

Software Implementation and Testing Document

For

Group 2

Version 2.0

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1. Programming Languages (5 points)

Python is utilized for server routing, such as redirection between pages, in the form of the module flask. It is also used for sqlalchemy database management for queries and forms with other modules helping facilitate this, including Flask-Login, flask-WTF, email-validator, etc. HTML is used for the markup of pages, and provides the necessary components to allow form submissions and query displays. There are some sh files that can be used to set up the database and run the server. The reason we chose python is that it is easy to learn and implement whatever modules are needed for our web application.

2. Platforms, APIs, Databases, and other technologies used (5 points)

For this project, the database that we are using is SQLite for its ability to run on a variety of platforms. In order to create an environment that easily allows us to manage our python modules, we decided to take advantage of linux ubuntu for our development platform, most of us running it through virtual machines.

3. Execution-based Functional Testing (10 points)

Tested the selection of at home workouts or at gym workouts (functional requirement 3 in the workout section), discovered bugs with displaying images and links on the page. Each time a functional requirement is updated and reflected in the code, the application is walked through with every possible path attempted in order to mirror the freedom of the eventual users. Once more functionality is achieved, a similar method will be attempted within attributes, such as form submissions.

4. Execution-based Non-Functional Testing (10 points)

Whenever the program is walked through for functional testing, non-functional testing is also kept in mind while experiencing the application from the perspective of a user. An example of this is that data is always expected to be reliable and secure, and if testing yields different user data upon a query, then this is immediately corrected.

5. Non-Execution-based Testing (10 points)

The two major components of the application are both overseen by groups of two, allowing for constant code review and support for key features. Walkthroughs for understanding the framework and database interactions were delivered in the form of videos and example code in order to assist in the learning process. If there is a lingering bug, then the component groups will generally open up the issue to a larger audience in order to correct it or find the best way forward.