Project Recap
Kanban Simulation Project

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Sponsored by David Consulting Group (DCG)

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Our goal in this project was to implement a GUI based Kanban simulation/board game which will facilitate the gathering, processing, and presentation of data relevant to data analysts and consultants. While software does exist to help with some of these tasks, none span the set of features we aimed to implement. With our set of software, the intention was to enable users to create customizable Kanban simulations, play the Kanban simulation as a means of teaching/learning the Kanban software development methodology, and create comprehensive graphs based on simulations.

The ability to play the game was primarily a stretch goal, and the main focus of this project was to implement the simulating aspect with graphs and data that could be output to the screen, as well as a log at the end of the simulation. The approach we decided to take with this project focused on using the agile methodology to complete portions in a timely manner. Agile has proven to be a very effective software development method for not only building high quality software but also ensuring that the tools are useful and of high value to the customer. With our small team size and customer’s high interest in being a part of this project throughout development, an Agile approach fits in nicely. We used small two-week sprints because of the short time span of the project. At the end of each sprint we showed working software to the customer, reviewed all of the tasks that were scheduled for that sprint, and planned the tasks for the next sprint. We also had daily standup meetings and sprint retrospectives to make sure our development team was communicating properly and was constantly improving on their work. We spent the majority of our time creating a robust user interface, and then the remainder improving the simulation, and making it as customizable as possible; we tried to implement as many ways as possible for our customer to create their own scenarios. Graphing output was made to run alongside the simulation for informative data. We also implemented a feature for the user to either run the entire simulation all at once, independent of the user interface, or day by day with visual information given to the user.

The project utilized several third-party software suites; specifically Sublime Text/Brackets, Amazon Web Services (AWS), Trello, GitHub, MySQL, Phaser, NodeJS, and HighCharts. While each of the open source tools has its own license, they all allow the commercialization of products that make use of them. Except for HighCharts. HighCharts requires specific licenses for certain types of proprietary use.

In the end, we succeeded in completing our goal of creating a simulation for the Kanban game that David Consulting Group gave. We had hoped to complete some of our stretch goals, but only succeeded in completing a few. Primarily, we had hoped to deliver a playable game version of the Kanban board game, but were only able to set the groundwork for a playable version. For the most part, the important part of actually completing the board game part of this project was to give users a way to visualize the game and see it step through the process of moving work items across the Kanban board. Since we included a feature for stepping through the simulation day by day, using the simulation as a learning tool is still quite easy and the purpose of playing the game (learning the Kanban methodology) can still be fulfilled. The product we delivered overall was not something that one might be considered “shippable.” If anything, the level of completion that this project reached was something closer to “prototype.” There got the most important things working as best we could, but there were almost certainly issues that needed to be resolved. For instance, on the main menu there were still placeholder buttons that didn't have meaningful labels. The user interface for admins was still a little rough looking. Just in general, there were little issues that have to be ironed out before this project becomes shippable. But, fortunately, we were not tasked with making a shippable product.