Vulcan Activity Tracker

*The Athletic Activity Tracker for PennWest California Students.*

Specifications Document

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Course: Software Engineering Project I

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**Instructor Comments/Evaluation**

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# **Abstract**

This project, the Vulcan Activity Tracker, is an activity tracker that can be accessed by students attending Pennsylvania Western University’s California branch. The activity tracker will allow students to track any physical activity they participate in, which may include running, sports, walking, lifting, and many more. This project will use a Docker container, a database, and a Python backend. All these components will be used to track user data, such as login information and the activities the user has completed. The Docker container will be used to keep the frontend, backend, and database in one place. This will also ensure that the app runs consistently across multiple platforms. The database will store all the users and their data. Functions to retrieve, create, and delete data will be written in the Python programming language. The user will be able to add activities manually and view other users’ activities. This document will cover all necessary details for the user and the development team regarding the functionality of the final product.

# **Description of the Document**

## **Purpose and Use**

The purpose of this document is to define the scope and specific requirements for the project. These requirements include the product’s functionality and system requirements. The developers and clients will use this document to state the terms of their arrangement. The client has the right to dispute the contents of this document, so the product properly reflects their desired requirements. After acceptance of the terms stated in this document, it shall be known that this document becomes a binding contract.

## **Intended Audience**

This document’s intended audience includes the clients and product developers. The product developers have created this document to make an outline of their finished product. By doing so, it helps the client to know exactly what product, functionality, and the cost that will be associated with this project. It also assists the development team to know which direction they are headed in and states their priorities for the project. Any uncertainty in this document needs to be addressed as this serves as a binding contract.

# **System Description**

## **Overview**

The Vulcan Activity Tracker is a software application, accessed via a web application. The main function of the activity tracker is to manually track exercise activities. A user can track exercise activities ranging from multiple sports. These could include running, lifting, biking, swimming, any organized sport, and many other activities. A user will also be able to join their sports team, recreational club team, or create a group with friends. With recreational clubs and teams there will be a person to admit users into the organization. Users can view activities from everyone on campus. A leaderboard for each activity will also be accessible to all users in order to inspire some friendly competition.

# **Environment and Constraints:**

## **End User Profile**

The most common end users of the Vulcan Activity Tracker are PennWest students, most likely ones involved in sports or recreational clubs. Users should be familiar with using web applications to interact with the website. With a basic understanding of navigating web applications, any student will be able to add an activity, view their statistics, view other students’ activities, and view the leaderboards.

## **User Interaction**

The user interaction will be through the software application that runs the web application. Once the user logs in or creates a new account with Pennsylvania Western credentials, they will be redirected to the home page with all recent student activities. The user can then find the buttons to redirect them to the leaderboard section, group section, and the section to actually add an activity. In the leaderboard section, users will be able to filter based on activity type and by group, meaning they can see the leaderboard of only their group or organization.

## **Hardware Constraints**

The following are hardware constraints of the Vulcan Activity Tracker. A user will need the following:

* A desktop computer system (with mouse & keyboard), laptop computer, or mobile device with internet access and WIFI capabilities.
* Internet network components of router, modem, ethernet.
* Mobile device data plan from ISP.
* Current Windows version 11
* External fitness tracker i.e. smart watch for collecting activity tracking data.

## **Software Constraints**

## **Cost Constraints**

## **Other Concerns**

The end-user will need to have access to Wi-Fi or a Data Plan to utilize the website. If a student is out of range of cellular service, for example, hiking, access to the Vulcan Activity Tracker will be impacted. Users must also have valid Pennsylvania Western University credentials. Limitations need to prevent non-PennWest students from using the application. The sharing of student credentials is unintended and improper use case. A final but significant concern is the uploading of malicious content to data entry fields. Since the Vulcan Activity tracker is primarily a web-based application, cybersecurity attacks such as internet virus infection, data injection, and DDoS are of concern. The developers of the Vulcan Activity Tracker are held non-responsible for user data corruption and cybersecurity attacks; however, software precautions will be implemented to protect the CIA Cybersecurity Triad: Confidentiality, Integrity, and Accessibility.

# **Acceptance Test Criteria**

## **Testers**

The following people will serve as testers for the Vulcan Activity tracker:

Developers:

* Margo Bonal
* John Gerega
* Luke Ruffing

Professor:

* Dr. W. Chen

External Testers (PennWest Student outside of CS Major):

* Oumer (what last name do I put for him?)

## **Criteria for User Acceptance**

Integration of Separate Parts and Installation  
System Modeling   
Functional: Use Cases & Scenarios   
Entity: Class Diagrams  
 Class name / description / type  
 Attributes  
Dynamic: Statechart  
 States  
 Events  
 Transitions  
Dataflow Diagrams Components / Tools Needed

List of properly cited scholarly resources in APA format  
Appendix: Glossary of Terms  
Appendix: Team Details

Appendix: Writing Center report  
Appendix: Workflow Authentication