
- Gary Steele

Internal Sponsors/Mentors:

- Dr. David Keathly

Abstract:

We are Team Atlas and we have been tasked with developing a framework to support the new Texas Veterans Association Website. These features range from being able to find specified veterans in the database to learn more about their story to furthering their Hall of Fame program by having users submit applications for veterans they know to be admitted into the program. Another key feature is the ability to search for and submit the locations of where fallen veterans are buried. This website will be built out after our completion of the program so that it can be ready for the public eyes.

