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Projects

Weather Web Application

Flask web-application displays weather information for any city/location in the world with a google-maps style weather map and hourly temperature graph.

- API calls to Weatherbit.io and Openweathermap.org.
- JSON weather data returned is stored in an array of hashmaps, where each hashmap element in the array represents weather data for a single day of the week, such as temperature, humidity, etc. for that day.
- HTML results page converted to Jinja template using Bootstrap4 for styling, to which data was passed via

 Flash
- Calculation and dynamic updating of HTML elements on the entire page by a single toggle to convert
 between metric and imperial units achieved through DOM manipulation using jQuery.
- Hourly weather graph created using the chart.js JavaScript library.
- Weather map produced using a leaflet JavaScript applet embedded in the page whose layers were provided by Openweathermap API and weather data was populated via hashmap array data in Flask.

Sushi Cat a Top-Down 2D Maze Traversal Game

The user plays as a cat collecting sushi in a top-down 2D maze created using turtle graphics module in **Python**. An exercise in **Object Oriented Principles**.

- Multidimensional array to create the playable map where player, terrain, and object coordinates are
 maintained
- Every coordinate within the map is an element in one of 3 arrays, representing passable terrain, impassable terrain, and interactable objects (such as sushi).
- In each array category, the coordinate object element is divided by the sprite/shader used to represent it, whether to appear visually as a wall, tree, flat ground, lantern, etc.
- Player/cat itself is an **object** which records quantity of sushi collected and current coordinate location.
- Based on user input (i.e. arrow or WASD keys), player/cat object calculates which coordinate is requested to
 be moved to next. Whether or not actual movement by the player occurs is determined by if the coordinate
 is a member of the array of passable terrain objects.

Animation Film Webscraper with SMS Notification

- Written in Python utilizing BeautifulSoup4 and Twilio APIs.
- GET requests to local film theatres film schedules to specifically filter for animation/anime films in real-time.
- Resulting HTML/CSS/JavaScript in JSON form is converted to unicode with BeautifulSoup4 and parsed to
 obtain film title, description, screening location, and screening dates for each unique film.
- Using the Twilio REST API, the information per film is sent as an SMS text to a recipient/phone number of
 your choosing.

School District Management Web Application

A Flask web-application for use in viewing and managing Schools, Students, Classes, and Instructors for a hypothetical School District, created for Database Design course at OSU with full CRUD functionality.

- HTML/CSS frontend whose displayed data from pages and input forms are dynamically generated from an
 originally designed database complete with entity relationship diagram (ERD) and database schema.
- Webapp transmits SQL queries to the database managed with MariaDB. Users of the application can
 directly alter the database to add or remove schools, teachers, etc. and retrieve such information as well.

Employment

Honolulu Museum of Art | Development Associate July 2014 - March 2018

Responsible for data fidelity and management of client/donor databases containing sensitive financial information. Developed automated procedures that used data from aforementioned databases to produce documentation reflecting parameters such as quarterly revenue and year to date comparisons of organizational fundraising goals for upper management use.

Develop online and in-person sales protocols for museum products, creating Standard Operating Procedure manuals for staff use organization-wide. Managed contribution/financial information tracking, procurement strategies, and receipt for major special projects with budgets ranging from \$0.25M - \$1M.

Website

https://john-sy.com

Github

https://github.com/ DarkHorse108

Skills

- Python
- □ C/C++
- □ SQL
- JavaScript/jQuery
- HTML5/CSS3
- ☐ IA-32 Assembly
- □ OpenCL/OpenGL
- □ CUDA
- OpenMP

Technologies

- ☐ MariaDB/MySQL
- □ Flask
- Node.js
- ☐ Git
- ☐ Linux (Ubuntu + Red Hat Enterprise)

Education

B.S. Computer Science

Oregon State University (2018 - Present)

B.S. Biology

Hawaii Pacific University (2010 - 2013) Colorado State University (2008 - 2010)