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CS 499 Capstone

SNHU

Final Project

Weight Tracking App

My specialization in my career is full-stack software development. This capstone, highlighting my skills, will prove how I will be of use as a full-stack developer in the industry. These enhancements have portrayed my skills in these three areas and allow me to showcase what I can do in my career. These sections portray a culmination of all course outcomes by enhancing this project. I have decided to talk about my Mobile Development course where I created an app called Weight which is a weight tracking app. This project is from the CS 360 Mobile Architecture and Programming class. This app was created to be a simple tool for users to keep on their devices and help with every day tasks. The design is purposefully very simple and is designed to be very easy to use. Efficiency is very important with this project. When considering algorithms and data structures, this project will benefit from more structure. I will be completing and adding to the graphs that are already included in this application. Organization and efficiency in mobile app development is important in an app like Weight. These improvements will be beneficial to the project overall immensely. The app Weight utilizes graphs for data storage and also for the user to be able to keep track of their data. This organization will greatly improve the visualization and usability of Weight. Creating technically sound, professional quality, and efficient programs are very important skills to have. This project will show off these skills, as well as, the ability to exceed expectations in database design and algorithmic principles. These self assessments and code reviews allow me the chance to display my confidence as a developer, as well as, creativity and thoroughness in full stack development. Consistently working on a project is important and adding enhancements to Weight shows my ability to consistently follow through on full stack development projects in my career. The users I have identified to use this app are the following: Users generally monitoring weight for their health, fitness enthusiasts, and users looking to change their weight with a goal weight in mind. People sometimes have a hard time keeping their weight steady and need help monitoring it. General health is a great way to use this tracking app. These users are focused on maintaining a healthy lifestyle. This app can help them track their weight and make sure they are on a steady maintenance trajectory for a healthy lifestyle. Another category of users are enthusiastic about their fitness. They have weight gains they specifically want to reach. Each time they add a new weight, they may have went up on plates at the gym that month during bench presses or deadlifts, for example. They want to track their weight and are excited about it because they want to see visual progress of all of the hard work they have put into their work outs. This app can help them see their progress over time. The last category of user I am going to cover are those specifically looking to change their weight and have a goal in mind. These users are typically wanting to lose weight and know what weight they specifically want to reach. These users are looking for a way to keep them on track and accountable with each weigh in. This app can help them stay motivated in their weight goals and can even notify them as they hit their goals. All three types of users will enjoy the following functionalities of the app and in turn be able to reach their individual goals, accordingly. Using this app is straightforward. It is simple in functionality and in user interface design. The app has a black background with white text. In later versions the user will be able to change the font and add a color of their choosing that will be applied to all buttons. The user first downloads the app. They first see the login screen where they either create a new account, or enter their username and password. There will always be a button on every screen in this app that allows the user to exit at any time. If the user entered valid credentials, they move on to the next screen. If this is their first time using the app, they see: ADD or Update weight? This will be the ADD or UPDATE weights screen. If they are a returning user, they see their previously logged weights in the WEIGHT LOG screen. The database will have three tables: daily weight entries, user login entries, and a goal weight entry. The returning user will see all three categories in the WEIGHT LOG. They will additionally be able to see the dates that all information was previously entered on. The returning users are additionally given the option to ADD or UPDATE weights on the WEIGHT LOG screen. They can add weights as needed which includes the selection of measurement each entry. Some may want to add weights in lb, kg, or g, for example. If this is a valid entry each time, the weight is stored in the database and the user is sent to the weight goal screen. If the entry is invalid, they are taken back to the ADD or UPDATE weights screen. Once the goal weight is set, the background processes compare this current weight with the goal weight. If they have reached their goal weight, the notification process sends them the following notification: “Congratulations! You have reached your goal weight.” If the goal weight has not been achieved yet, the app simply carries on as usual. The update weight works the same way as the add weight. Both processes will update in the database. The update weight process also has the same invalid entry check in place. All screens and features described in this first installment of the app coordinate in creating a user-centered user interface design. Users will have the ability to track their weight over time and watch themselves get closer to their set weight goal. They will enjoy the app because it will be so responsive and simple to use. Entering in their weights will be so quick they won’t feel it is taking their attention away from important things in their life and may even be able to multitask while using the app. The sleek user interface will not distract them from their goals or their life.

When enhancing my project, Weight, I have improved the software design and engineering section in multiple ways. I have improve the user interface on multiple screens of my mobile app. I have increased design best practices, for example, I have removed the thin box around the buttons on the weight log screen. I have changed the background to see which design works best, I have improved the stability and structure of the user interface, and I have improved the database retrieval as well as it’s handling in general. The entire mobile app has been improved and the complexity of the app has in turn been expanded upon. These enhancements have supported my completion of course outcomes. I have been able to demonstrate my ability to use well-founded and innovative techniques, skills, and tools in computing practices for the purpose of implementing computer solutions that deliver value and accomplish industry-specific goals. My skills in this area show that I can create a mobile app that delivers a solution that is both well-functioning and stylish to clients.

When enhancing my mobile app, I additionally improved upon the algorithms and data structures of my project as a whole. My app was not functioning as intended. Troubleshooting took a great amount of time, and I eventually was able to improve upon CRUD functionality. My program was only acting on Create and Read. This was not being implemented in a good way, only an okay implementation. I improved upon CRUD and enhanced the functionality of CREATE and READ, which took a lot of time. User input was also not impressive when beginning to enhance this project. I improved this area by creating reviewing SMS notifications sent to the user when they entered the wrong input on the login screen and the add weight screen. The inputs will now only accept the type of input I allow for this program. One other implementation I added was to improve data queries. I reviewed my add weight screen and my weightlog screen to see where I can improve the data queries. This improvement greatly increased the success of this app, allowing it to function the way I had originally intended it to function. I have been able to design and evaluate computing solutions that solve a given problem using algorithmic principles and computer science practices for the purpose of implementing computer solutions that deliver value and accomplish industry specific goals. I have created an app that implements a good design, a working database, the ability to accept proper inputs, and the ability to organize, store, and display data efficiently to the user.

The database is an area where I greatly improved my mobile app. Here I show where I can store, retrieve, and display data to users both efficiently and creatively. This project instills a modern minimalistic design that incorporates a well thought out database structure. To improve Weight, I modified the SQLight database schema. I organized it and in turn created a more efficient program. I solved multiple errors and issues that were causing my app to crash multiple times. In doing so, solving these problems allowed for a more impressive data retrieval ability. I was able to employ strategies for building collaborative environments that enable diverse audiences to support organizational decision making in the field of computer science through my enhancements on this project. I also was able to Design, develop, and deliver professional-quality oral, written, and visual communications that are coherent, technically sound, and appropriately adapted to specific audiences and contexts by allowing myself to view my project from a new perspective. Design is important to me, and one cannot only rely on it. Having a well -functioning database is extremely important and I improved my skills greatly in both areas while enhancing this mobile app.

I have demonstrated that I am a professional who can develop professional quality software. I have been able to improve input validation and keep the program from crashing. I have enhanced the program so that it runs as it is designed to. I am confident that I will be able to create efficient applications that are emulated with well thought out design skills.