

Module 3 – Milestone Two

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I have chosen for category one, software design and engineering, to focus on an artifact from CS 360. The artifact from CS 360 was an android application that was designed to be an Event Planner. This Event Planner was coded in Android Studio using Java as the coding language. The Event Planner had basic functionality in the form of being able to create, edit, and delete events as well as display, reminded, and store those events. In order to complete such a task, the program made use of two databases, one for users and one for events. These databases were then used to complete the as for mentioned tasks. This project was started at the tail end of 2024 and reached its minimal viable product on 12/13/2024 with a few cut features that were not required for submitting.

The primary reason for choosing this artifact for my ePortfolio was to continue the original goal of the project. As stated during the process of developing the application a few features were cut to ensure that the minimal viable product could be delivered. As a result, I want to continue the design and engineering of the application to bring the project to a better closure point. Additionally, I wanted to gain additional practice in an unfamiliar environment of mobile development. I was able to through the creation of the daily planner portion of this artifact demonstrating my familiar skills of Java and stretch my knowledge mobile development. Additionally, I was able to expand my design and engineering through custom development of the daily planner fragment. This improvement not only greatly improves the functionality of the end product, but it also brings the application to a much better closure and feeling of completeness. When I looked at the application before I always felt it was lacking and felt very unfinished. Now I look at with a different opinion, I can see a full functional product that is ready for actual use.

The primary outcome I set out to achieve with this enhancement was to demonstrate my ability to use my techniques, skills, and tools to deliver value and accomplished industry-specific goals. This outcome was by far the most important to this, as stated I felt that the application did not reach those goals when it was submitted in December. Now I feel like it finally reached that goal, and it was done through the use of well-found and innovative techniques, skills, and tools. However, it was not the only outcome reach, I had the opportunity to correct a few minor details within the code during process. During the process I design, develop, and deliver clear visual improvement to the daily planner which will allow it to be easily understood while being technically sound for different audiences or context. An example of this was making the format of the daily planner easy to read, it follows the current time zone no matter where you are, and it informs the user of overlapping events. Additionally, during the review of the code I noticed many details that could be adjusted to better improve the application, specifically in the name of security. Some variables were left accessible to other classes, or as a field when they could have been more locked down. I went through and fixed though variables to help ensure that those fields do not get exploited. Overall, I was surprised that despite focusing on one outcome just how much I was able to relate parts of it to other outcomes and while it might not be easy to pick out all the details, I can say a majority of the outcome can apply in some capacity to the artifact.

In summary of this enhancement and modification of the artifact there are several things I had to face and learn. First, it is important to note that I have a decent background of Java experience with little to no mobile development practice. This means that while I understand the language itself and how it functions, I struggle with understanding it in a mobile development mindset. The very first challenge is that not a whole lot of people have made a daily planner from scratch. This limited my ability to research ideas as all I got was to use some library someone

else created. The biggest challenge was simply how do I make it look like a daily planner and how to make it updatable, scrollable, and editable. In the context of the Calendar view and Upcoming Event view I could use a recycler view to create a list of events. At first, this sounds like a great idea until I remember one key thing about a daily planner, events aren't in a list they are spaced out and resized based on when they start and how long the event lasts. With practically mobile development and only Java the thought of how to do in a JFrame was to just draw it overtop of the list came to mind. This ultimately leads me to my solution and how to research this topic, rather than look for a super specific example as a daily planner I looked into overlay graphics. I learned that the containers can be accessed almost like a list and that you can set the locations of objects inside those containers. Basically, these containers worked similar to JPanels which set the whole project and enhancement forward. From that point it was about getting the right constraints on everything and generating events correctly to fit in with the view. However, one more challenge needs to be tackled before I can call the project finished and that is design. With events being drawn in two lists allowing for two events to overlap and be displayed came the issue of making it look better than a handful of lines and boxes. I opted to overhaul them to improve the design and wrote custom XML designed background to improve the visuals. It took quite a bit of time to understand exactly how the XML designs worked and to be honest I overthought the details too much. As a result, I went simple but good looking. Overall, in the end I think the improvements came out very well given the limited time spent on it. I believe it really shows how far I have come in mobile development since December and shows how I can overcome challenges and improve on Software Engineering and Design.