

Project Showcase

Computer Science, Indiana State University

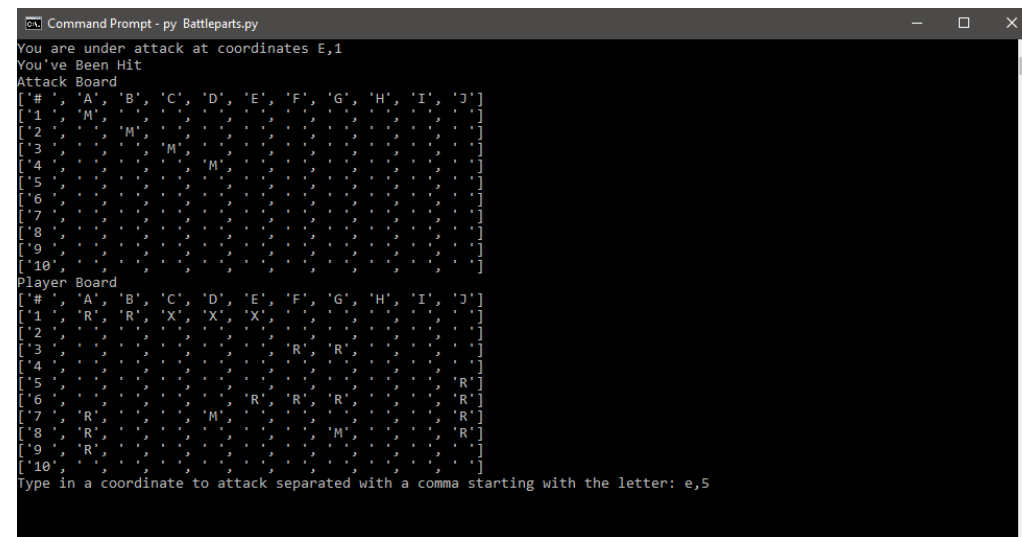
Oct 23, 2021

CS 1xx Level – Joseph Bricker

Project: Battleparts

<https://github.com/jbricker179/battleparts>

A simple text-based Battleship clone that I was working on while taking CS151 for additional practice working with lists and Python in general. A few problems that I encountered along the way were figuring out how to draw the board, preventing illegal moves, and adding some intelligence to the computer. I was able to give the computer a little intelligence by setting a variable when the computer hit a target and using that to determine what the next move should be.



Screenshot of the player's turn after the computer's third straight hit

Joseph Bricker
Personal Project / Game

ECT 1xx Level – Braiden Hunter

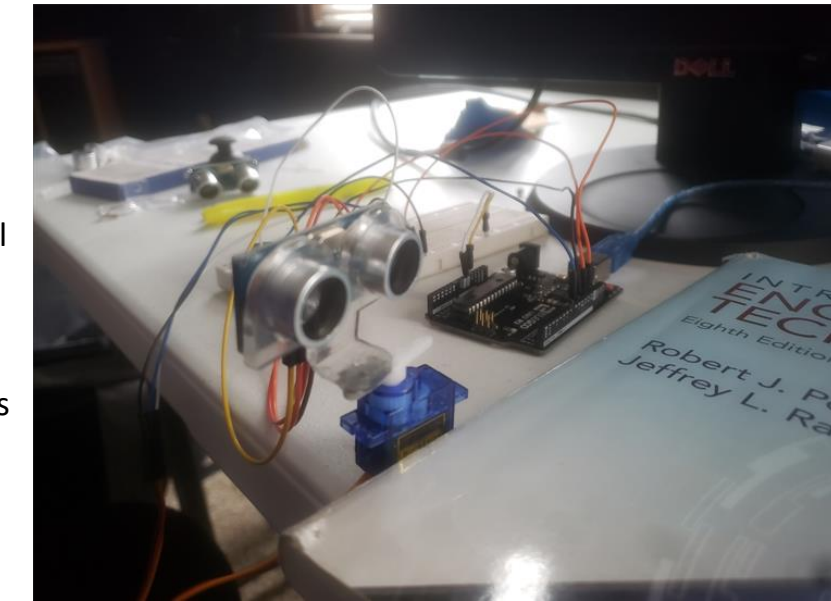
Project: An Arduino-Controlled Ultrasonic Radar with Buzzer

Description:

This is an Ultrasonic Radar using an Arduino microcontroller and Processing 3.5.4

This project allowed me to learn how to use an Arduino microcontroller while learning how to use code in a graphical sense. The major problems I had with this project was learning how to code in java along with figuring out the correct dimensions for the radar graph depicted on the screen. Through a lot of tutorial videos and painstaking guess and check with the graph, I finally ended up successfully completing my first bigger coding project.

Gitlab link: [Braiden Hunter / Arduino Radar Project - GitLab](https://gitlab.com/BraidenHunter/ArduinoRadarProject)



My Arduino Radar Project

Braiden Hunter
ECT 130 Final/Arduino Project

CS 2xx Level – Bart Ping

Project: Design a text-based game using C programming language

Category: 200 Level, Games

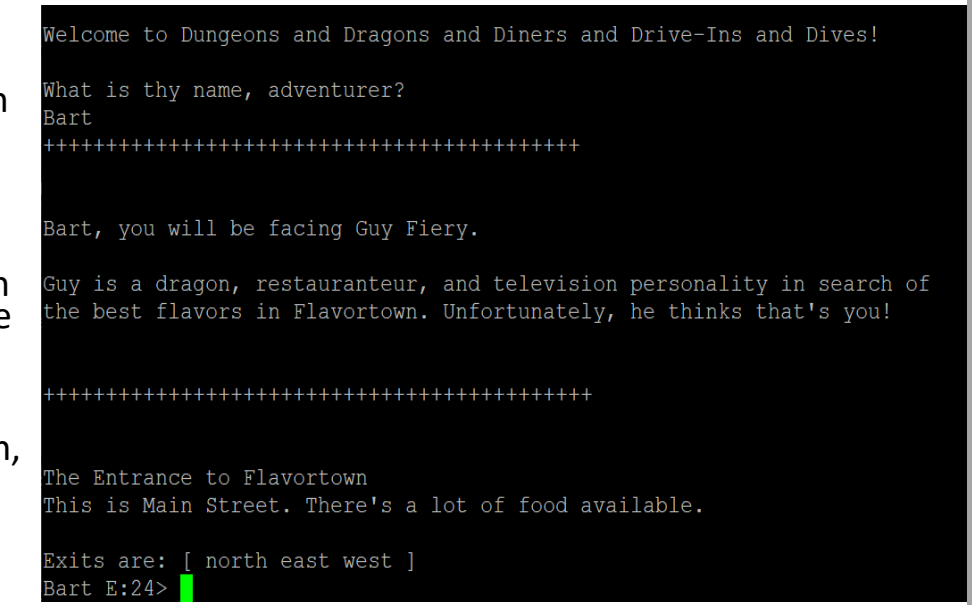
Description:

"Finders Keepers" is a text-based, single player room navigation game. The player will navigate through rooms, collecting the contents of each room, while avoiding a wandering monster.

Each room is a member of a linked list, with links leading to other rooms. The program populates each room with an item, imported from the items list. The "monster" consists of a structure that tracks its current location and updates it after each player move. Items the player collects are added to the player's inventory, a linked list containing description, point value, and quantity for each item. These are tabulated at the end of the game.

Goal:

The program is written in C using several source files. The project reinforced lessons on the implementation of linked lists and importing/exporting data to and from files, as well as using structures for storing information.



Link: <https://cs.indstate.edu/~bping1/flavortown/>

CS 5xx Level – Zachary Noble

Problem: Determine which of two authors wrote a given book

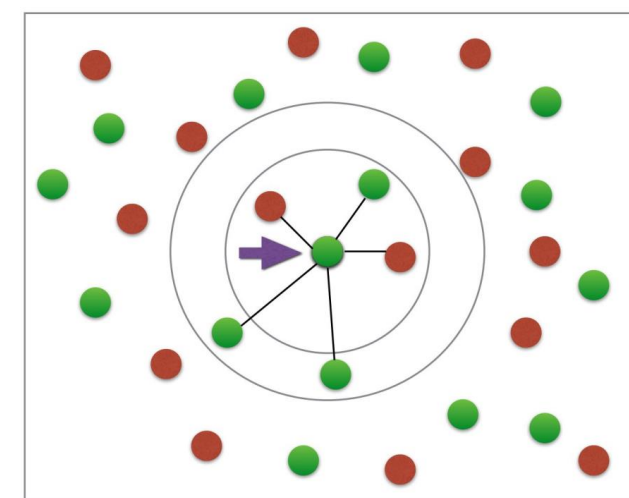
Solution: Text Classification using 3-Nearest-Neighbor.

Gitlab link: <https://gitlab.com/znoble/Project1>

Description:

We determine who the author of a new sample text is by how close it is to 3 points in the model.

This project determines if the new sample was written by Nathaniel Hawthorne or Mark Twain. First in the script setup.py, 5 books of each authors are processed: the 100 most frequent words that both authors use are saved as the model to determine the author of any new samples. In the second script guess.py, each new sample is read and the frequency of words that appear in the model are calculated. Using the Euclidean Norm (Generalized Pythagorean Theorem), the distance between each word in the sample and the model is determined. The 3 closest neighbors of the sample are used to determine who wrote the sample.



Visual example of 3-Nearest-Neighbor

Zach Noble
Project 1 for CS415/01 Programming for Data Scientist 1

Independent Project – Aman Anand

Project:

Social media Web Application Using Python Django

Description:
This is a Social media web application built using Python Django web framework.

This application allows user to:

- create their own profile.
- Post various kind of pictures, thoughts, videos and also allows them to read and interact with others post.
- An individual can also like, comment on someone else post.
- User can delete and Update their own post anytime they want.
- User can set and change their Profile picture and password if they want.
- If User is logged in and is inactive for more than 5 minutes then he/she will get logged automatically (Security Feature).

This Social media web application is more like Twitter and it uses mysql database as backend.

GitHub Link: https://github.com/aanand4/Social_Media



User SignUp Page for Social Media

Aman Anand
Personal Project

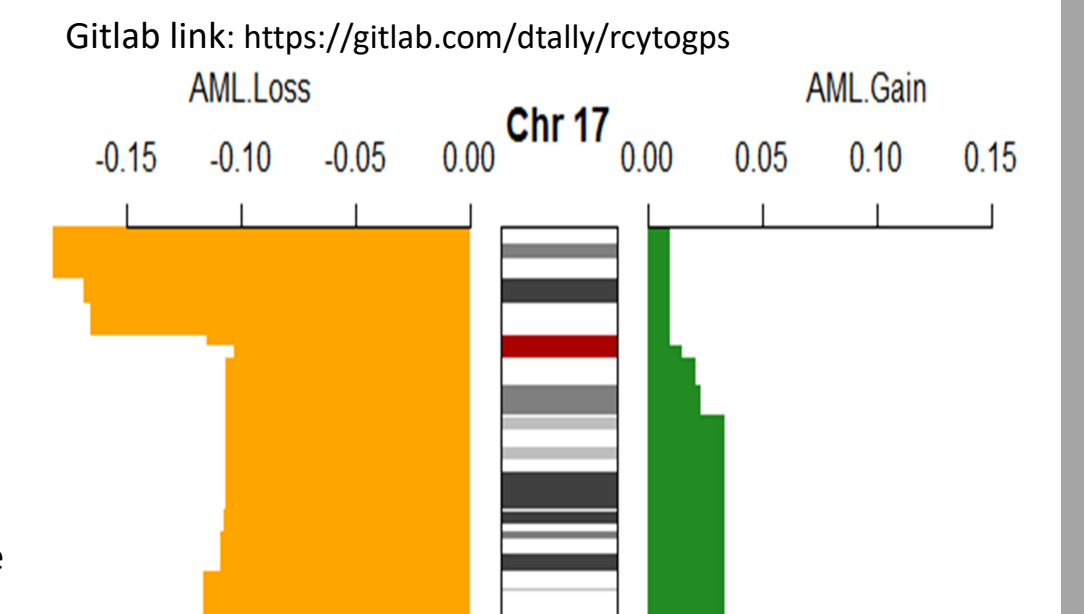
Independent Research – Dwayne Tally

Problem: How to do downstream analysis of karyotype data

Solution: Downstream analysis tool R package RCytoGPS

Description: In order to use RCytoGPS you first have to use the website CytoGPS.org to convert Karyotype data into JSON file(s). Then you can apply the function readLGF to a single file or to a whole folder to turn the JSON file(s) into a list that has five elements including source which documents which files were read, size of the data sets, chromosomal locations (CL), raw contains the binary data and a status if CytoGPS could process the data, and the frequency is the summary of the Loss, Gain, or Fusion events. Next you need to extract the cytoband location data along with the frequency data and apply the function CytobandData to transform the extracted data into s4 objects. With the s4 objects you can create images such as a comparison of 1-3 events of a specific chromosome or to the whole genome.

Dwayne Tally
Research project in collaboration with The Ohio State University



Comparison of the Loss and Gain events that are happening on Chromosome 17 using Acute Myeloid Leukemia data.

Students in computer science courses were asked to submit one slide summaries of projects they have completed as part of coursework, an independent project, or independent research. We hope the projects showcased on this poster convey the *range* and *depth* of the work being done by computer science students at Indiana State University. Special thanks to all students who submitted projects for this CS project showcase. For further info on CS at ISU, see <https://cs.indstate.edu>