Introducing CUmakeit

**Clemson University’s Capstone Team Releases Innovative Software for the Makerspace**

***Now Users can Sign in With the Tap of an ID, and Employees are Able to View Important Data in Seconds***

Today, in collaboration with AWS, Clemson University’s Capstone team announced the release of CUmakeit. CUmakeit is a revolutionary system designed to facilitate a stress-free and productive environment for the Clemson Makerspace by implementing a dashboard-based management system which lets Makerspace employees see vital statistics such as user certifications and machine data. As a valuable asset to over 800 Clemson students every semester, the Makerspace fosters innovation and creativity by providing high-tech equipment such as 3D printers and laser cutters for Clemson students to use for their school or personal projects.

Prior to the release of CUmakeit, Makerspace employees struggled to effectively gather crucial data used for their funding proposals, the student-run organization’s main source of income. The old system required employees to consolidate data from multiple third-party systems, and manually entering the data into excel in order to create meaningful reports. This process required having a good understanding of platforms such as Canvas, OctoPrint, and SQL, which was difficult for employees of non-technical backgrounds, and an overall tedious task. Maintaining safety for everyone who uses the Makerspace is also a massive priority for Makerspace employees, but manually searching through the Canvas page to check and see if a user was certified for a machine was difficult to navigate.

CUmakeit’s dashboard system provides an easy-to-use interface for employees which contains data from Canvas, OctoPrint, and their SQL database. With CUmakeit, after a user signs into the Makerspace, they show up on the administrative dashboard where employees can view their machine certifications, as well as information such as how long they have been in the Makerspace, their last visit, and more. The administrative dashboard also features statistics for the 3D printers in the space, obtained from the OctoPrint plugin. This includes information such as print job progress, the temperature of the machine, the file being printed, filament usage, and more.

Yan-Jing Ni, President of the Makerspace, says “With the new administrative dashboard introduced by CUmakeit, our jobs have never been easier as employees. It’s so much easier to see who is in the Makerspace and what certifications they have, which helps maintain the safety of our space. I don’t have to spend all day trying to go through five different systems to try and get the information that I need. This has made our job checking in students and gathering data for funding proposals exponentially faster, and now our employees of any technical background are capable of finding what they need.”

CUmakeit also provides improvements to the Makerspace’s user experience. Using the old system, it took too long for students to sign into the space. Users had to manually enter their username, print logs were often missed because it required students to visit another station and manually input print information, and the only way to see what machines were available was in person or through the registration page. These problems not only made the space less efficient, but also resulted in a lot of key information about print jobs and material usage being lost.

CUmakeit introduced multiple new technologies in order to solve the users’ problems. To speed up the sign-in process, a CUID scanner was placed at the sign-in station, so students can now sign in with the tap of their ID. The need for students to manually enter information into the print logs has been eliminated, as this has been automated using OctoPrint, so that no valuable information will be omitted from the logs. The new user dashboard displays the user’s certifications, previous print jobs,and available machines, all in one place.

“As a student who frequents the Makerspace, the new system they have implemented has greatly enhanced my user experience, and has made the space much more efficient. The CUID scanner makes it quick and easy to sign in, and the user dashboard is a great feature where I can see everything I need, all in one place. I used to have to manually log everything I was going to print, but now that is automated and it makes my life easier,“ says Amy Lin, a mechanical engineering major at Clemson who often uses the 3D Printers for school projects.

See how CUmakeit helped to improve the Makerspace by visiting their locations at the Watt Center or at Cooper Library today!