WORK SAMPLES

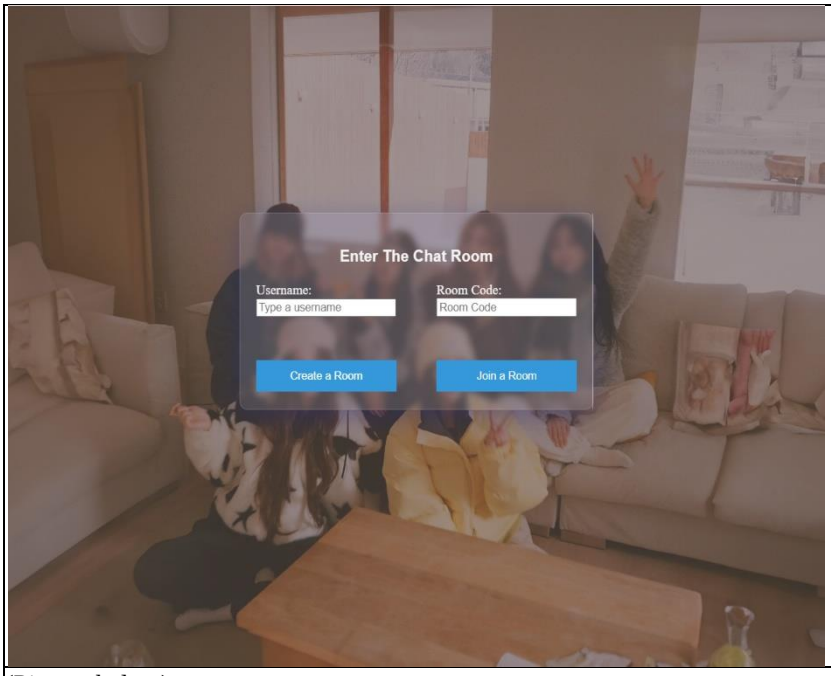
By Jeric Marcel L. Gappi,
Computer Engineering
LinkedIn GitHub Static Portfolio

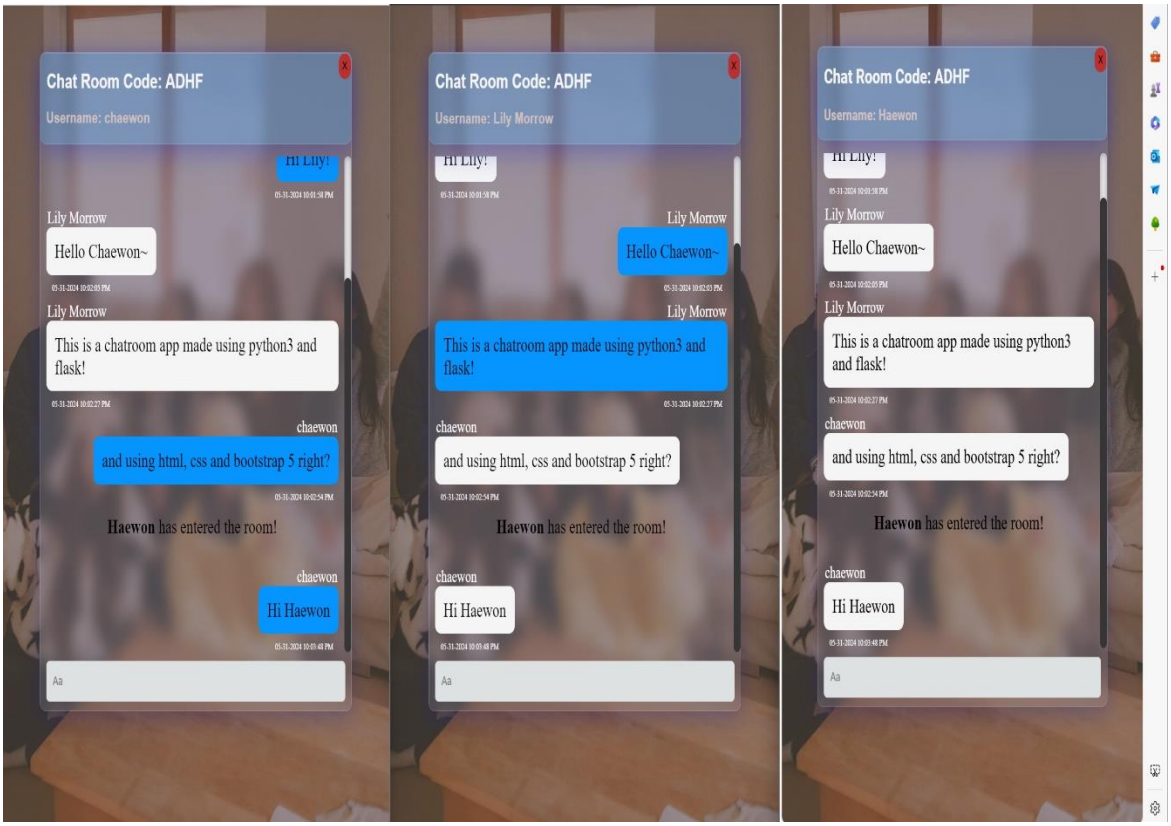
Web-based Chatroom using Flask

A web-based chatroom app developed using Python and Flask. This functions as a basic chatroom with username and room-code functionality. Users can chat, send emojis, re-join and leave the current room. It also includes server time, restrictions such as if the last user leaves the room, the room will be deleted and the room code will not be available. This was based on a Flask tutorial and was modified to improve learning including server time, web design, session and more.

Concepts utilized:

Python, Flask, SocketIO, HTML, CSS, Bootstrap 5

<table>
<tr><td> 
</td><td>Picture 1: Main menu</td></tr>
<tr><td>(Picture below)</td><td>Picture 2: Chat room session</td></tr>
</table>



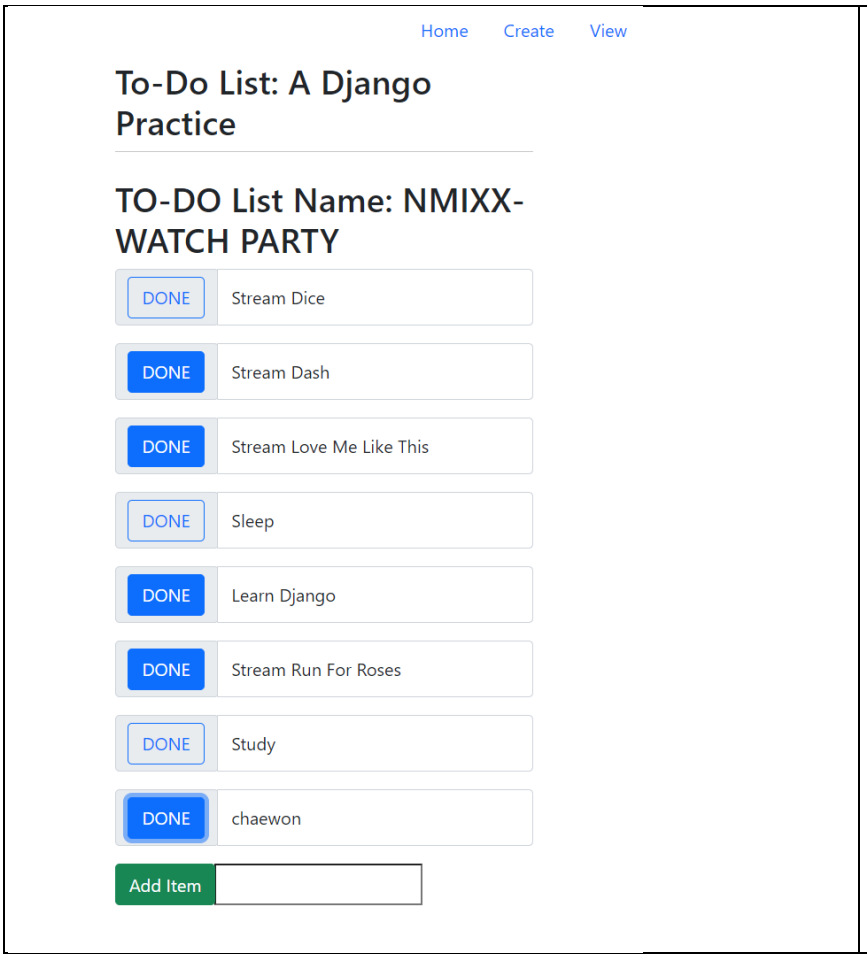
Picture 2: Chatroom with multiple users with messenger like theme.

Basic To-Do List using Django

An basic To-Do List application solely for the purpose of practicing Django Web Framework. It Includes Create New To-Do List, Mark Done, Add Item and so on..

Concepts utilized:

Python, Pandas, PyQt5, CSV, DictReader, PyInstaller



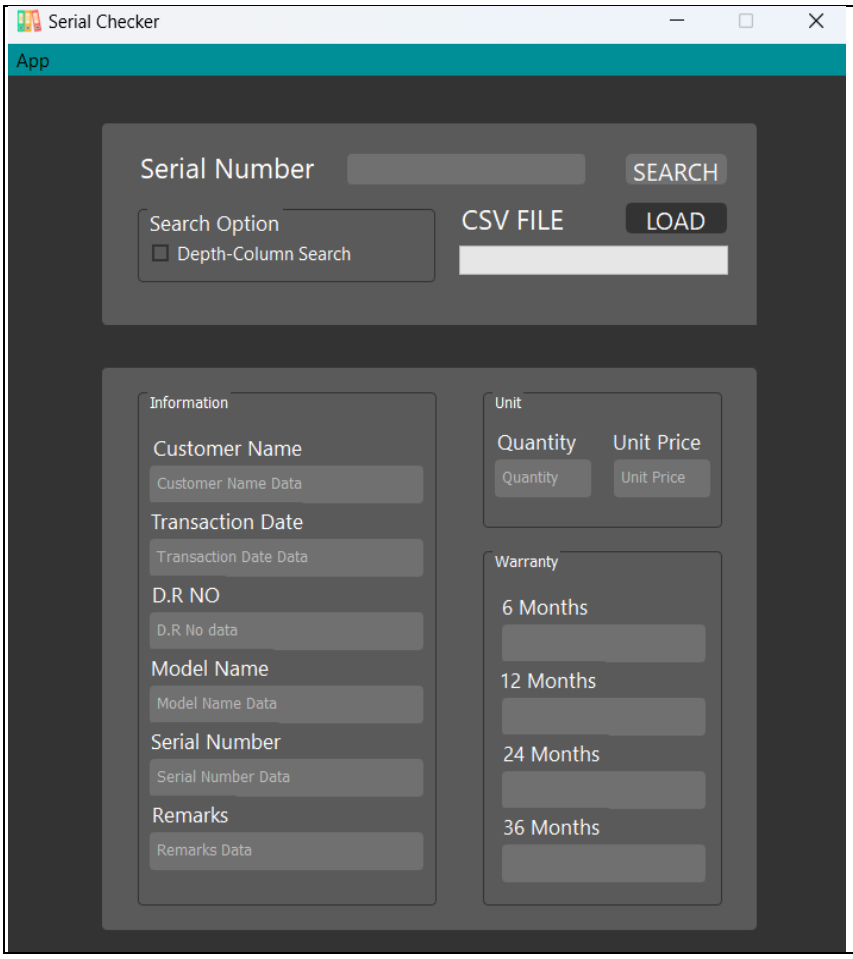
Picture 1: View To-Do List

RMA-specific CSV Serial Checker using Pandas

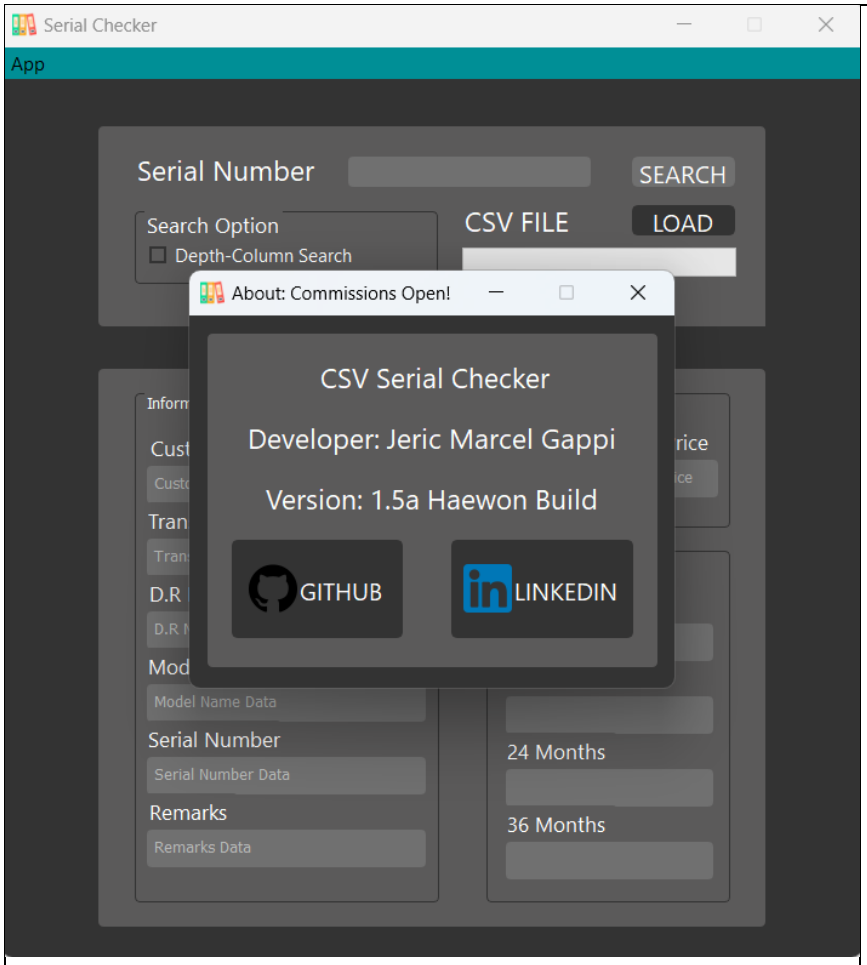
An application made during the Internship at Philteq Enterprise Incorporated. It was primarily used for looking up Million's worth of Transaction data in CSV File Format using Pandas. The app will search the Serial Number column and display the related data and compute for the warranty. The user has the freedom to use other queries such as D.R NO# or Model by checking Depth-Serial Search. For simplicity, the app was developed and built as an executable file using PyInstaller.

Concepts utilized:

Python, Pandas, PyQt5, CSV, DictReader, PyInstaller



Picture 1: Main



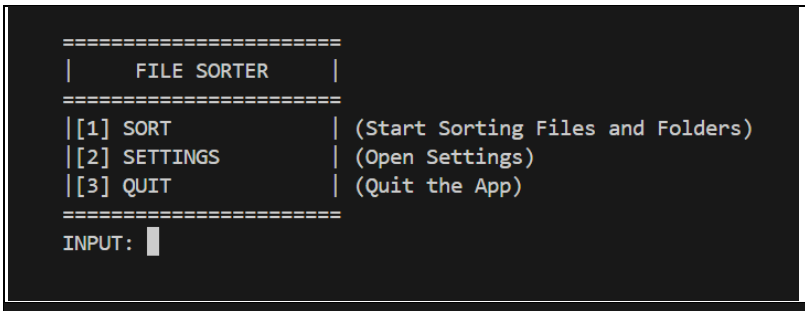
Picture 2: About Screen

File Sorter

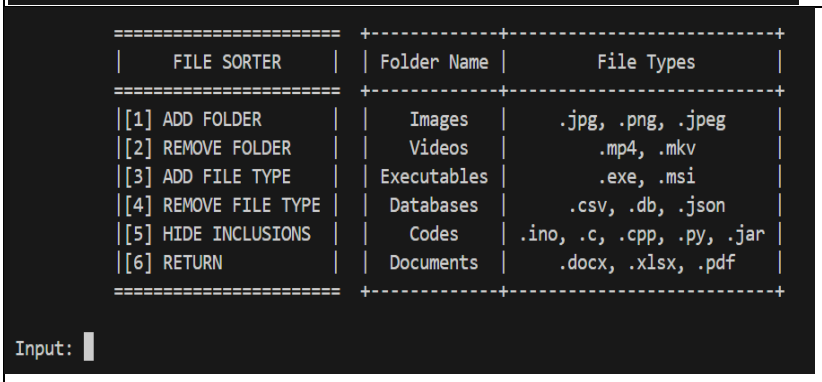
A final project requirement on Harvard's CS50P Final Project. This application utilizes shutil to move files to their respective folders depending on the user's settings. It uses SQLiteDict for storing the settings to a lightweight database and for practice, MongoDB was integrated to save the current settings online and will be fetch every start-up of the program. This was coded on CS50's VSCode and tested using PyTest.

Concepts utilized:

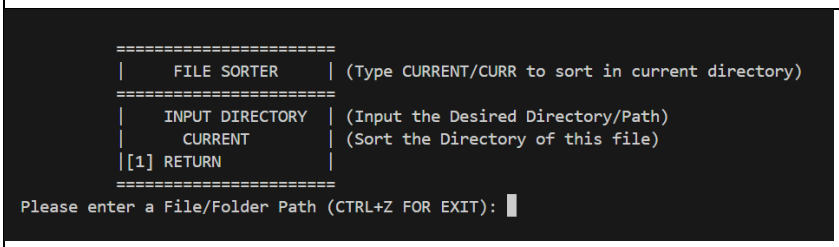
Python, Pandas, MongoDB (PyMongo, Mongo Atlas, Compass), SQLiteDict, Shutil, RegEx.



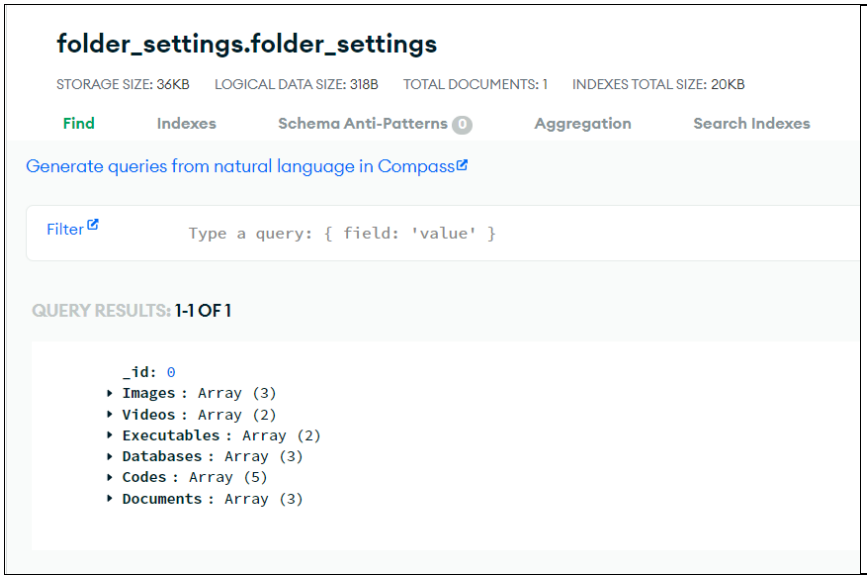
Picture 1: Title Screen



Picture 2: About Screen



Picture 3: Sorting



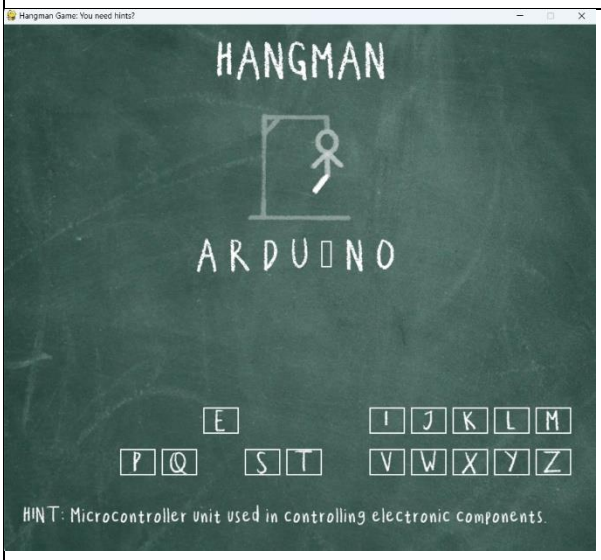
Picture 4: Mongo Atlas

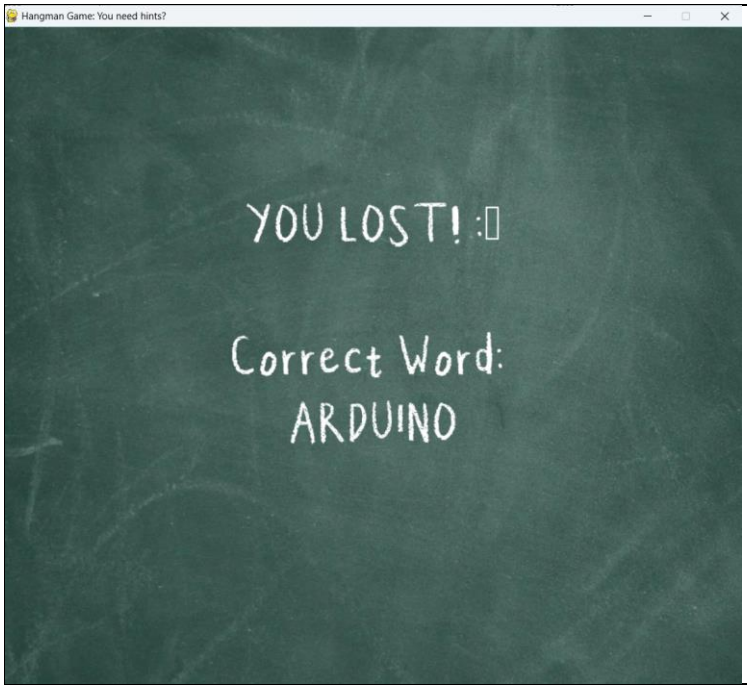
Hangman Game using PyGame

The renowned Hangman Game recreated for a commission. It follows the same concept as the original hangman game but in a blackboard style. It uses simple text file for adding/removing Words to guess with their respective text description for in-game hints. Built using PyInstaller to distribute the file seamlessly as executable file (.exe).

Concepts utilized:

Python, PyGame, File I/O, PyInstaller

	Picture 1: Title Screen
	Picture 2: In-Game

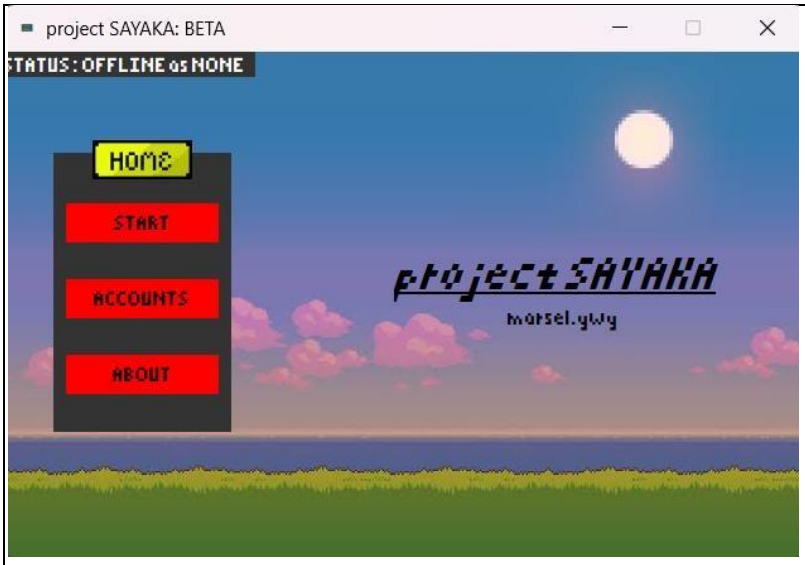
	Picture 3: Lost Screen

Project Sayaka using PyQt5

A Game made from scratch using Python and PyQt5 as a requirement for Object Oriented Programming subject during my freshmen year at Technological Institute of the Philippines Q.C. This game was heavily influenced by Final Fantasy I, A game made by Square Enix for the Gameboy handheld console. This game is just a survival by answering math problems correctly, the attack will be successful, otherwise the attack misses. The character sprites used are ripped from the aforementioned game and left unedited. Buttons and other sources are free.

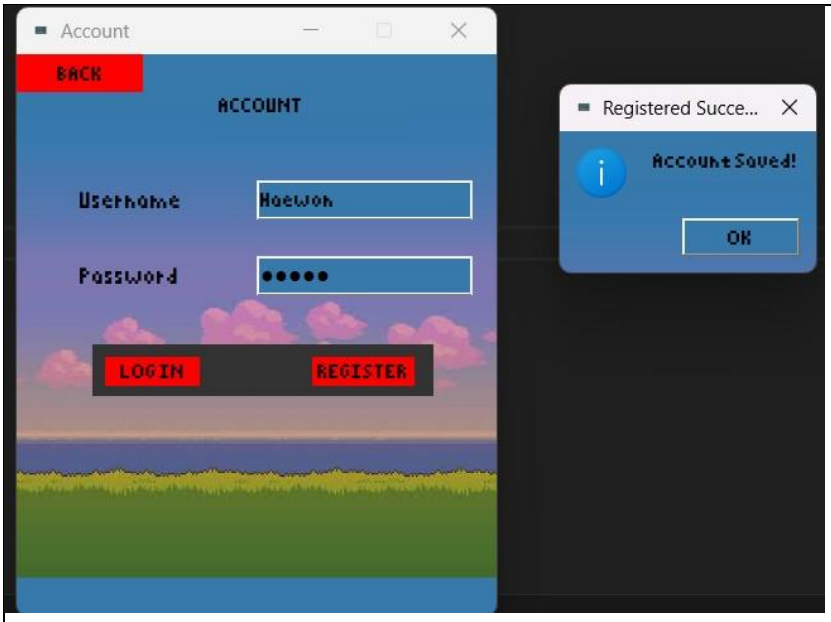
Concepts utilized:

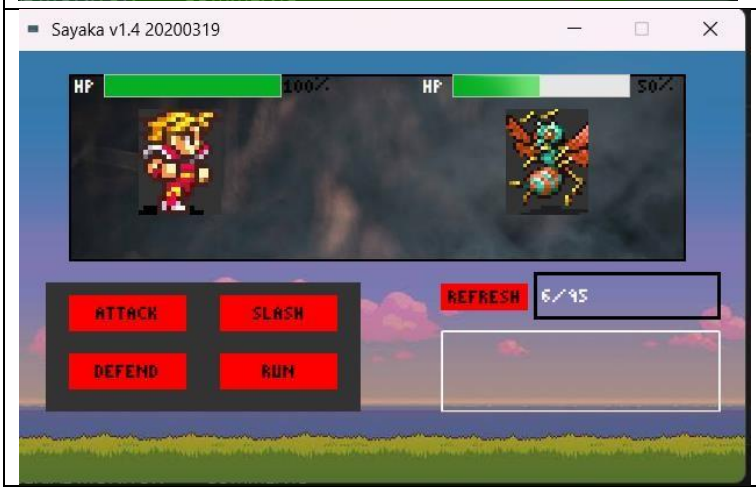
Python, OOP, PyQt5, HTML, CSS, File I/O, Basic Game Development and Account Database using SQLite.



Picture 1: Title Screen

Picture 2: About Screen

	Picture 3: Account Registration and Login
	Picture 4: In-Game Character Selection Screen.

		Picture 5: In-game world
		Picture 6: Turn-Based Battle System.

Project Kazuha using PyGame

A slow-paced personal project made during pandemic and continued until 2022 using Pygame. A platformer based on the tutorial of DaFluffyPotato. A very basic implementation of Pygame. During this endeavor, I dived into crafting my own game assets while following a pygame tutorial that provided insights in game structuring.

Concepts utilized:

OOP, Pixel Art, Physics, Pygame 2.5.1 and Basic Game Development

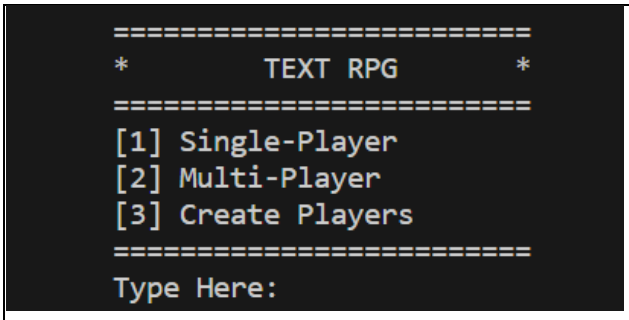
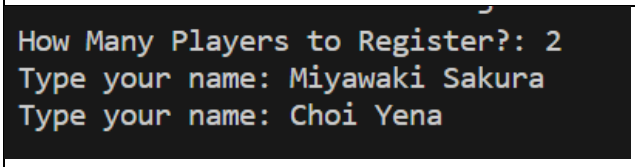
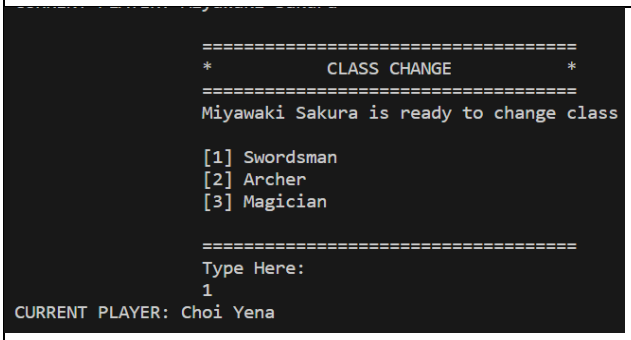
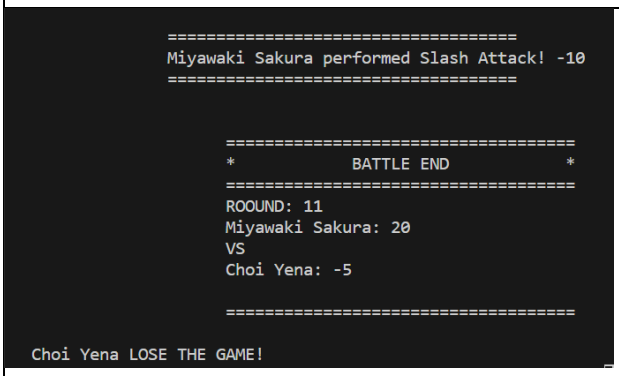
Picture 1: In game test of the world.

Project Text RPG

A text turn-based game with Multiplayer that applies the concept of OOP. This game was my personal project implementation based on what I have learned during my Object-Oriented Program class. Players takes turn after typing the number of the move they want to execute until one drop HP below zero. This includes Character Classes with unique skillset.

Concepts utilized:

OOP Concepts, Libraries and Basic Game Development.

	Picture 1: Menu screen of the game
	Picture 2: Create Player section.
	Picture 3: Class Selection and Battle Phase respectively
	. Picture 4: Battle Phase (End Game).

Calculator All-in-One (COLEEN)

A calculator application created using C programming Language. It has support for basic to scientific calculations, a history, a hold for taking the previous output to another computation. The About screen is an animation showing the logo of the calculator. This calculator can hold multiple numbers depending on the user prompt.

Concepts utilized:

C, Cursor Positioning as Animation, File I/O and Basic Programming Design.

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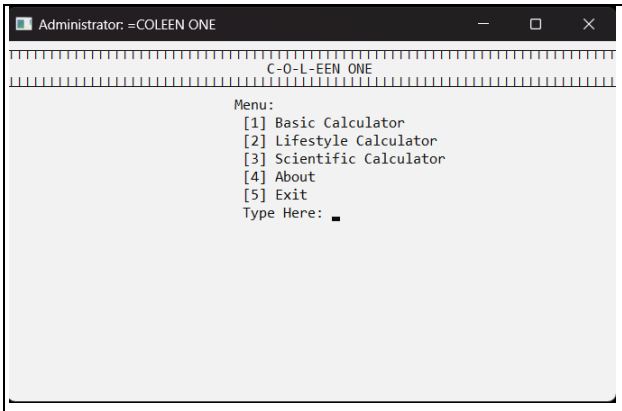
<td> 
</td>
<td>Picture 1: Menu.</td>
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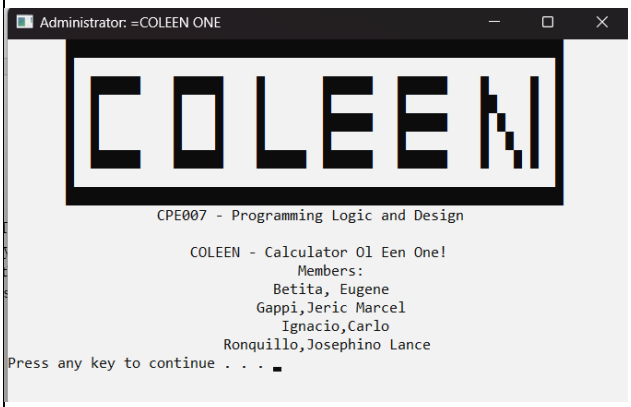
<td> 
</td>
<td>Picture 2: About Screen (with Animation).</td>
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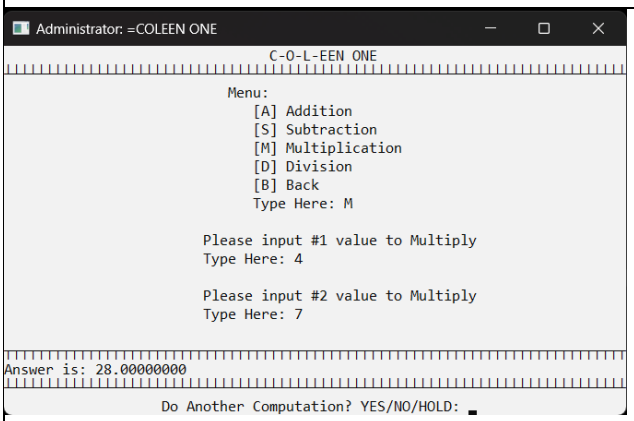
<td> 
</td>
<td>Picture 3: Computation.</td>
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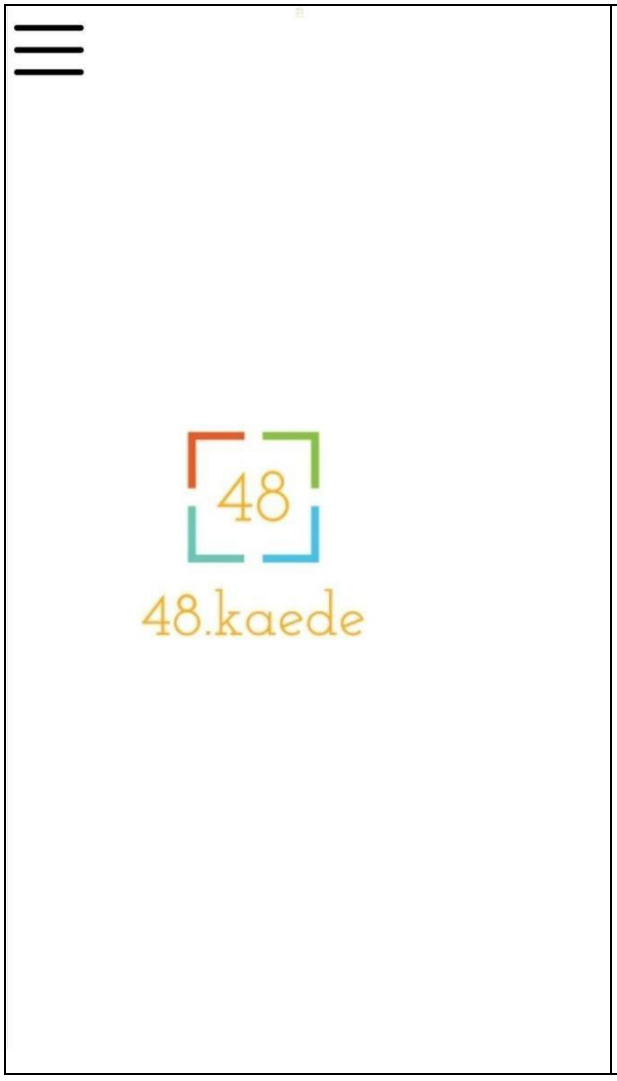
</table>

48.KAEDE (KArunungan, EDukasyon, Ehemplar)

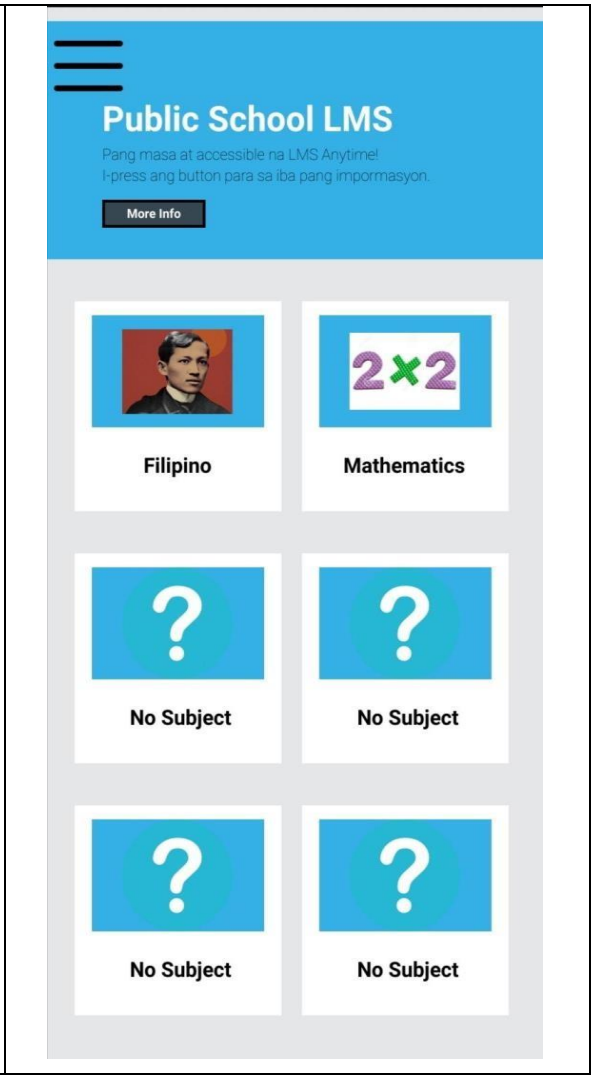
A concept of LMS app dedicated to public schools who want to utilize LMS technology even when offline. A concept dedicated to being a lightweight and user-friendly LMS app that serves as a bridge to give continue education during pandemic times. It features pdf readers, sharing files through mobile hotspot and account, quiz, and grading system.

Concepts utilized:

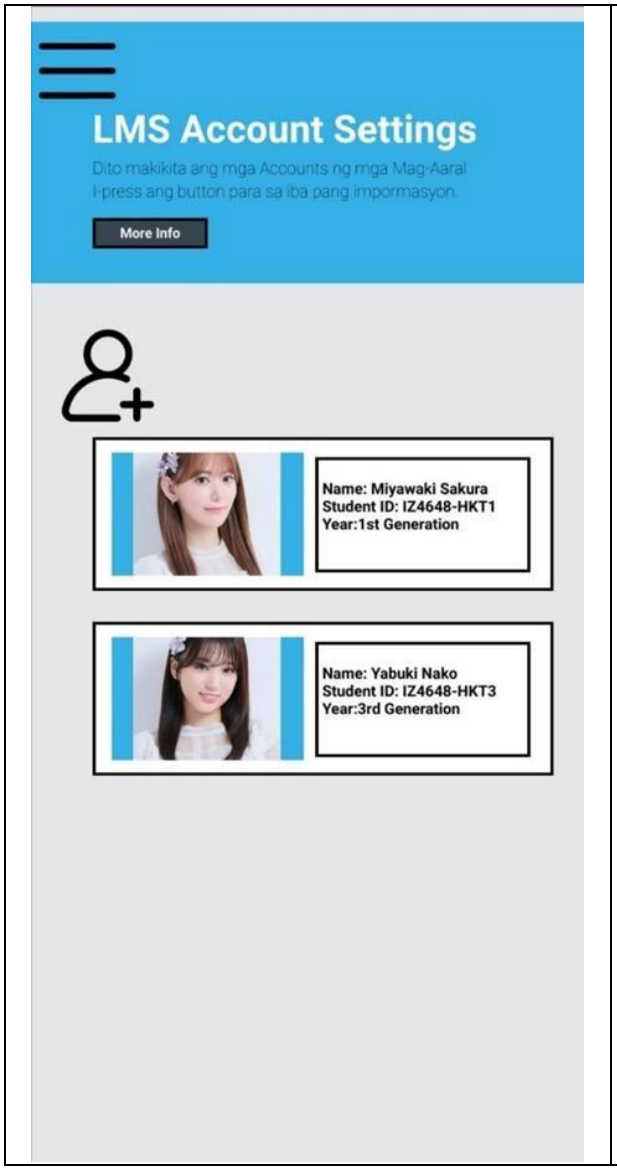
Python, Kivy Framework, PyQt5



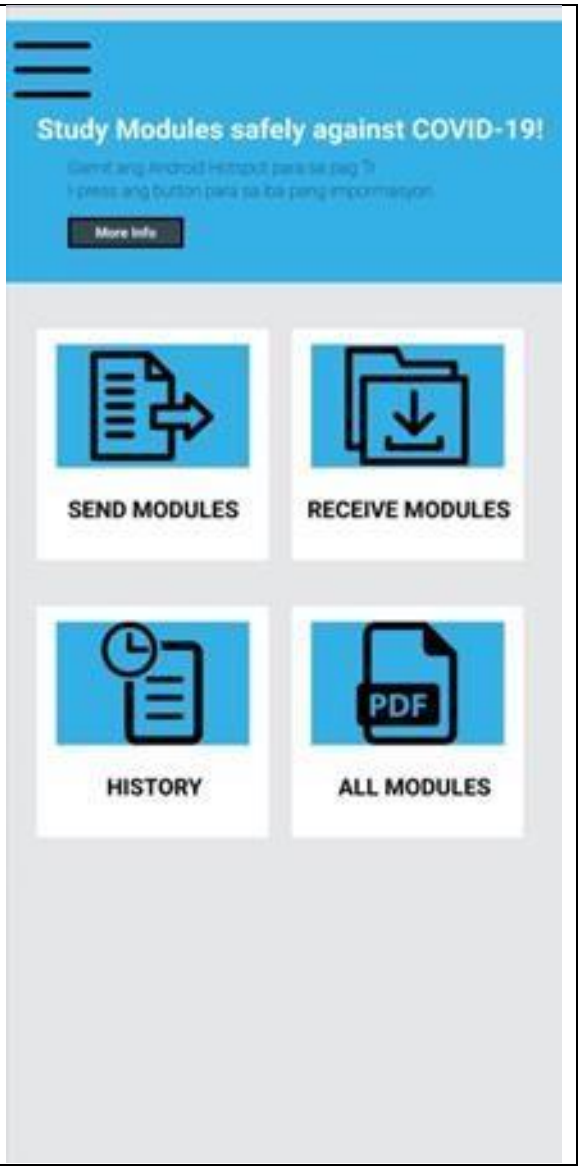
Picture 1: Title Screen



Picture 2: Subject Lists



Picture 3: Student Accounts



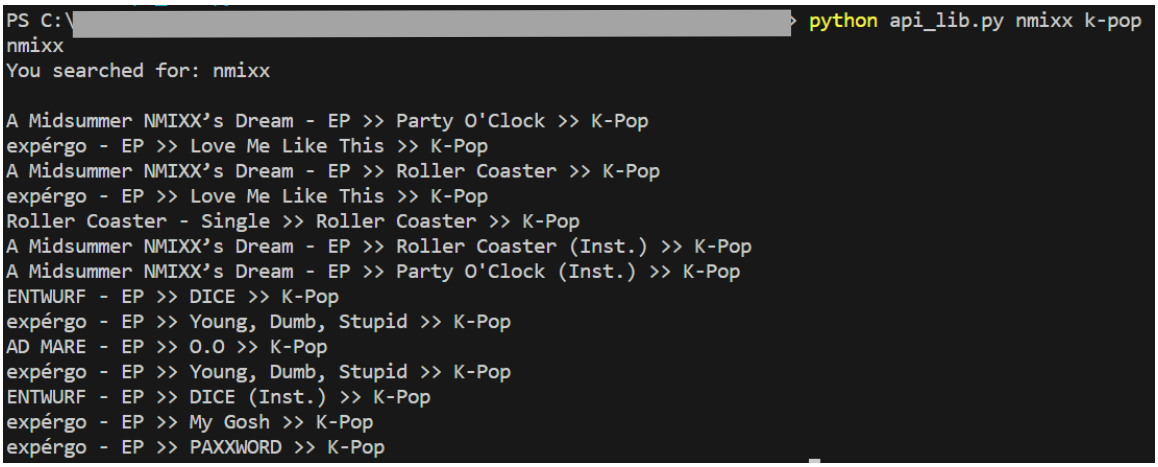
Picture 4: Module related tools

Simple iTunes Song Searcher

A script that uses iTunes API to search for the songs inputted by entering the desired artist and category through the terminal. This is a simple practice app based on CS50 of Harvard. This one of my few ideas and earlier version of my current final project for the CS50 course.

Concepts utilized:

Python, Libraries, API, Dictionaries.

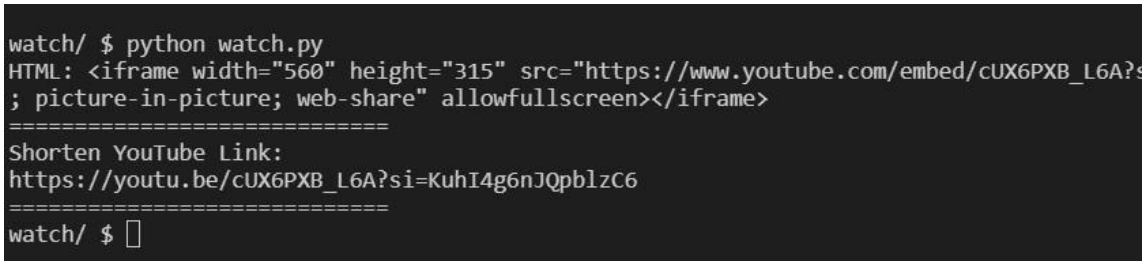


YouTube HTML Embed to YouTube Shorten Link

A script that uses Regex to specify and outputs the YouTube link in the given YouTube embed as a shorten YouTube link. This is a one of the few problems set in the CS50 course by Harvard.

Concepts utilized:

Python, Libraries and Regular Expressions (Regex)

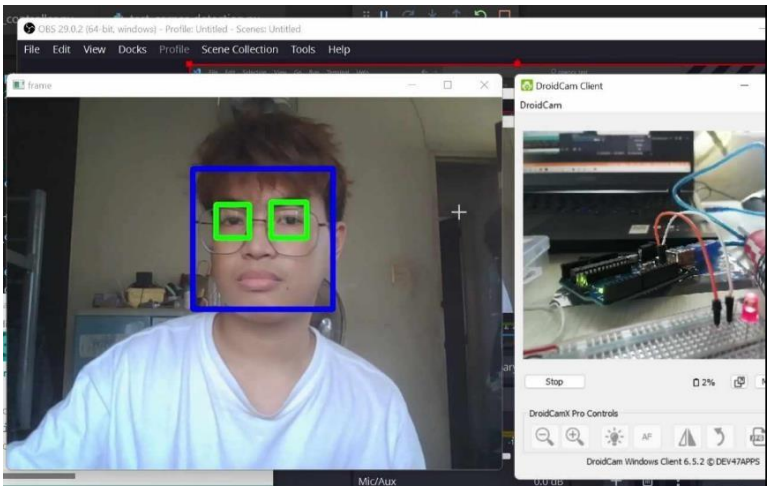


Face Detection using OpenCV with Arduino

This is a prototype python application that encompasses the basics of using OpenCV to detect facial structures and lighting up LED if it detects one. An integration of Hardware and Software using Pyfirmata and Arduino Uno.

Concepts utilized:

Python, PyFirmata, OpenCV, Arduino, and Electronics

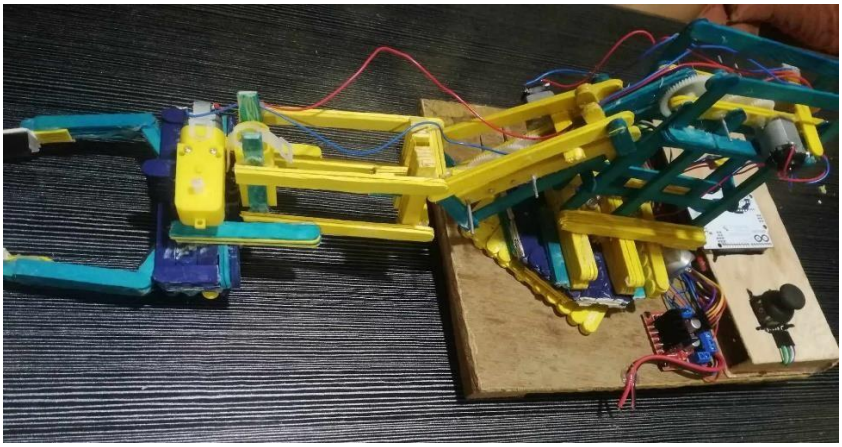


Robotic Arm using Arduino Uno

This is a Robotic Arm that can lift ping-pong ball and a Can of soft drinks. It has claw controls, 180 ° rotation and Up-Down movement. It is controlled by Arduino and powered by DC motors with L298N driver module.

Concepts utilized:

Arduino, PCB Design and Developing, and Electronics



LED Scrolling Matrix using 595 and Arduino Uno

Using daisy-chained 595 and Arduino Uno. This is a LED Matrix that displays the characters desired by the user to be outputted. It has scrolling effect features where it pushes every state of led from right to left.

Concepts utilized:

Arduino, PCB Design and Developing, and Electronics

GPS, RF AND SMS Tracker using Arduino

A commissioned project for Business Management students. The user can locate the tracker by using GPS and SMS or Radio Frequency (RF) Remote. The RF Remote connects to the receiver and executes a code where it produces sound using the buzzer. It can also be buzzed using SMS commands and must be sent to the SIM Card Number inserted to the tracker. By GPS, it requires SMS Command by texting "LOCATE" where it immediately sends a coordniates (lat, long) where the tracker is located during that process.

Concepts utilized:

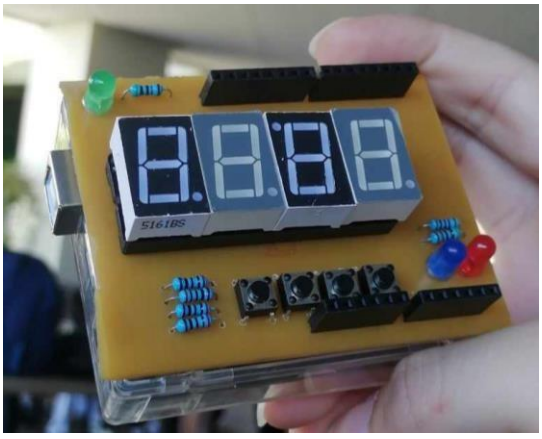
Arduino, PCB Design and Developing, and Electronics, GPS, SIM900L, Documentation

Timer/Stopwatch shield using Arduino Uno

A shield for the Arduino Uno that acts as a Timer or Stopwatch. It has a mode-value saving feature where it saves the previous value into the memory when switching between modes. It can count from 59:59 to 00:00 when using Timer and for Stopwatch it can count until 59:59. It has four reactive buttons, Start, Stop, Switch Modes and Clear. It also uses my own Multiplexing display library and Button library that I created solely for this project.

Concepts utilized:

Arduino, PCB Design and Developing, and Electronics



Other Projects

Pixel Art using Aseprite

During my craze to Game development, I was struggling to find a free and perfect fit resource to my game-dev plans. By learning how to create a pixel art is my motivation to continue learning a field like Game development. Some of these are real-life objects like Coffee Shops and Buildings. Drawing Pixel Faces are also one of my interest.

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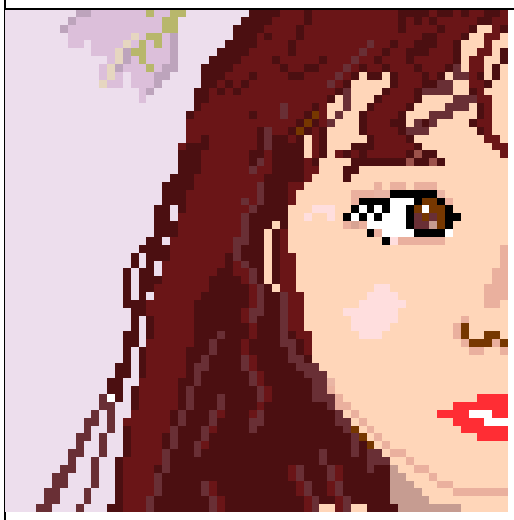
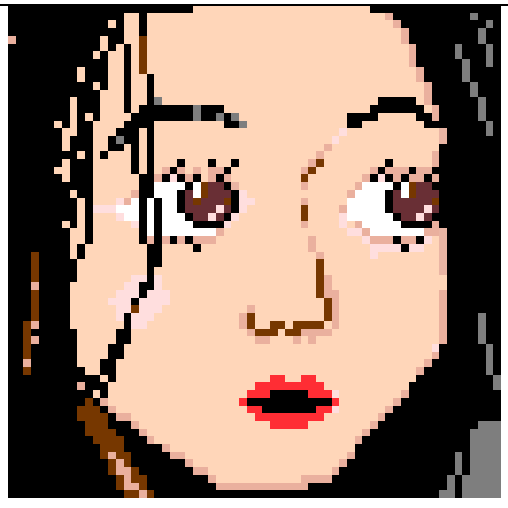
<td>  </td>
<td>  </td>
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Other Projects such as Line Follower, Sumo-Bot, Capstone/Thesis Machine are included in GitHub.