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CS 499 Capstone

Artifact 1 Narrative

1. Briefly describe the artifact. What is it? When was it created?
    a. This artifact was originally created a couple years ago for my CS 360 class. It is a mobile android application built in Java. The original design called for 3 views, a database and a Login feature. I chose to create a weight tracking application so that users can track their daily weight and then see this information on a graph.
2. Justify the inclusion of the artifact in your ePortfolio. Why did you select this item? What specific components of the artifact showcase your skills and abilities in software development? How was the artifact improved?
    a. I selected this artifact because it was the first artifact that I created from the design phase all the way to completion.
    b. The specific components that showcase my skills is the design of the application. This original design was shown to different people and notes were taken to provide good user experience. It shows my skills at gathering user information and then applying that information to the design phase of an application.
    c. This artifact was improved by creating a more user-friendly UI. With the original only having 3 total views everything was stacked on top of each other and caused things to go off screen. The new UI/UX features a new menu that allows you to choose which view you want to look at. It adds a calorie tracking view and moves the graph from the weight tracking view to its own screen. The new UI locks the recycler view into place at half of the screen so that when adding data to this it

does not move the Edit Text boxes off of the screen. This will also display the number of calories that have been burned converted to pounds. Because this application can be used by multiple users I also included on the main menu a way of showing which user was logged into the application.

3. Did you meet the course outcomes you planned to meet with this enhancement in Module One? Do you have any updates to your outcome-coverage plans?
    a. The course outcomes that I planned to meet were:
        i. Employ strategies for building collaborative environments that enable diverse audiences to support organizational decision making in the field of computer science – completed by building a new UI that allows better user interaction with the application based on user review.
        ii. Design, develop and deliver professional-quality oral, written, and visual communications that are coherent, technically sound and appropriately adapted to specific audiences – completed by designing the new UI to accommodate users that would want to keep track on calories as well as having the views less crammed with different things (moving graph to it's own view).
        iii. Demonstrate an 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.- completed by adding shared preference to the application so that I could keep track of the current user that was logged in to display on the main menu. This also allows for better queries within the DB.

iv. Develop a security mindset that anticipates adversarial exploits in software architecture and designs to expose potential vulnerabilities, mitigate design flaws, and ensure privacy and enhanced security of data and resources. – completed by adding input validation as well as checking to see if the common SQL injection queries are inputted into the text fields before they are converted or sent to the DB.

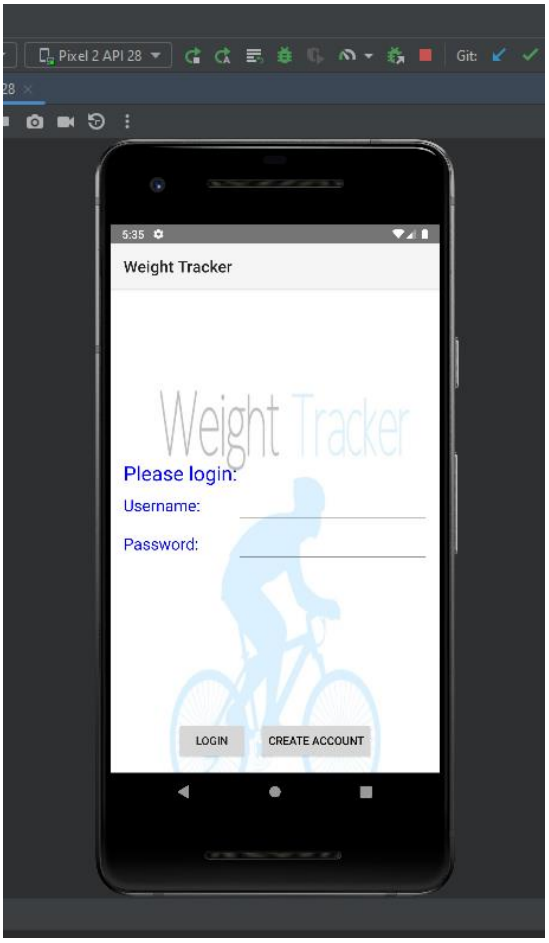
4. Reflect on the process of enhancing and modifying the artifact. What did you learn as you were creating it and improving it? What challenges did you face?
    a. Enhancing this artifact showed me just how fast I was trying to get things done. Another issue that I had was trying to over engineer things. Instead of keeping things simple and breaking down the bigger task it seemed like I kept them all big. This added to the amount of time it took me to do this enhancement. This is one thing that I learned that I could get better at. Once I started to just set back and break each problem down and code different functions for those specific smaller problems then it all started coming together better and made for easier code to read.
    b. The challenges I faced were trying to figure out a more user-friendly environment. Because I had so many different things going on in 1 view it was up to me to decide how to break these things apart and what should stay and what should have it's own view. This is when I decided that a menu would be a good option for navigating through the application and it also gave me a chance to separate things.

By moving the graph I am able to enhance this view further with my Artifact 2 enhancement.

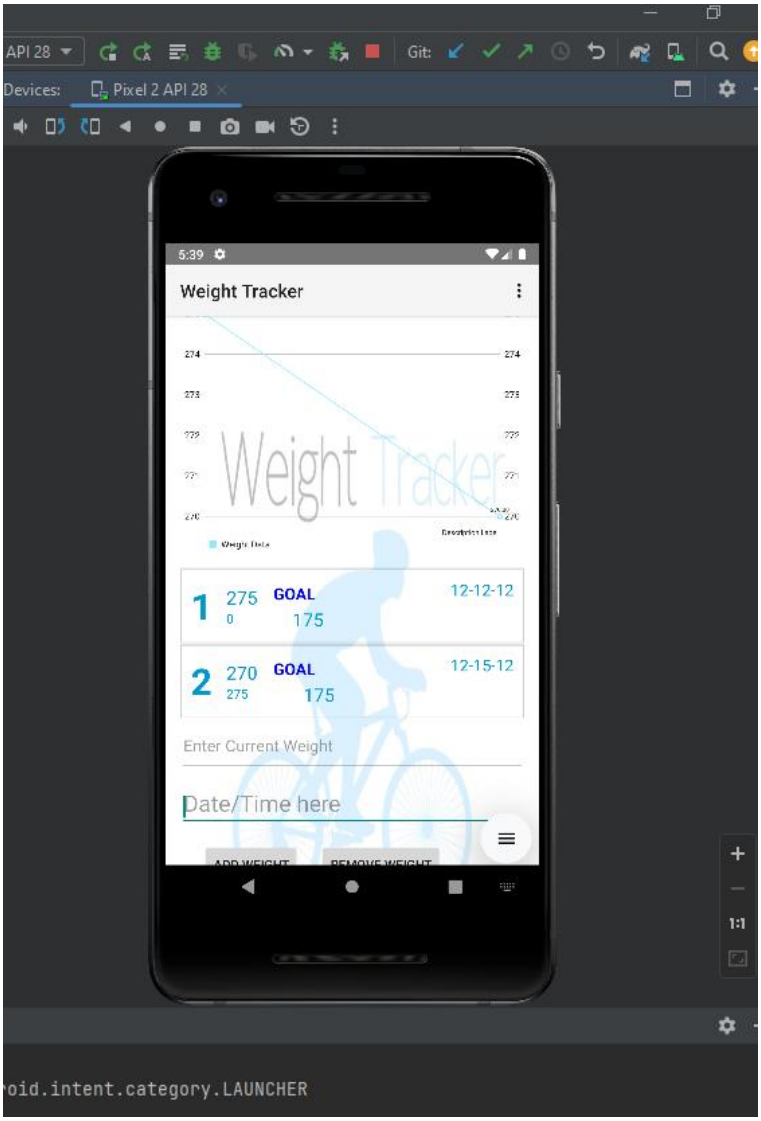
5. **Screenshots Before and After:**
    a. These show how the UI has changed from the simple 3 view screen to having the new menu added. This menu allows for me to have a Calorie Tracking view as well as adding the radio buttons to the graph view for my future enhancement.

Before:

Login Screen(View 1)



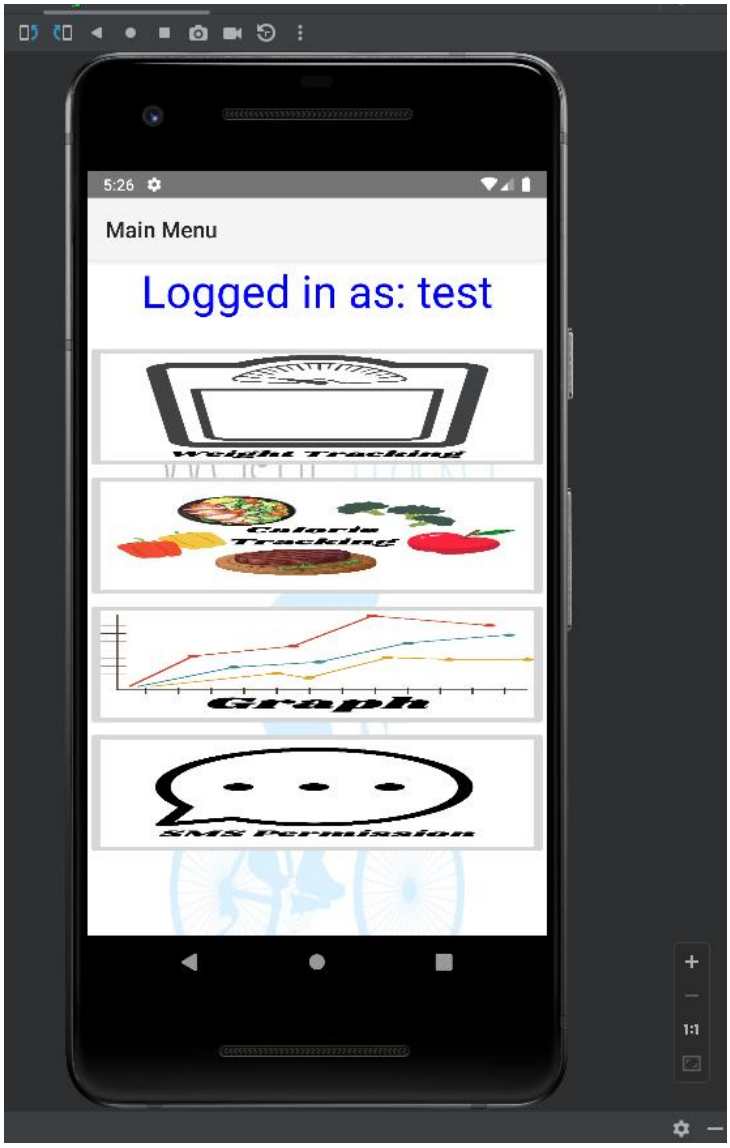
Weight Tracking View(With Graph):



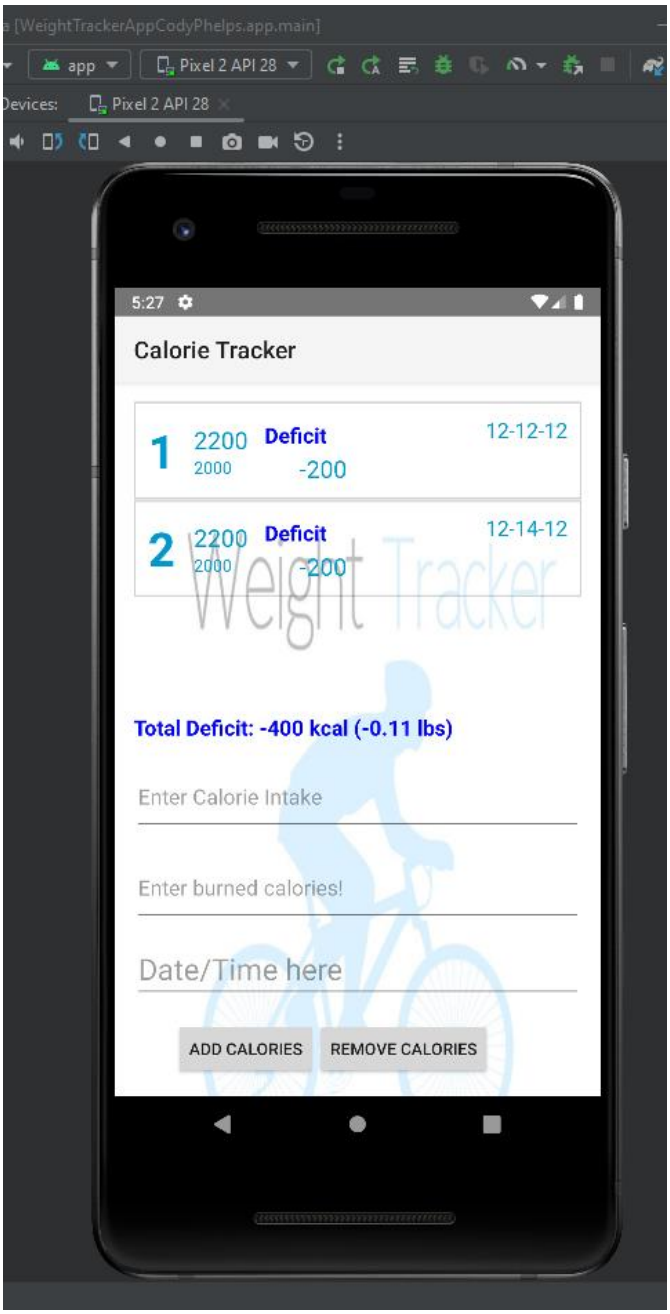
The before has a scroll view that makes it where the user needs to scroll if too much data is added to the recycler view.

After:

Main Menu:

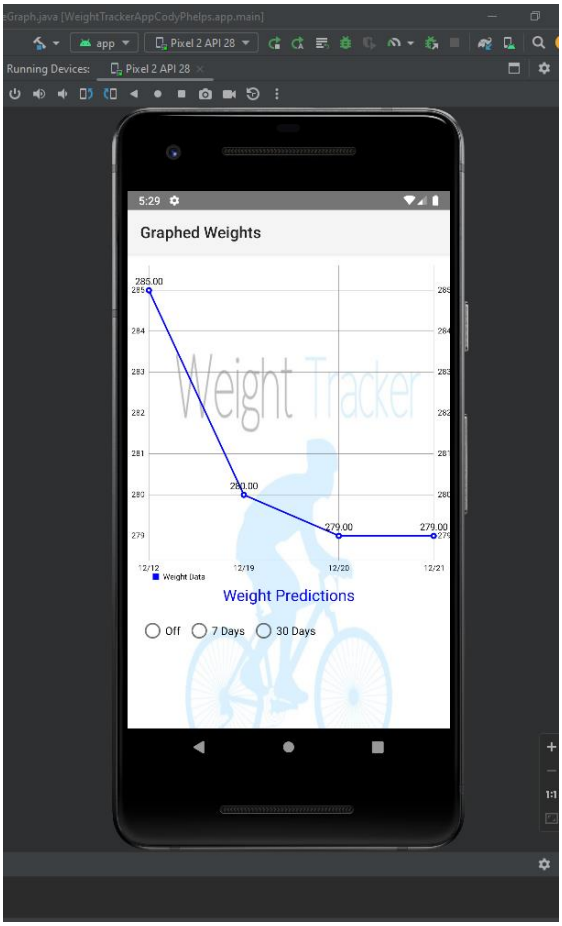


New Calorie Tracking View:



The recycler view will now only take half the screen up when more than 3 data points are added. This will allow for everything on the bottom half to stay put. This also displays the total amount of deficit and converts that into pounds.

New Graph View:



The graph view still takes in weight information that is inputted on the weight tracking view. The Weight predictions is added for Enhancement 2

New Weight Tracking view: