**TIMOTHY P. MCCLINTOCK**

**SENIOR PROJECT**

**PROFESSOR BALIGA**

**ROWAN UNIVERSITY**

**FALL2017**

**Contributions**

During this past Fall semester, I was invited to join the current team that I have been a part of throughout this project. It has been a challenge to complete, but a well worthwhile experience with many learning opportunities along the way.

Initially, we had not known exactly what we were going to make. I scheduled meetings with various CS Professors at Rowan University in search of opportunities to build something meaningful. We listened to a couple of presentations regarding other opportunities available, but in the end, we were still uncertain. There had been no prior planning in anticipation of this class and we all knew that we wanted to do something unique. After brain storming and establishing common ground, we determined that we wanted to help people, create a social web tool, and connect Engineers across multiple universities in a web-based application. It was my first contribution, to *propose the idea* that was a collaboration of these things. I set up a vote on Slack and after the poll results were collected an idea for a Software Engineering Toolkit was selected as our primary goal.

We then established roles and it was determined that I was to be the teams Scrum Master. We established meeting times and milestones. I drew up the collective groups ideas for how we would build this project to scale and began architecting, alongside Krunal, *the initial technical specification*. I kept *notes for each meeting* and tried my best to maintain group focus and posterity during meetings. Although, this sometimes had meant searching for wandering team members, dealing with agitated students in public lab areas, and discussing designs to nearly empty study rooms.

Another contribution was helping Yousuf *to initialize and setup a team GitHub* by showing him how to create a new useable repository. It became my responsibility to *constantly maintain the repository to ensure that the files were tested, the repository was organized, backups were version controlled and stored, and that all source code was the most up-to-date*.

From *preparing and submitting the technical specification* I moved to *work on our Design document*. I contributed *the ideas for a structural file system* that had simple folders (for example a ‘js’ folder to store the scripts and a ‘php’ folder for storing our primary code.), as well as implementing the W/L AMP full stack. I described the flow between all the primary components and the team agreed to use Windows/Apache/MySQL/PHP implementation. During the Design phase I contributed flows with Krunal that *mapped exactly how the logical succession of pages would be traversed and generated site maps and descriptions for each of the endpoints.*

Throughout the early stages it became my ambition to *investigate Content Management Systems and API implementation* as well as capturing the functions from our code. Among the CMS’s and API’s I investigated, include: Drupal, Azure, Flask, Angular.js, node.js, and AWS. Eventually, upon the suggestion of Professor Baliga, *I created an EC2 instance for AWS and launched the Backend which hosted the program*. Although the AWS server was a greater technical success of mine I eventually lost the battle for separating our code into a neater file structure with separate function folders for a tighter API.

For each demonstration I always *helped the team prepare in advance by running through our presentation and making sure any persistent issues were corrected quickly.* I *tested and challenged all code* that did not meet a common group standard for our definition of done. Often code was changed last minute or created without regard for design and I made it a personal mission to run the code on various operating systems and browsers to exploit issues and bugs as well as to emphasize these issues at our weekly meetings. Although, much of the time I spent *troubleshooting*, my working coding usually would go to the wayside because code was frequently overwritten, changed, or was withdrawn from the repository before I could commit. So, instead of replacing ideas and arguing over code (becoming what I perceived to be part of our team’s greater struggles next to breakdowns in communication), I chose to instead learn rigorously the code that each member wrote, how it worked, and what we needed to continue doing moving forward from a high-level perspective, in order to maintain purpose and trajectory. Some strategies that *also failed were our teams Trello board and planning meeting agendas*. When the team would show up they would often ignore or eschew proposed ideas for project organization and so to keep structure the *GitHub and Slack tracking became my focus*. Even when members expressed apathy toward organization by stating that there was too much work, or that Trello was a foreign concept therefore a waste of time, I persisted *to track and influence design updates by maintaining our design document* and *specific inner group progress*. For example, a member of our designated database team, Roger, and I would discuss MySQL database endpoints and table queries in the php code. Roger would explain what his code can do, and I would discuss what the members of the rest of the team had decided at previous meeting regarding the overall design and feasibility, so that I could bridge any gaps. I also constantly worked, as best I could, on *troubleshooting efforts to synchronize each team members’ development environment. For integrity purposes, this was important to ensure that we were all creating an independent standalone project that could be hosted on a server full-stack environment*.

As a group communicator I *scheduled assessments when needed and team meetings, tracked our schedule, and acted as an intermediary to interface Professor Baliga*. Many times, the messenger is a difficult position. There was no exception in this team. Any questions the team would raise I always answered, occasionally to great length, and often the same question over and over (and over … ) again.

Overall, my team contributions sometimes led to dead ends. Sometimes my team contributions were overshadowed. But by the end I see the impact. After reaching out to other Students who have taken Senior Project I understood that what I was doing was unique. It was significant to me. At times there was conflict and at other moments great triumph. My team and I came together as almost complete strangers, to create a project that reflects core value cultural imperatives. We were skeptical but bold. Uncertain, undirected, but relentless. Each of us did exactly what was needed of us when it was needed to create a finished product. This on occasion meant taking a seat to others, standing up for one another, and sometimes allowing others to take the lead. The project I believe could be so much better than it is, and I know that if we all worked harder and had more time it would be. My team took what we had from the very moment of our inception and strived to make it work. We did. This to me is the greatest achievement of all.