TP 1 Proposal

Project description: My project is one where people may create an account which they can then access. The site will allow people to upload gpx files which I will then run some metrics on. I am thinking of holding these records to show progress as well as storing date to possibly show progress from week to week. Alongside this any new files uploaded will use previous files in order to show how much more somebody can ride/ run from their previous bests. It will also hold the longest ride/run they did and congratulate them if they get a better score. Also with enough records it will localize the trails that are constantly being ridden and will tell you what you ride the most and what trails you may want to ride more of.

Competitive Analysis: I am taking some ideas from sites like strava and map my ride which will take gpx files and apply their metrics to them. However what i am doing is focused more on personal improvement rather than getting records. I will also try and make it so that the results highlight the hardest parts of the trail which is something none of these apps do and one has to infer. This will give a better sense of what parts of the trails are best for training and can help develop more customizable routes.

Structural Plan: I will have one database file, probably in sqlite3 as that is the easiest to get up and running and does not run into any issues until there are literally thousands of reads and writes which this project will probably never operate on. I will have one main init file which holds the animation functions and also will use helper modules in order to spread out the functions managing the database along with related groups of functions such as gpx file functions.

Algorithmic Plan: My hardest part of the project will probably be analyzing maps and suggesting alternating routes in order to increase difficulty. This will take both plotting the original routes, assigning a score to each segment and then lining up many connective routes based on varying difficulty level.

Timeline: Right now i have implemented the database along with some rudimentary animations, mostly just to create the users and test implementing uploading gps files. My next step will be actually fully implementing the upload of gps files which should only take a day or two which will be done over thanksgiving break. The couple days after that will be spent creating the home page which will have a lot of the data extracted from the gps files of the user. The weeks after that will be spent on implementing trail recommendations and scale it based on how hard of a ride/run the person wants at the time.

Version control: I will be using github for version control as I am familiar with it and I now have private repositories under the student license. Link will be shown during the TP1 presentation

Module List: The modules I will use are: tkinter/pygame(Will decide during tp1 based on TA recommendation), sqlite3 and gpxpy.