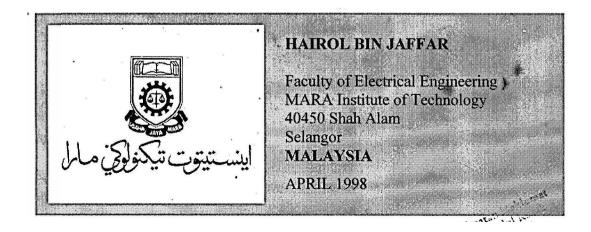
## ENHANCEMENT OF WATER LEVEL CONTROL SYSTEM (SOFTWARE DEVELOPMENT)

Thesis is presented to fulfill the requirement of Bachelor Engineering (Hons) Electrical

MARA Institute of Technology



#### **ABSTRACT**

Automatic Control System has played a vital role in the advance of engineering and science. In addition to its extreme importance in space-vehicle systems, misslile guidance system, air-craft-autopiloting systems, robotics systems and the like, automatic control has become an important and integral part of modern manufacturing and industrial operations as controlling pressure, tempureture humidity, viscosity, flow in process industries and controlling liquid in specific tank.

Since advances in the theory and practice of automatic control provide the means for attaining optimal performance of dynamics system, improving productivity, relieving the drudgery of many routine repetitive manual operations, and more, most engineers and scientists must now have a good understanding of this field.

For this thesis, the main objective is to make the system in the plant fully controlled by computer. Thus the computer is now easy to use and available in the low cost of price, its become one of the powerful tool in control system applications. The PC will be a major element in this project and supported by PCL-812PG card as a interfacing card and Turbo C as a programming language in this application. All the setting and theory are provided in this thesis.

#### ACKNOWLEDGMENT

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# WATER LEVEL CONTROL SYSTEM (SOFTWARE DEVELOPMENT)

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### 1.1 Water Level Control System.

In recent years, digital computers have been playing an important role in the analysis design and operation of control systems. The computer may be used to carry out necessary computations, to simulate a plant or system components, or to control a system. Computer control has become increasingly common and many industrial control systems utilize digital controllers.

Let me define some definition before further explaination:

- System ~ A combination of components that act together and perform a certain objective. A system is not limited to physical ones. The concept of the system can be applied to abstract, dynamic phenomena such as those encountered in economics. The word system should, therefore be interpreted to imply physical biological, economic and the like, systems.[1]
- Plants ~ A piece of equipment, perhaps just a set of machine parts functioning together, the purpose of which is to perform a particular operation.[1]
- Controller ~ Produces control signals based on the difference between the reference input and the output. In general, a good control system must follow the command input closely, but must not sensitive to external noises and parameter variations.

Figure 1.1 shows the schematic diagram of a water level control system in this project. Here is the automatic controller (called specific operation in this project) maintains the liquid level by comparing the actual level and correcting any error by adjusting the opening of magnetic valve.