

ABSTRACT

The development of the food and beverage industry is one of the prioritized sectors so that technology that supports this development is also prioritized in development. Progress towards digital transformation has a positive impact on increasing investment and productivity in the industrial sector, thereby increasing the workforce significantly. This is also encouraged by the ministry of industry so that the domestic beverage industry can compete globally. But in the process of filling water into bottles in industry there is still a manual process.

In the research carried out, a tool has been designed that can fill water into bottles automatically which is controlled by PLC (Programable Logic Control). By utilizing the HMI (Human Machine Interface) users can communicate with the PLC as well as control and monitor the process of running the system directly. Using the State Diagram control system as a method for program design for PLCs. The designed system can automatically fill bottles of 1500 mL, 600 mL and 330 mL sizes. In addition, the system can be controlled manually to fill bottles according to the desired volume. The results of bottle filling reach an accuracy of up to 96% of the volume, accuracy for bottle stop automation in position is 76.7%, and HMI can control and monitor the process of running the system properly.

Key word: *PLC, HMI, automatic, state diagram, water filling*