A red and black logo

AI-generated content may be incorrect.

Vulcan Activity Tracker

*Senior Project 2025-2026*

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Vulcan Activity Tracker

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***Team Members***

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***Introduction***

The Vulcan Activity Tracker – Senior Project 2025-2026 is a web-based application to track PennWest student athletic activities in a fun interactive environment. This application will combine the features of recording workouts, viewing performance analysis, and following leaderboards, with the social aspect of friendly competitions. PennWest student users will be able to login with their student email to access many daily fitness tracking amenities. Our project is designed to service both advanced student athletes that train daily and recreational fitness users that enjoy participating with friends and clubs.

We aim to utilize a database and artificial intelligence to encourage students to maintain a healthy lifestyle through sports, workouts, and athletic competition. The Vulcan Activity Tracker will allow students to upload activities they have completed into a single platform, reducing the workflow of several planner apps and streamlining daily habits. PennWest students are encouraged to join their respective teams or club or even create a group with their friends to view each other’s activities. We hope to promote healthy habits, while bringing the campus together in an athletic community!

***Motivation***

There are many activity tracking applications out there, but most of the useful features are hidden behind a paywall. Take Strava, for example; they have an $80-per-year paywall on their app. This may not be much if you are a professional athlete or are training for a competition, but if you are just generally active, it is not worth the price. Our application will allow PennWest Student users to access some of the higher-end features without incurring a fee.

***Objectives***

1. Database
   * A working database is crucial in this program as the user will be entering activities into the application, and all the details of this activity need to be stored accordingly. Not only this, but the user will be able to view other people’s activities.
2. Website
   * A web-based application would allow everyone with a PennWest email to log in to the application and track their desired activity.
3. User Friendly Interface
   * Designing the dashboard with a user-friendly approach will promote the Vulcan Activity Tracker’s use in daily campus life.
4. Student Interaction
   * Students will be able to make their own personalized groups for both campus clubs and friends to track activities, allowing others to participate. The Vulcan Activity Tracker will display what activities were done as a group and the members involved.

***Implementation Techniques***

*Docker*

Docker is a client-server application to build and run a database container. This tool creates a blueprint of the database tables and columns in a cloud-based method to allow for programming group collaboration and reusability.

*Python-Flask Backend*

The programming language Python will be used as a backend framework for this web-based application. Flask will be used to integrate with the Python language and serve as an API framework to streamline server-side development.

*HTML frontend*

HTML and CSS will be used for our frontend framework of this web-based application. We will make use of base templates to reduce all of the code to one place and to make routing to another page easier. CSS will be used for the style of the website.

*API Calls*

We will make use of API calls to enable our AI coach (more on that in Features). We will also make use of API calls to display the information that the user wants to see based on filters, searches, organizations, etc.

*VS Code*

Visual Studio Code will serve as our code editor for this project. This development environment allows for complex server and client-side architecture. Vs Code’s vast extensions aid in database debugging, front-end organization, and API design. Additionally, Vs Code’s git/GitHub integration aids in seamless team collaboration and development.

***Potential Users***

The potential users of the Vulcan Activity Tracker are PennWest students that enjoy athletic activities. These activities could be student athletes that want to track their progress, personal training planning, and a social aspect of group exercises. By encouraging users to participate in friendly athletic competitions on campus, the Vulcan Activity Tracker can promote a healthy and fun campus lifestyle.

***Features***

AI Coach – the program will include an Artificial Intelligence coach, which will analyze each activity when the user decides to view a specific activity. The coach will give an overall analysis, things that the user did well, and things that the user could improve upon in the future, based on the data.

Leaderboard – the program will have a leaderboard feature. This will show the campus leaders in the respective categories, whether it be miles ran, total time exercising, and many more. Leaderboards can either be across the entire campus or within the organization/group the user is in.

Routes – the program will have a feature that will allow a user to select the route they took if their activity was outdoors. There will be a list of available routes along with their mileage. Users can select how many times they did the route, or if they did a second route within the activity (an example would be going into the rotary park loop and then coming back out).

***Resources***

Strava, Inc. (2025, Sept 11). ***Strava* (Version 428.0.1)** *[Website and Mobile App]*

[**https://www.strava.com**](https://www.strava.com)