A WEB-BASED TRACK MEET SIMULATOR

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ABSTRACT

In collegiate track and field, all results throughout the season are compiled on the website tfrrs.org. Coaches would like to use this information to determine which athletes should compete in each event, but they cannot interact with the data to see how changes would affect the scoring. To this end, we developed a web application as our final project for a Web Programming course that allows coaches to simulate different scenarios for the meet and see the final score in each scenario. Using our application, coaches can simulate historical and current seasons for both genders. Events can also be selected and deselected, which allows coaches to see the strengths and weaknesses of their teams. After making adjustments to the projected results, the scenario can be named and saved to a database, and saved scenarios can be loaded at any time.

The application runs as a Docker network with three different containers. The first container uses Python's BeautifulSoup library to scrape the data from tfrrs.org. The data is then written to a Redis database that exists in a separate container. The third container runs a Flask server with API functionality to read and write saved scenarios to the database. The Flask server also delivers the scenarios to the front-end, which utilizes standard HTML, CSS, and JavaScript. This application is not currently in use, but we plan to include other NCAA conferences and implement a login system, which would broaden the appeal of the site to coaches throughout the nation.