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Automatisation in programming of a PLC Code

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Abstract

A competitive edge is one of the requirements of a successful business. Tools, which increase an engineer's productivity and minimize cost, can be considered as a competitive edge.

The objective of this thesis was to design, create, and implement Automatic PLC Code Generator (APCG) software. A secondary objective was to demonstrate that the use of the APCG software will lead to improved project efficiency and enhanced profit margin.

To create the APCG software, the MS Excel and Visual Basic for Applications (VBA) programs were used as the platform. MS Excel sheets were used as a user interface, while VBA creates the PLC code from the information entered by the engineer. The PLC code, created by the APCG software, follows the PLC structure of the Realcold Milmech Pty. Ltd, as well as the research "Automatic generation of PLC code beyond the nominal sequence" written by Guttel et al [1].

The APCG software was used to design and create a PLC code for one of the projects undertaken by Realcold Milmech Pty. Ltd. By using APCG software, time to design, create, and test the PLC code was improved when compared to the budgeted time. In addition, the project's profit margin was increased.

Based on the results of this thesis it is expected that the APCG software will be useful for programmers that tend to handle a variety of projects on a regular basis, where programming in a modular way is not appropriate.