UNIVERSITI TEKNOLOGI MARA

USER INTERFACE DESIGN FOR OPEN AND CLOSED LOOP CONTROL SYSTEM

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In the name of Allah, the Beneficent and the Merciful

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ABSTRACT

The purpose of this paper is to develop user interface design for open and closed loop control system. The development of the system is accomplished via G-programming language potentialities of LabVIEW™ version 2011 running on ACER Intel Core™ i5-6200U 2.3GHz with Turbo Boost up to 2.8GHZ, 8GB DDR4 computer with Window10 Home operating system. This system is designed as a teaching and learning aid for the air pressure control trainer model SOLTEQ SE121 which installed at the Process Control Laboratory, Faculty of Electrical Engineering, UiTM Shah Alam. The system developed will help students to understand more about open and closed loop control system.

Keywords- LabVIEW; User Interface Design; Open Loop; Closed Loop; Control System; Zeigler Nichols

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CHAPTER 1

INTRODUCTION

1.1 PROJECT BACKGROUND

Process control can be defined by which task done by industries to produce desired output by regulating the input along the process. Basically, major process control can be found in all complex system such as mechanical, electrical, chemical or even biological. It also can be found in continuous production industries that produce mass production of consistence product such as paper production, oil refining, steel manufacturing, power plant and many more.

In this context, computer is used to regulate the process to achieve the desired output. Corrective action can be done when all the values is compared with set-point data through feedback system which resulting the error, and necessary output result is displayed on the system [1]. The important main components of a control system are sensors, a controller and a final control element which seeks to maintain the measured process variable (PV) at set point (SP) of unmeasured disturbances (D) [2].