**Updated CPS353 Software Engineering Proposal**

**Group Details**

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| Group Number | Simulation 01 |
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| Date | 10/08/2021 |

**Proposal Details**

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|  | Item | Description |
| *1.* | ***Project*** |  |
| 1.1 | Proposed Project Title | Digital Circuit Prototyping Simulator |
| 1.2 | Summary | Accurately simulates logic gates on a functioning breadboard. Eventually expected to be used in conjunction with the Digital I/O board Simulator. For use as a tool in Computer Engineering courses. |
| *2.* | ***Target Audience*** |  |
| 2.1 | Field | Simulation for Educational Purposes |
| 2.2 | Age Group | 17 and up. College and beyond |
| 2.3 | Rating | G |
| *3.* | ***Features*** |  |
| 3.1 | Useful Features | Fully functioning breadboard with three functioning IC Chips: AND, OR, NOT, as well as wires and an LED. Furthermore, this should result in the development of a finished product, allowing for an entire user experience.  Additionally, a Digital I/O board commonly used for instructional purposes has been taken out of production making it difficult and expensive to obtain for students. To fill this demand, there is a simulated version in development. These logic gates should be able to connect to the simulated I/O board to help build a fully functional simulation environment. |
| *4.* | ***Software / Languages*** |  |
| 4.1 | Software | Unreal Engine, Blender, Visual Studio Code, Visio |
| 4.3 | Purpose of languages / software (mentioned above) | * C++ used for basic logic and processing * Blender used for building 3D models * Unreal Engine used for environmental simulation * Visual studio code for integrating C++ and unreal engine * Visio for flow charting |