

ABSTRACT

Flood has been a yearly disaster in DKI Jakarta. Every year, DKI Jakarta Government suffers big material loss besides human victim because there is no monitoring system and early warning system for this disaster. Government of DKI Jakarta has done a lot of efforts to solve this problem, for example using water gates as a flood indicator. But, all of water gate in DKI Jakarta still uses a manual way to observe and report about water gate condition. The manual way like this is very susceptible with human error factor, besides the natural characteristic of disaster that always suddenly comes. For that reason, in this final assignment, a monitoring system for water gate and early warning system for flood has been designed that can help the Government of DKI Jakarta to solve the flood problem. The Monitoring system uses automation technology and the early warning system uses Short Message Service (SMS) to deliver the flood warning.

In designing system, there are five general steps to solve the problem. First is initialization step that include problem solving formulation, goal of the research, and problem limitation. Second is Information step that include literature study and field study that analysis of existing system. Third is creative step, the step where for designing system. Fourth are testing and analyzing step. Fifth are conclusion and suggestion step for the next research.

This final assignment is divided into several chapters. Chapter I concerns about background, writing target, goal of the final work, and the problem definition. Chapter II contains the literature study about information system, GSM technology, Water gate system, and automation system. Chapter III concerns about the conceptual form about the system therewith the problem formulation for this final assignment. Chapter IV is the core of the solution from this final work concerns the analysis of existing system and designing new system that is made, and continues with the system analysis at chapter V. Last chapter is chapter VI, contains conclusion and suggestion from this final assignment.

In designing process, Existing System Identification has done to know the entire thing that used in designing system. Then, designing process is continued with designing system that consist of designing automation scenario, system modeling, hardware software designing, and define the result scenarios test that used in next phase. The result after designing process is a water gate monitoring system and Flood early warning system that can do all the automation process, consist of water height monitoring and sending SMS notification if flood will come. From the research that has been done, it may be conclude that by implementing this system, user in this case is Government of DKI Jakarta will be easier to solve the flood with all suffer because of this disaster.

Keyword : Programmable Logic Controller (PLC), GSM Modem, Short Message Service (SMS)