# 494 Cumulative Reflection

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## Introduction

One of my favorite classes at ISU is CprE 288, in which we learn embedded C to control a miniature "mars rover" robot that needs to traverse an obstacle course and find the pickup spot that the imaginary space ship will pick it up at. In that course, specifically the final project, we were given an option to create a user interface for our robot to interact with during its traversal of the course. We were given basically zero guidelines for this interface, as it was extra credit.

During my time in the class, I created an interface in Java that allowed the robot to send back information that would be "drawn" on the computer screen where you were controlling it. You would be able to see in real-time what the robot was seeing, and watch how it made decisions to move around the course. Thinking about all of the possibile obstacles that the robot could run into, my team needed to elaborately brainstorm how to handle all of these cases the best way possible. Furthermore, while creating my interface, I needed to ensure that it both informative but also very easy to understand so that we spent time making decisions to move the robot, and not trying to decipher what our interface was telling us.

Overall, I think this single project from this single course taught me how to not only design a system, but also to consider everything that the system effects. The process of handling all of the obstacles cases, and then planning how to solve them could be applied to any real world problem. Ensuring the accessibility of my interface and all of the lessons going through that process could also be applied to the real world.

## ISU's Preparation

In most of my classes, I was given the opportunity to work on projects with a group as opposed to by myself, which I partook in. Most of these projects dealt with an issue/inconvenience that affected our lives today. For example, I took a Mobile Applications course, and one of the projects was to create a stopwatch. A pretty benign problem in our world, but for the sake of the example let's say that someone *really* needed a stopwatch app for their phone.

Before taking this course, I had never worked with Android Studio, the platform we used to develop applications for... Android devices. So creating our simple stopwatch app now has other issues to consider - I didn't know how to program for an Android device. This required me to scour the internet and search for syntax and examples on how to make such an application. Something that I kept in mind was to ensure that my app was coded using good standards, i.e. making sure that my code was written in a similar way to how regular Android applications were written. The source for these standards was, of course, Android's Open Source Project (AOSP) coding style guide.

At the end of the project, we had only made a simple stopwatch app that kept track of time, but understanding the use of the standards and a good coding style were a much more important purpose of the project.

## Outside the Class

I didn't participate in any academic extracurriculars during my time at ISU, but I did participate in a few "for fun" clubs. During my time in those, I met a number of people who shared my major as well as my interests, so being able to interact with them in an outside of school setting and then being able to work with them in an in school setting was very enjoyable. It was such that these friends weren't just limited to school; you actually went out and *did* things with them as well.

My point is that I've learned so many things from these types of people. New programming languages, new tricks, more efficient ways to solve a problem, and the best way to *approach* a certain type of problem. I've taken the things I've learned from these people and applied them to my own personal projects. I've completed a few personal projects over the last 4 years, but I've also started many many more. These projects more often than not deal with a topic brought up in conversation with someone that I wanted to explore in more detail.

## What Would I Change?

If I were given a chance to go back and change how my undergraduate experience went, I would *not* change it at all. I'm very happy with what I've accomplished over the years, and even looking forward to exploring some of the things that I have not accomplished in the future.