SJSU SAN JOSÉ STATE UNIVERSITY

Department of
Aviation and Technology

Technology Program
Senior Projects

May 12, 2023

Senior Project Profiles

Compiled by the Department of Aviation and Technology

San Jose State University

Spring 2023

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Enchanted Pets - Interactive Treat Dispenser and Toys

Project Scope and Objectives: The primary objective of this project is to develop a high-quality and innovative product that provides entertainment to pets while keeping pet owners connected with them. Our device is designed to be adaptable for both dogs and cats through the use of an add-on module. This feature will enable users to choose the entertainment option that best suits their pet's needs. We aim to deliver a product that is not only highly functional but also visually appealing and easy to use.

Project Results: Enchanted Pets is an innovative treat dispenser that doubles up as an interactive toy that keeps your pets entertained for hours. It has a modular design, with a base that includes a camera, and a dry treat dispenser. Additionally, depending on your pet's preferences, the device can be customized with various add-ons that provide different experiences; for instance, a laser pointer or a bubble dispenser. Enchanted Pets is a durable and lightweight device that measures with a square base that integrates easily with the modules. Enchanted Pets utilizes food-safe grade PVC materials, making it safe for your pets' interaction. The device operates via an Android application and has a range of features. It allows users to activate the treat dispenser, dispense bubbles or turn on the laser pointer. Enchanted Pets also comes with a secure latch or tight-fitting lid for the treat and bubble compartments, making the device safe and secure for pets. Enchanted Pets device is not just an automated dispenser but also a tool that allows pet owners to stay connected with their pets, providing peace of mind and enhancing the relationship between owners and their pets.

The completion of this project has provided an innovative solution that enhances the pet-owning experience by providing a tool that allows pet owners to engage their pets in a fun and interactive way while keeping them connected. In addition, the project demonstrated the potential for a modular design in product development, allowing users to tailor the product's features to their pets' unique needs and preferences. The successful completion of the project has demonstrated the team's ability to create an innovative product from ideation to the prototype stage and highlighted the potential for further development and commercialization.

Faculty Advisor: Vlad Ionescu

Student Team Members: Laura Weisbrich, Phuc Trinh, Diego Garcia, Cheng-Fang Ho

Contundito – IOT Can Crusher

Project Scope and Objectives:
- Build a crusher that allows consumers to crush non-CRV and CRV items
- A Bluetooth-connected application controls the features of Contundito.
- Calculates the prices and counts how many items are crushed, for each category (manually inputted).
- Contundito then sorts the crushed items into a bag for easy transportation

Project Results:
- Contundito is controlled through the Bluetooth-connected application so that non-CRV and CRV items as large as milk jugs can be crushed.
- Counts the number of items crushed for each category while calculating the price a user may get based on location
- The casing of the Condundito has been applied and the sorting mechanism works

Faculty Advisor: Professor Ionescu

Student Team Members:
Andrew Lawrence, Bao Nguyen, Joshua Bernal, Thienloc Ha
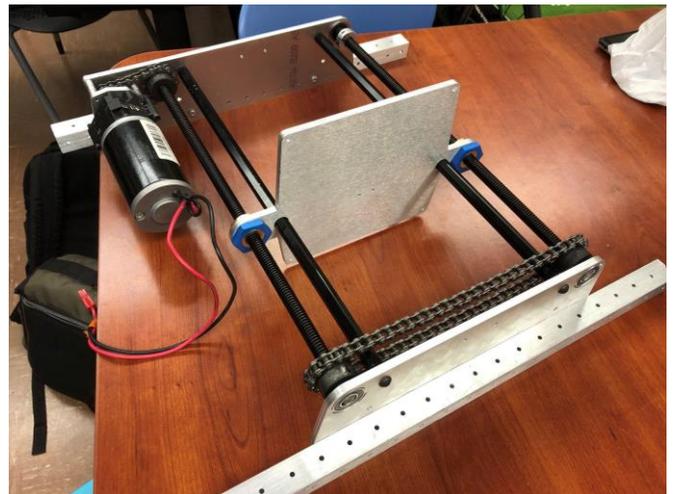
Project Scope and Objectives

The scope of this project is to create an IoT water dispenser and water level monitoring system within a bottle. The objective was to create a water dispenser that can be connected via Bluetooth through our app which allows users to store personal data and dispense water. We also wanted to be able to measure the water level within a user's bottle using a liquid tape sensor that can also be accessed through our app. This creation allows users to fill and monitor their water intake with ease.

Project Results:

Our team was able to create two well-functioning products that simultaneously ease day to day tasks without increasing their perceived complexity. The Intellispense countertop dispenser is a clean and simple solution for day-to-day home water consumption. Through its various settings that can be changed on the touch screen and compatible app, the user is able to dial in the features they want to use whether they are cooking, filling their bottle in the morning, or just topping off throughout the day. The functionality of the dispenser is elevated with the use of the Intellispense E-Lid. This lid fits on most commercially produced water bottles and adds a ton of features that work together with the app. Each lid comes with a level sensor that communicates with your app the current level of water that is remaining in your bottle. With this you can always see how much water you have consumed daily.

Faculty Advisor: Vlad Ionescu

Student Team Members: Mike Nguyen, Brad Raynes, Clayton Sawyer, Joshua Uy

Batch Bloc – LEGO Sorting Machine

Project Objective
The objective of this project was to build a system that would sort lego blocks by shape and color.

Several key specifications include:
- Connectivity: > 2.4 GHz Wifi
- Security: WPA2 for encryption of Wifi network that the *Batch Bloc* will be connecting to
- Usability: Legos filtered by general shape and color
- Size: around the size of a shop vacuum cleaner
- Weight: ≈ 25 lb

Key Features
- Lego Vacuum with dust filter to reduce dirt and germs
- Lego Sorter organizes legos by color
- Sorting criteria can be adjusted via bluetooth connected app
- Vacuumed Legos can be put into sorting mechanism

Project Results
- Colors ROYGBP, pink, white, black detectable by color sensor
- Functioning sorting system
- Successful vacuum system

What to Improve
- Bluetooth connectivity between color sensor and app (Wifi connection incompatible with SJSU Wifi security); can receive data and updates UI
- Complete assembly with wheels for the sorting assembly
- Changing bluetooth connectivity to 2.4 GHz Wifi

Faculty advisor: Professor Vlad Ionescu

Student team members: Darren Doe, Monireth In, Marcus Wong, Michelle Xu

Smart Medical Essential Dispensing System (S. MEDS)

Project Scope and Objectives: The primary scope for our project was to create a device that could assist those who are on prescribed medication and can occasionally forget to take that medication. We wanted to create a device that would store a certain amount of prescribed medication, and then dispense a set amount at a set time, for those who need to take a certain number of pills in the morning, and in the evening.

Project Results: The S. MEDS pill dispenser works with an Android app and communicates via Bluetooth. The app allows the user to assign pills to the eight pill chambers, add pills, and set a schedule to dispense pills. The dispenser organizes the schedule and tracks the time and day for the next pill dispense. When pills are ready to be taken, the device displays a green light and makes a loud noise, which disables when the user pushes a button and retrieves their medication. The pills are poured into the device from a single entry point, and the app is used to choose which chamber is to be filled.

Faculty Advisor: Professor Vlad Ionescu

Student Team Members: Andres Rincon, Lucas Bondy, Bradley Rechenmacher, and Gihan Hathurusingha Mudiyanselage

Title: Smart Medical Essential Dispensing System (S. MEDS)

Ultimate Smart Multi-Purpose Shelf

Project Scope and Objectives:

- Provide a convenient way for retail workers to track shelf inventory.
- Prevent items from being misplaced.
- Help alert user when someone is close to the lockbox.
- Utilize the lock mechanism for the lockbox.

Project Results:

- The app is able to sense the objects placed on the shelf through use of force sensors.
- LED lights up when motion is detected in front of the motion sensor.
- QR code sensor can read the QR code.
- The keypad lock works in securing the lockbox.

Faculty Advisor: Vlad Ionescu

Student Team Members:

Edward Chen, Chung Hin Leung,

Nay Thura, Anthony Ma
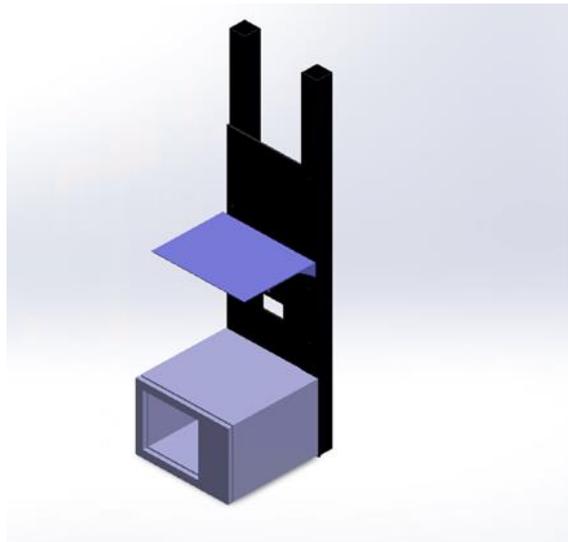
E-Cane

Project Scope and Objectives:
- The product can sense obstacles and notify users through voice feedback.
- The device has connectivity to the cloud through LTE.
- Accurate real time GPS location (within 1 foot).
- Notification system that alerts emergency contacts.
- Emergency notification through SOS button.
- Visible braille buttons.
- Ergonomic: light weight, friendly design.
- Product can attach to any cane with a diameter of 1 - 1.5 inches.

Project Results:
- GPS can provide location in real time.
- SOS implemented successfully as a push button notification system.
- IFTTT has been set up successfully for emergency contact alerts. Contacts can be alerted through text messages and emails. Users must press the SOS alert virtual button on the app.
- Obstacle detection is currently working properly, and users are alerted with voice feedback. PLA material instead of ABS.
- The product operates only with Wi-Fi connectivity.
- Needs to operate on a rechargeable battery pack.

Faculty Advisor: Prof. Vlad Ionescu

Student Team Members:
Abhay Narayan, Goutham Senthil, Ha Vu, Karen Gonzalez-Reynoso

ASSIST Pack – Portable Cooled Storage System

Project Scope and Objectives:

The scope of the project was to create an RFID based inventory tracking system on a portable cooled storage system. In addition to the main inventory tracking system, the scope of the project would also encompass a variety of other features that would be useful to the carrier:

- RFID Inventory Tracking System & Mobile Application
- Cooler with Temperature Tracking
- Backpack Frame For Modularity & Weight Distribution
- Battery & Solar Panels to power Electronics

The objective of this project was to create an advanced storage system that was portable enough to be carried by a single person into areas where there was no readily available infrastructure to store environmentally-sensitive supplies. With this objective in mind, the product was planned for mainly being used for medical purposes and alternatively for general everyday purposes.

Project Results:

With the progress we have currently, we have achieved the RFID system and the mobile application side. Though one major component of the app has not been "manifested" which was the inventory alarm. Regardless, the temperature regulation is also working as intended but not as powerful as expected in practicality. The backpack frame remains similar and will only be downsized by a few dimensions to adapt to the cooler's scaled down dimensions. As of now, electrical components are ready to be deployed once the printing is finalized and delivered to us by Spartan Superway.

Faculty Advisor: Vlad Ionescu

Student Team Members:
Ezekiel Licudine
Ryan Luong
Erin Asilo

Aluminum Soldering

Sponsor: Jabil INC. Faculty Advisor: Vlad Ionescu

Student Team Members: Aisha Tabraiz

Project Scope and Objectives:

Traditionally, printed circuit boards (PCB's) are manufactured using copper due to its desirable electrical and mechanical characteristics. However, over time the cost of copper has increased significantly, with a current value of almost 46% more than its cost at the beginning of this decade ($4.11 per lb vs. $2.80 per lb). Aluminum's current rate is $1.50 per lb bringing the cost down by 63% compared to copper. The trajectory cost of aluminum in 2030 is expected to be ~$1.65 (Lepcha & Drozdovica, 2022). Our team seeks to create/find a procedure or soldering product that will successfully solder PCB components to aluminum pads. The desired yield rate should be higher than 90%, the team would be able to use said product to manufacture on a larger scale PCBs using aluminum. The scope of our project was aluminum boards and any soldering products in the market (flux, paste, cleaner, etc.) Project Results: After executing the design of the experiment with different variables and variations of high temp solder paste, low temp solder paste, traditional SAC305 paste, cleaner, tinning paste, polishing, and hand soldering techniques; none of the variations or variables yielded a consistent result in solderability. The closest the team got to consistent results was hand soldering with high temperature solder paste and flux as well as applying cleaner immediately before soldering. This is because the soldering iron can reach up to a temperature of 310 degrees Fahrenheit and the preflow oven will only heat up the paste to about 280 degrees. Our main goal is to find consistent solderability with SMT, but we wanted to test all applications of solder paste before coming to a conclusion. The other products are extremely inconsistent as well and do not produce strong solder joints. Low temperature solder paste using the SMT process provided variations of results, most were inconsistent but had some success in functionality testing, same results for high temperature solder paste. The solder bonds were inspected using cross sectioning and determined to be uneven as well as inconsistent due to the nature of aluminums mechanical properties.

Sponsor: Jabil INC. Faculty Advisor: Vlad Ionescu Student Team Members: Aisha Tabraiz
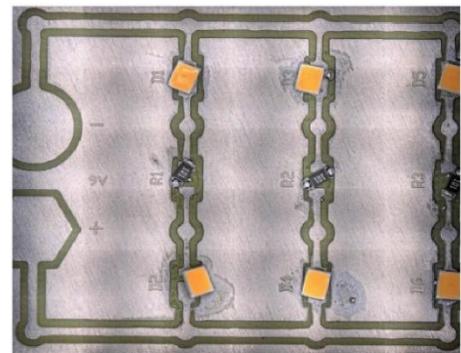
Board 24 (SMT, High Temp Sold.er Paste, Cleaner)

Slippy - The Search & Rescue Robot Snake

Student Team Members: Student Team Members: Tariq Hamadalla, Ritvik Mandyam Allen Jerome Torres Minh Nhat Phan Louis Nghi Berenice Harris

Faculty Advisor: Dr. David Yan

Project Scope and Objectives:
1. The scope for our team's project is to design and construct a device that can be utilized in a multitude of situations. From emergency rescue such as; search and rescue efforts in rubbles and collapsed structures, to construction, and even law enforcement/military use. Taking inspiration from snakes, our device can replicate the movements such as; slither, roll, crawl, wobble, etc.
2. Using a camera to look around its surroundings and locate objects, victims, casualties, and relay information for the user.
3. Using a Raspberry Pi to provide movement, such as slithering and turning.
4. Fully wireless motion, with easily exchangeable battery compartments.

Project Results:
1. Designed a CAD model of the snake using Solid Works.
2. Programmed to move in various directions.
3. Materials that were used are budget friendly.
4. Easily replicable and mass producible design.

Product Image:
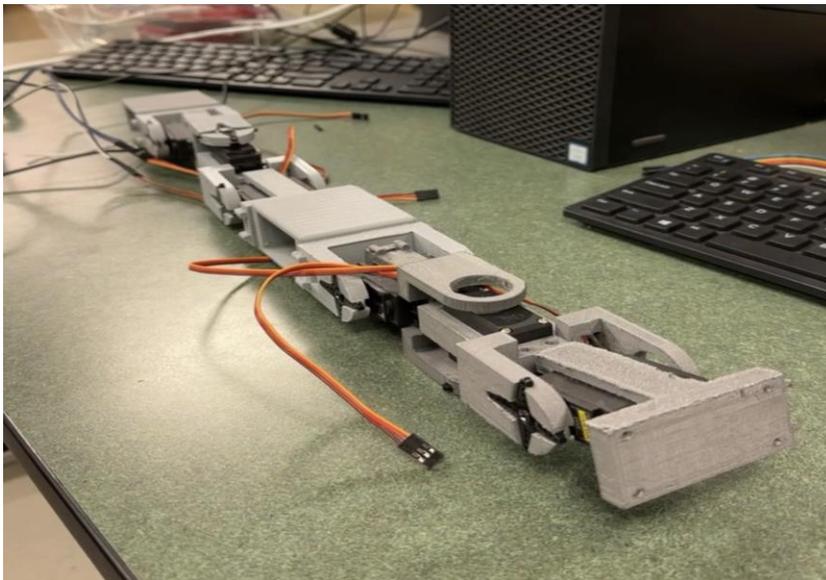
IOT Smart Sprinkling System

Students Team Members:
Evelyn Alvara Kevin Huynh
Daniel Mojarro Alarcon Matthew Pham Giovanni Debaz

Faculty Advisor: Dr. David Yan

Project Scope and Objective: (detail your project scope and objectives below)

Objective:
1. Design and build a smart irrigation system that will help measure and configure water usage.
2. The device will help us measure soil health and sun intensity to decide how much water is needed.

Scope:
1. Design Product
    a. Using Solidworks
2. Coding
    a. Temperature/Humidity Sensor
    b. Rain Sensor
    c. Moisture Sensor
    d. Light Sensor
3. Phone Application

Project Results:
● Implement an Arduino based system to automatically water your plants
    ○ Water activated depending on different conditions, for example, temperature, soil moisture and sunlight
● Create a phone app to view statistics coming from your Arduino
● Design new sprinkler CAD model and 3D printed it
● Interfaced electronic hardware with software using Arduino IDE
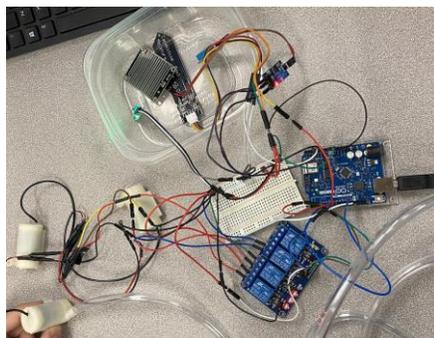
Product Image:

Project Title: M.O.E. (Machine of Elixir)

Student Team Members:
Claudia Navarro (Team Leader) Lucio Garcia Nick Yerena Kevin Cardona Miguel Morales-Suazo

Faculty Advisor: Dr. David Yan

Project Scope and Objectives: (detail your project scope and objectives below)

1. Design, program, and build an automated beverage dispenser to replicate the consistent measurement and combining of liquids like mixologists preparing beverages. Perform the process of using consistent measurements of liquids in mixed beverages to create an automated process that consistently yields the same beverage.

2. Provide SJSU students with a project that involves hands-on experience for students that will learn how to integrate electronics, software, and hardware, and to learn about fabrication processes.

3. Meet the following specifications:

   a.   X-axis and Z-axis coordinates for moving platform.

   b.   Total weight of machine is approximately between 40 lbs and 60 lbs.

   c.   Accommodate approximately 4 ½ Ft x 2 Ft space for item

Project Results: (detail your project results below)

1. Designed a CAD model of the beverage machine using Solid Works.
2. Fabricated machine frame, cup platform frame, and attachments.
3. Interfaced electronic hardware with software.

Product Images: (attach your product images)

ClasScan

Student Team Members: Jeremiah Botros (Team Leader), Camden
Pham, Jonathan Vargas, Conor Tope, & Eyobel Hailab
  Faculty Advisor: Dr. David Yan
  Project Scope and Objectives:

1. Efficient attendance tracking: The primary objective of the device is to automate the attendance tracking process, reducing the time and effort required by the teacher or administrative staff to record attendance manually.
2. Accurate attendance tracking: The device will use advanced scanning technology to ensure that attendance is recorded accurately, without any errors or omissions.
3. Streamlined record-keeping: By storing attendance information in a database, the device will provide a centralized and organized system for tracking attendance data.
4. Improved accountability: The device will provide greater accountability for both teachers and students, ensuring that students attend class regularly and teachers can monitor attendance patterns more closely.
5. Increased class time: With automated attendance tracking, teachers will have more time to focus on teaching and learning, rather than spending time taking attendance.
6. Improved student engagement: The device will encourage students to attend class regularly and participate actively, contributing to an improved learning experience.
7. Cost-effective solution: By automating attendance tracking, the device will reduce the time and labor costs associated with manual attendance tracking, providing a
cost-effective solution for schools and universities.
8. User-friendly interface: The device will be easy to use and operate, with a user-friendly interface that requires minimal training.

Project results:
1. Designed a CAD model of the vehicle simulator using Solid Works.
2. Interfaced electronic hardware with software.
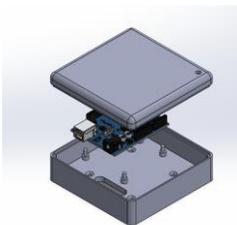
Project Title: Smart Parking with IT Infrastructure

Student Team Members:
Ismael Velasquez Artem Nazarov (Team Leader) Tony Ko Shuai Mu Leslie Liu Haidan Tang

Faculty Advisor: Dr. David Yan

Project Scope and Objectives:
1. Design and build a smart parking system that has a web application that can be accessed with a smartphone. Giving real time data on where there are free parking spots as well as gathering data on how often the parking lot gets used during what time period.
2. Designed as a solution to the incompetence of current smart parking systems. Giving real time information to users to avoid frustrating false information of empty parking spots and save time.
3. Giving us SJSU students a real world approach to IT integration to an everyday system, designing hardware and software of a product, and learning how to work as a team.
4. The following specifications of our project:
   a. Real time access to individual parking slot information and update as fast as 10 seconds.
   b. Can detect Vehicles as wide as 97 inches.

Project Results:
1. Designed a CAD model for the project using Solid Works.
2. Created the casing for the sensors as well as a diorama to visually show the project.
3. Developed a software webpage to gather data from sensors that can be accessed with a smartphone.

Product Images:
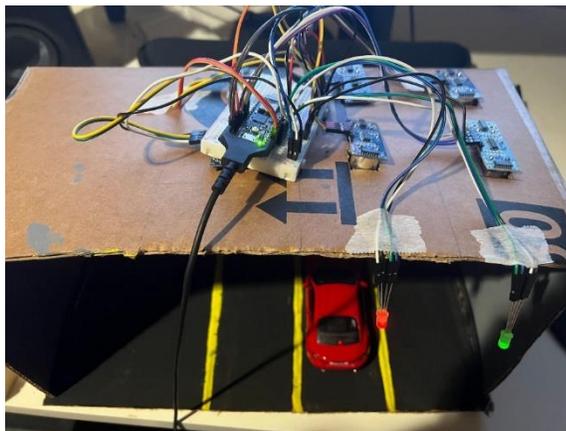
BevIFY

Student Team Members:

Waley Lau, Lara Hamdan, Matthew Tiangson

Faculty Advisor: Dr. Nik Tehrani

Project Scope and Objectives:

Our product is a portable stainless-steel water bottle composed of various advantageous features. The bottle comes with a specially made straw/lid combo that is easy to sip from, and supports activated carbon filters that are used to provide you with the freshest-tasting water. Built to filter and insulate your water, the straw is integrated with both an aluminum ice chamber and a carbon filter that purifies your cold water as you drink from it.

Our goal is to provide the world with refined ice-cold hydration wherever they are, eliminating plastic water bottles and tap water consumption one refill at a time. Our mission is to transform the conventional water-bottle experience, creating an all-in-one water bottle that delivers cold water you can enjoy anywhere and making clean hydration "cool".

Project Results:

With our 2 in 1 water bottle, obtaining constant cold and purified hydration has never been easier. You can drink clean and ice-cold water without using various products.
We make it so that there will no longer be any need for pre-freezing ice cubes, storing ice trays, or space-consuming water dispensers.

Our water bottle makes water taken from any source taste great and refreshing, reducing the taste and odor of contaminants that go unfiltered otherwise.

The bottle has a sleek, angular, and sophisticated design that provides a sense of modernity and simplicity.

Our design rivals many ordinary cylindrical water bottles on the market and will be available in various deluxe colorways, including:
-Metallic Rose Gold-Metallic Gold-Metallic Silver-Matte black
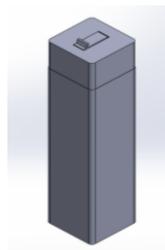
Bus Notification System

Student Team Member:
Vanessa Chau
Robert Savinski-Correa
Brad Bettencourt

Facility Advisor: Dr. Nik Tehrani

Project Scope and Objective

1. The device can be mounted on poles at bus stops.
2. Audibly inform people of the distance of the bus and arrival.
3. Accurately track the bus giving reliable information
4. Inconspicuous and aesthetically pleasing design

Project Results

The product that we created has sleek, aesthetically pleasing designs that allow it to be noticeable without being outright offensive. The product will be mounted on poles near bus stops for maximum efficiency, security, and visibility. BuNS can accurately track the bus using GPS and give an accurate readout of the distance of the bus. The product will also be able to audibly and visually inform waiting passengers of departure, arrival, and incoming buses, by announcing and flashing lights.

Air Quality Monitoring Device

Student Team Members:
Briann Solorio
Abraham Sanchez
Smit Suthar
David Chau

Faculty Advisor:
Dr. Nik Tehrani

Project Scope and Objectives:
The Air Quality Monitoring Device is an Arduino-based IoT device developed and designed to provide the user with measurements of air pollutants within the area. Air pollution in households and buildings can often be overlooked, yet it must be addressed as poor air quality can negatively effect on a person's health. Thus, the objective of the device is to provide users with direct insight into discrete, quantifiable measurements of the air quality of the measured area such that users can then take corrective action for the building. Utilizing an array of gas, particulate matter, temperature, and humidity sensors, the Arduino reads the data gathered and uploads it to a display, providing the user with information about their environment.

Project Results:
The Air Quality Monitoring Device can detect the different levels of air pollutants within a building environment and upload the measurements onto a display for visual feedback. The device is configured to detect the concentrations of carbon dioxide and carbon monoxide in parts-per-million (PPM), and concentrations of dust particles 2.5 microns in diameter. The concentration of air pollutants is displayed in PPM on the interactable touchscreen display, including readings on current temperature and humidity.
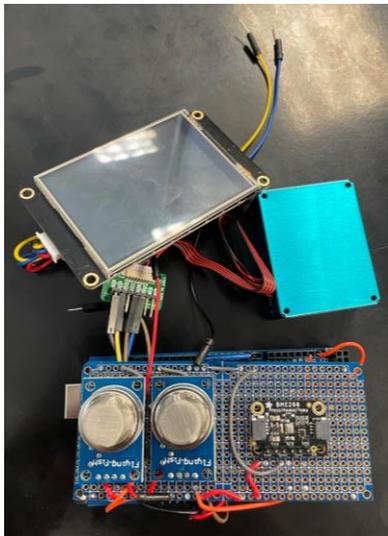
Pet Water Dispenser

Student Team Members:
Austin Benns
Loc Tang
Tamiris Alves

Faculty Advisor: Dr. Nik Tehrani

Project Scope and Objectives:

1. Create a water dispenser that can house 1.5 L of water.
2. Have a water dispenser that can be affordable to the public that has pets.
3. Get rid of single-water bowls.
4. Make life easier for pets and owners when it comes to water.

Project Results:
1. The Working circuit board and Arduino code.
2. Staying in budget.
3. Successfully assembling of final product prototype.

Protection Pets

Student Team Members: Roshan Kumar, Bhavin Lad, Vanessa Lee

Faculty Advisor: Dr. Nik Tehrani

Project Scope and Objectives:
This project aims to design a self-defense device by combining two different self-defense tools and disguising it as a stuffed animal keychain. The product is aimed to be easy to use for any individual to protect themselves from an attacker. If an individual feels that they are in danger, they can pull on the keychain, which will then set off the alarm. The head of the stuffed animal, which contains the safety alarm, detaches from the body. The body of the self-defense product has pepper spray, making it easy for the user to reach for it. The product is also made so that the alarm and pepper spray can effectively detach and attach. Continuing on, the product itself is disguised as a stuffed animal keychain, making it more visually appealing and tricking the attacker.

Project Results:
The product is yet to be completed as it is still in its prototype stage, but the alarm is functional. The focus now would be to make any alterations to the CAD design for the alarm to fit properly. The pepper spray was 3D printed successfully; however, the actual spray has not been made for safety reasons. If the group had more experience with CAD, the design would be cleaner.

Product Images:

Smart Condiment Dispenser

Student Team Member: Group 3

1. Anh Huynh

2. Kevin Reyes

3. Mohammed Elmi

Faculty Advisor: Dr. Nik Tehrani

Project Scope and Objectives:

- This automation allows the employees to skip the step of having to choose and count which condiments were ordered by the customer.
- Regarding the design aspect, our mission is to increase efficiency in the packing process by maintaining or decreasing the time from when a sauce packet is requested to when it is in the customer's hand.

Project Results:

The prototype that was created depicts the four sauce bays, which all have a small ledge allowing sauce packages to lay on before exiting the bay. It utilizes circuitry run by the Arduino IDE to run the servos. Lastly, we created a simple GUI using the Processing environment to create a POS interface. The structure successfully dispenses sauces according to the order on the POS.

New Leaf - An Automated Plant Watering Device

Student Team Members:
Tyler Leguidleguid
Paul Christian Reyes Mateo
Anthony Phung

Faculty Advisor:
Dr. Nik Tehrani

Project Scope and Objectives:

An automated plant watering system that involves sensors, Arduino, a smartphone, and a cloud system to send push notifications to a smartphone for plant needs. Sensors will determine the soil moisture level and be able to notify when the level gets too low. Then allows the user to take action from the push notification and tend to their plants. That includes when plants need to be watered or when the temperature gets too high.

Project Results:

1. Arduino code is successfully allowing our system to function by providing values from moisture sensors that will be placed within a plant. Then determine whether it is below a certain threshold or value number (set within the Arduino code). Once that threshold number is reached, our system will start to actuate the water pump that is connected to the system.
2. A push notification system was set up as well in our system. Once that threshold is reached, we set up the code to send a push notification to a user's device, notifying them of the need for their plants. Giving the user some information as to how much water the plant is taking and if any adjustments need to be made.
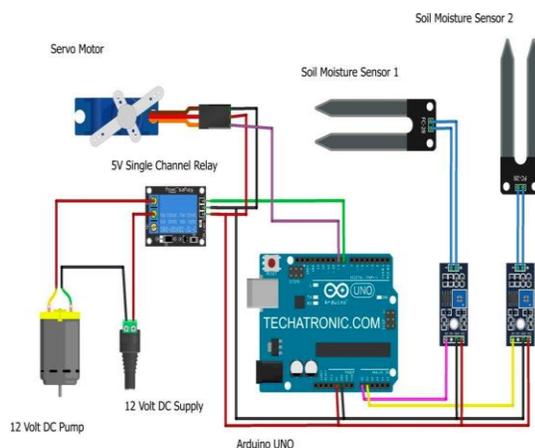
Automated Security Lockbox

Student Team Members:
Raymond Truong
Michael Takeshita
Aaron Tran

Faculty Advisor:
Dr. Nik Tehrani

Project Scope and Objectives

Our product is a delivery box intended for package deliveries and mail. Our project aims to combat and mitigate the issue of stolen packages and other instances of porch piracy. Additionally, we want the process of setting up and using our product to be simple for both the user and the delivery person. The box has a locking mechanism that locks and unlocks based on appointment time frames set by the user within an app. These appointments include a date, a start, and an end time. At these times, our app sends a signal to the Arduino controller within the box and can lock/unlock it remotely. The app manages all data and stores it within an SQLite database on the users' phones. The data is automatically sorted based on the earliest date and past dates are automatically deleted from the database. Additionally, upon delivering a package, a button within the box will detect that the box has been opened and then closed letting it know that something has been dropped off and that the box locks itself again. This prototype is built with wood (roughly 12'' x 12'' x 12'') and consists of an Arduino MKR Wifi 1010, a servo, a push button, and drawer slides. The app is programmed with Java in AndroidStudio for Android devices.

Project Results

Our app can correctly manage and store data and send signals out from the users' devices regardless of whether or not the app is actively open. However, due to the structure of Android architecture, unless we store data at an external server or within the cloud, any alarms set are wiped upon power down or reset of the phone. The alarms can be initiated simply by reopening the app again. The physical box works as intended and can receive signals from the app. However, our original plan included a stepper motor but that would require an additional external power source and a transformer so we decided a servo would be the better option.

WorkFindFund

Student Team Member: 4
Hiroyuki Ichikawa, Anthony Do, Gurjinder Dhami, Minh Le

Faculty Advisor: Dr. Nik Tehrani

Project Scope and Objectives:

- A "Project-based" platform that inspires and connects the world's brightest minds, employers, and investors.
- Provide opportunities for individual supporters, investors, and companies to fund or purchase projects, solely or collaboratively. Advertise finished projects. Advertise job positions.
- Connect successful projects with mentors & next level accelerators
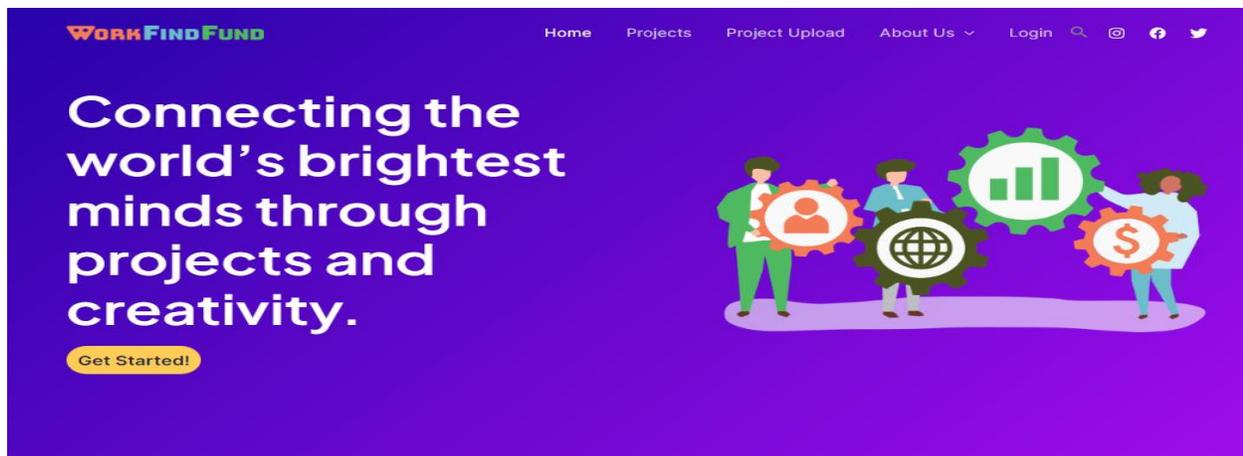
Project Results:

- This website was created with features such as allowing users to create an account and, once accepted, showcase their projects on the site.
- Our website allows users to join with their contact information, associate their accounts with their personalized LinkedIn URLs, and post their project details to be seen by other users. Additional features include giving and receiving project feedback and requesting to add other users as friends on the platform.

Keyboard Touchscreen Touchpad

Student Team Members:
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Project Scope and Objectives:
- To create a keyboard that utilizes a touchscreen to integrate and improve the functionality of a mouse.
- Design a 3D model for the case of our keyboard and touchscreen.
- Create and design a GUI for the number pad, application shortcut as well as trackpad functionality.

Project Results:
- Successfully designed and created a 3D model for the case of our keyboard using specifications and dimensions of open-source files and other third-party parts.
- Successfully wrote code using Arduino IDE 2.0 to utilize a touchscreen as a trackpad as well as a number pad and application shortcuts.
- Successfully 3D printed the case with ABS and assembled the keyboard to our specifications.

Contributors/Sponsors:

Product Image: