Ability to analyze a problem, and identify and define the computing requirements appropriate to its solution.

Analysis: executive summary, context, systems constraints, user constraints

Course managers wish to be able to sort through a database of student's and their schedules and find a way to move those courses to other open and available time slots. These slots must be a time at which the instructor is available and in a room that is open and has enough seats to fit the appropriate number of students for the class. We wrote a program to select the best open slots available, based on which slots were open that accounted for the most students with a priority placed on those students with higher classifications since those students would need the class more than than those with a lower classification.

According to specs we needed to parse data from a large csv of student records, and use that information to assess the best opportunities to move a class. Due to the large amount of data we decided to start by parsing the data into smaller csvs and then load those csvs directly into our database, which we then referenced to make the decision on which spots fit best in the schedule given a weighted priority of the classification of the students (graduate students>seniors>juniors>etc)

System requires mysql. Runs on Windows or Mac, so long as you can run programs from your command line and select the appropriate version.

User constraints include an updated and installed version of mysql, the csv of data you wish to parse, and a knowledge of the CRNs you wish to see moved.

Computing requirements: operating system, network connectivity, file system, user interface, security, deployment

As was specified by our client the application runs for both mac and windows. A version for each command line is included in the project.

This application does not require network connectivity of any kind beyond a connection to your database, which the application assumes to be localhost (IE the machine you're running it on).

Files relevant to the project are simply stored in the folder of the project, which is backed up through github. Any data fed to the tool is backed up in the database.

For an app that doesn't care about network connectivity, security is thankfully a simple consideration. The user submits data to the program at their discretion, so its security is mostly their choice. We didn't do anything that would make the data any less secure than it already would have been.

Interface is handled entirely through the command line. The only required input is the initial csv of data, and the CRNs of those that you wish to check the project against. It's somewhat simplistic, but the specifications did not include pretty.

The tool mostly handles its own initial deployment so long as you provide it with a zipped csv and procure the actual tool. It sets itself up on first run, which can take some time as it has to parse the csv and load it to the database. But so long as a zipped version of the csv is included in the appropriate place it will unpack it and get to work all on its own.

Ability to function effectively on teams to accomplish a goal

Individual contribution

Planning / Leadership

Our group held together quite well from the outset. We'd firmly established our relative roles over the previous project (at least as much as one defines roles in agile) and everything we practiced earlier held together over the course of this project solidly. We planned ahead better, establishing our commitments realistically for each demo and ensuring that we each contributed our fair share to see those commitments met.

An understanding of professional, ethical, legal, security and social issues and responsibilities

If we are to work on this sort of project as if we are professionals, then we must consider the various responsibilities that go along with this work. As software developers we have to understand the ethical impact of our codebase. Obviously ethical is not always the same as legal, so while you can understand the legal ramifications of your code (software contracts, domain considerations, information and so on) you still have to consider the impact on your customers. As we're handling actual data regarding course scheduling, the security of the data might be considered an ethical issue. Thankfully, as our app is not web enabled it makes it much simpler as we don't have to worry about intrusion or the like. Any data introduced to the system will be introduced at the user's discretion and nothing we do with the data will compromise its integrity.

Ability to apply design and development principles in the construction of software systems of varying complexity
Design process: UML, Data Modeling
Development Process: versions, testing, assertions, documentation

Versioning is handled by our github, testing has largely been handled by cucumber which also requires us to make assertions to make it clear that we passed said tests. Documentation is included in our github, including our database schema.