Project Conclusion Statement

June 4, 2014

for

PlasmaGraph

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The PlasmaGraph project has been an enlightening experience for both members of the Plasma Visualization Group for a great many reasons. We have been tested in almost every step of the completion of this project, and, although difficult, has been an incredibly enlightening process. We have learned about the many nuances of managing and participating in an actual project – one with actual purpose, unlike what most classes usually provide. Chief among all these lessons is the following key point: Think smarter, not harder.

This point is very simple, but it can shape how your project flows. The following will detail some of the situations in which we would have been benefitted in doing so:

- Our project's requirements (its features) were continually changed, making it difficult to create a clear goal for the completed product. We should have used the initial vision as the goal, and required a clear and concise set of requirements before even beginning the first phase of the project. That way, we could have defended our decisions more clearly and avoided some of the more drastic requirement changes, thus saving time and effort. Instead, our flexibility in implementing a general idea became a time sink.
- We also found problems in communication and coordination between multiple groups of people. We should have been strict in the amount of time spent in coordinating meetings with these people; instead, we wasted many weeks either waiting for information or testing personnel.

Apart from "Think smarter, not harder", we have gained very valuable experience in dealing with many kinds of problematic situations. Wasted time led to either schedule extensions or rushed work, and both were damaging to the team's morale and the final product.

It is important to note that, despite a number of negative situations that we have learned how to deal with, we have also learned a lot about creating synergy within small groups. Despite our bad moments being very bad, our good moments were just the opposite. We have a much better understanding of how to use and manipulate team morale, and how to properly use that motivation to lead teams to better productivity together. Both proper delegation and a good knowledge of each member's boundaries, along with small, quickly-reachable goals, form the equation to motivate small teams like ourselves, and we hope to use this knowledge in our

future endeavors. These are components of well-used software engineering project management paradigms such as Agile, but it is important to note that, by themselves, they can often provide a greater increase in motivation and productivity than along with some of their other components. Furthermore, robust, automated testing is an equally-important necessity of any project, and more so when the project grows. Our project suffered slightly in testing as we found ourselves expanding the scope, and a reorganization of our automated testing would have made bug testing more efficient.

Finally, it is important to mention that the final key to a successful project is for every project member to be sure in what they do at all times. The phrase “Indecision kills” lingered in our minds at times as we found ourselves pressured into certain situations throughout this project. This ties in with the mantra “Work smarter, not harder”, as the smartest course of action would have been to respond decisively to some of the more problematic situations we encountered.

Regardless of our misgivings with how the project was handled and the inflated schedule, we enjoyed the challenge this project presented us, and will continue to seek similar challenges, now that we have learned so much from this.

We are also grateful to a number of people who have aided us throughout this project. With regards to the university professors, we thank Professors Luis A. Ortiz, Angel Gonzales-Lizardo, and Claudia Talavera, as well as the PUPR Plasma Laboratory, for participating in this project either directly or indirectly. We would also like to thank the Polytechnic University of Puerto Rico’s general staff for providing a number of hardware and location resources which we used throughout the project. Finally, we must thank our families for having supported us throughout our university years.