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Online Monitoring and Control of 3D Printer with Open Source Software and Embedded Systems

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OctoPrint is a powerful open source 3D printer software what user can control and monitor printing jobs with its own online server that suitable for remote and isolated work. The Raspberry pi 3 B+ is hardware for installing Octopi that including Raspbian operating system and OctoPrint software. An USB webcam was connected for live viewing of printing processes and the ESP32 microcontroller with filament runout sensor was communicated to Raspberry pi 3 B+ for notify user when filament was runout or back to work resume through LINE mobile application. The Google Calendar and LINE mobile application were used for jobs booking of multiple users that will notify before and after finish printing for each user. The Power relay circuit was used for shut down the Raspberry pi 3 B+ when complete printing to save energy and electricity.

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