

Original Design Problem:

The original design problem for this project was to create a 3D visualizing LED cube to display various animations. The design problem involved using embedded design and user interface design. This project is more tailored toward aesthetics and being able to display something impressive and mesmerizing, rather than a specific problem to be solved or need to be met.

Design Process:

The design process began with creating additional engineering requirements as a goal to achieve by the end result. The next major phase in the design process consisted of the group creating a block diagram and associated interface definitions of the entire system. These artifacts were frequently changed as more research was done. Following this the group created a timeline that outlined the approximate completion of each phase for the project. During the design phase a majority of the time was allocated to research. However, the group also acted on working towards the completion of major blocks asserted in the block diagram. The group then entered the build phase which consisted of integrating blocks together and ensuring that they all communicate properly. The final phase was to check all major requirements were satisfied and perform troubleshooting for minor bugs. Throughout this design process, only a few major revisions were made and the group facilitated these changes effectively by frequent meetings to discuss both minor and major problems/changes. With frequent meetings, the group was able to consistently make progress and help each other on all aspects rather than being focused solely on our own implementations.

Project Timeline:

ECE342 Big LED Box Timeline

[illegible]

Lessons Learned:

- Be sure to work into the timeline a large block of time for Debugging and Test Failure. More time than expected was spent on re-doing tests and debugging unexpected issues.
- Making a weekly To Do List from early in the design process would have helped more than the progress reports. We created a to do list towards the end of the project which helped track things more than the weekly progress reports did.