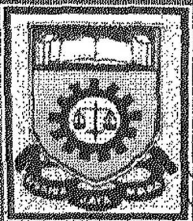


# WATER LEVEL CONTROL SYSTEM

Thesis is presented in partial fulfilment for the award of the  
Bachelor of Electrical Engineering (Honours)  
INSTITUT TEKNOLOGI MARA



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## **ACKNOWLEDGEMENT**

I would like to thank my supervisor, Prof. Madya Dr. Yusof Bin Md. Salleh for his guidance, suggestions, and corporation from the beginning and until the thesis is completed.

I would also like to express my gratitude to Dr. Anuar Ahmad and Dr. Ibrahim Mohd.Arif for their time and effort in proofing this thesis.

Appreciation is extended to Encik Kamal Zulhairi Bin Zamli for his courtesy allowing me to manipulate his demo mouse function program using Turbo C.

## **ABSTRACT**

Industrial automation is the key to the productivity and to improve quality in industry. In order to co-ordinate large components in the process control system, interactive manufacturing process, computer control is often needed. The availability of low cost computational power (in the form of microprocessor) has created a wide variety of applications for that power.

In this thesis, the main objective is to make the pilot plant to be fully controlled by computer through the I/O Interfacing Card. Water level is the process variable. The system is designed for liquids (particularly water) at atmospheric pressure in non-hazardous area and can be applied for industrial process and home used.

The overall system gives a closer look and understanding about the real process plant using direct digital control scheme.

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# CHAPTER 1

## INTRODUCTION

### 1.1 Introduction

The ability to control the industrial processes by computers has brought about not only new opportunities but also challenges to engineers. The requirement in terms of response time, computing power, flexibility and fault tolerance are stricter than in the field of commercial or scientific computation, since the work is to be carried out in real time.

Digital computers are playing an important role in analysis, design and operation of process control system. Computer control system has become increasingly common and many industrial control systems utilize digital controllers. The computer may be used to work out necessary computations, to stimulate the plant or system components, or to control a system. The rapid progress in this area requires specialization and teamwork in order to produce a form of synergy. Computing power and signals transmission speed also make a real time monitoring possible.

In the industrial process control, the applications of computer control system are typically classified under the following categories:

- batch processes
- continuous processes

Batch is used to describe processes in which a sequence of operations is carried out to produce a quality product. The sequence is then repeated to produce further batches. The specification of the product or the exact composition may be changed between the different runs.

An important measure in batch production is 'set-up' time (or changed over –