A red and black logo

AI-generated content may be incorrect.

Vulcan Activity Tracker

*Senior Project 2025-2026*

Margo Bonal

John Gerega

Luke Ruffing

Vulcan Activity Tracker

09.21.2025

Team Members

John Gerega – *Computer Science* – Proposal

Margo Bonal – *Computer Science* – Specifications /Design

Luke Ruffing – *Computer Science* – Requirements

Introduction

This application aims to utilize a database and artificial intelligence analysis to encourage students to maintain a healthy lifestyle through healthy competition by uploading activities they have completed into a single platform. Students are encouraged to join their respective team or club or even create a group with their friends to view each other’s activities.

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 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.

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

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).