Since the two-interacting tank is generally applied to support a wide variety of chemical industries, there is a great deal of interest to propose the control study of this process. The typical control system to study the process control strategies was designed in this work. This system consists of two identical size tanks coupled together. The liquid from the source tank is only fed into the first tank. The function of this tank is to heat the liquid. Then, the outflow of the first tank flows into the second tank placed on the same level. Finally, the outflow from the second tank flows back to the source tank. Decentralize control is played a major role for this process operation. The controlled variables were defined by the level of two tanks and the temperature of the first tank. Two modes of control; the automatic control and the computer aid control, are constructed for the proposed rig. In addition, the remote control via internet was developed and implemented. In order to develop the control panel, Laboratory Virtual Instrument Engineering Workbench (LabVIEW 8.0) program was implemented in order to monitor the process measurements and to control the process. Graphic User Interface (GUI) was also generated into web-based style. All GUIs consist of one tank and two-interacting tank control. Four algorithms; Proportional Integral Derivative (PID), Internal Model Control (IMC), Generic Model Control (GMC) and Fuzzy Logic Control (FLC) were applied to study the dynamics response. Servo-problem and regulatory problem were used to verify all control algorithms. The results showed that all controllers provided satisfactory close-loop response, but with different rising time and slightly Integral Absolute Error (IAE).

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