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Table of Contents

1 INTRODUCTION ..........................................................2
  1.1 OVERVIEW OF THE PROBLEM .......................................2
  1.2 PROPOSED SOLUTION ................................................3
  1.3 THE OBJECTIVES OF THE THESIS ...................................4
  1.4 SUBSEQUENT CHAPTERS ............................................4

2 THEORY ...............................................................................6
  2.1 HISTORY OF THE PROGRAMMABLE LOGIC CONTROLLER (PLC) ....6
  2.2 LITERATURE REVIEW ..................................................8
  2.3 RESEARCH QUESTION AND HYPOTHESIS OF THE THESIS ....10
  2.4 SUMMARY ..............................................................11

3 METHOD .............................................................................13
  3.1 PLC PROGRAMMING STRUCTURE ....................................13
    3.1.1 PLC Program - The Body ........................................14
    3.1.2 PLC Program - The Brain ........................................28
  3.2 RSLogics5000 FILES ....................................................32
    3.2.1 ACD File ................................................................32
    3.2.2 L5k File ..................................................................33
    3.2.3 Programming the L5k file .........................................37
  3.3 VISUAL BASIC FOR APPLICATIONS (VBA) PROGRAMMING ...38
    3.3.1 User Interface ......................................................39
    3.3.2 Visual Basic for Applications (VBA) programming ..........42
  3.4 TESTING OF THE AUTOMATIC PLC CODE GENERATOR (APCG) SOFTWARE 44
    3.4.1 Real Life Projects ................................................45
    3.4.2 Measuring the effectiveness of the APCG software ..........49
  3.5 SUMMARY ..............................................................53

4 FUNCTIONALITY OF THE APCG SOFTWARE ..........................55
  4.1 DIGITAL INPUT SCREEN .............................................56
  4.2 ANALOGUE INPUT SCREEN .........................................59
  4.3 DIGITAL OUTPUT SCREEN ...........................................60
  4.4 ANALOGUE OUTPUTS SCREEN ......................................61
  4.5 PLC INTERNAL AND I/O DATA BASES .............................61
  4.6 FLAGS AND SCADA/HMI SCREENS .................................63
  4.7 CONTROL PAGES ..........................................................64
  4.8 CONTROL FORM ............................................................67
  4.9 SEQUENCE PAGES .......................................................72
  4.10 FUNCTIONALITY OF THE SEQUENCE PAGES ..................75
  4.11 SUMMARY ..............................................................77

5 THE APCG SOFTWARE – REAL LIFE PROJECTS ......................78
  5.1 PROJECT BUDGETED COSTS ........................................78
  5.2 REAL LIFE PROJECT ...................................................85
  5.3 COST IMPLICATIONS ....................................................87

6 DISCUSSION ..................................................................90
  6.1 RESEARCH CONTRIBUTION ...........................................90
  6.2 LIMITATIONS ...............................................................92
  6.3 IMPLICATIONS ..............................................................92
  6.4 FUTURE RESEARCH .....................................................93

7 CONCLUSION .....................................................................94
8 REFERENCES .......................................................................................................................................................... 95
9 BIBLIOGRAPHY ...................................................................................................................................................... 97
10 APPENDICES ....................................................................................................................................................... 99
   10.1 APPENDIX A: AN EMPTY L5K FILE ........................................................................................................... 99
   10.2 APPENDIX B: L5K FILE INSTRUCTIONS ...................................................................................................... 104
   10.3 APPENDIX C: PLATE FREEZER PROJECT PLC I/OS LIST .............................................................................. 110
   10.4 APPENDIX D: CD CONTENT ............................................................................................................................ 113
List of Figures

Figure 1: Relay Based Control Panel[6].................................................................6
Figure 2: PLC hardware structure[7].....................................................................7
Figure 3 - Flow of the PLC program.....................................................................14
Figure 4 - Digital Inputs – wired as NC and NO......................................................14
Figure 5 - Digital Input Conditioning – Straight through.......................................13
Figure 6 - Digital Input Conditioning – Using a timer.............................................13
Figure 7 - Digital Indication Alarm........................................................................16
Figure 8 - Digital Alarm – Cutover.........................................................................16
Figure 9 - Digital Alarm – AOI Interlock.................................................................17
Figure 10 - Analogue Input Scale function..............................................................19
Figure 11 - Analogue Cutover Alarm....................................................................20
Figure 12 - Sequence Step Flow............................................................................22
Figure 13 - Transition Flag.....................................................................................23
Figure 14 - Start Permissive (Example)..................................................................24
Figure 15 - Start Permissive (PLC code).................................................................25
Figure 16 - Motor Start condition..........................................................................25
Figure 17 - Gracel Steps.........................................................................................29
Figure 18 - PLC Sequence – Steps........................................................................30
Figure 19 - Sequence Step Allocation....................................................................31
Figure 20 - Sequence Action..................................................................................31
Figure 21 - Empty PLC program .ACD..................................................................33
Figure 22 - LSK File Tags structure.......................................................................34
Figure 23 - LSK file Program Structure.................................................................36
Figure 24 - PLC move instruction (LD language)....................................................38
Figure 25 - Plate Freezer Layout Drawing..............................................................46
Figure 26 - Plate Freezer (Picture) ......................................................................47
Figure 27 – Test 2 project PLC I/Os List................................................................49
Figure 28 - Empty Navigation Table.....................................................................52
Figure 29 – APCG software Title Page..................................................................55
Figure 30 - Digital Inputs screen..........................................................................57
Figure 31 - Input Number.......................................................................................57
Figure 32 - Tag symbol..........................................................................................58
Figure 33 - Input Description.................................................................................58
Figure 34 - Input Function.....................................................................................58
Figure 35 - Analogue Input Screen.........................................................................59
Figure 36 - Analogue Input - Input Number............................................................59
Figure 37 - Analogue Input - Function..................................................................59
Figure 38 - Analogue Input - Function Options.....................................................60
Figure 39 - Digital Output Screen..........................................................................60
Figure 40 - Digital Output Function.......................................................................61
Figure 41 - Analogue Output Screen.....................................................................61
Figure 42 - PLC I/O Data Base..............................................................................62
Figure 43 - Flags and SCADA/HMI screens...........................................................63
Figure 44 - ACD Flags...........................................................................................64
Figure 45 - Control Page........................................................................................64
Figure 46 - Control Page - Action Column..............................................................65
Figure 47 - Control Page – Conditions.................................................................66
Figure 48 - Control Page – Square Brackets...........................................................66
Figure 49 - Control Page - Derived......................................................................66
Figure 50 - Control Page - Function......................................................................67
Figure 51 - Control Page - Rung Comment ............................................................67
Figure 52 - Control Form – Tab Main....................................................................68
Figure 53 - Control Form-Add Row-Operator Error............................................69
Figure 54 - Control Form-New Tag-Error...............................................................69
Figure 55 - Control Form-New Tag.........................................................................70
Figure 56 - Control Form-New Tag-Notification....................................................70
Figure 57 - Control Form - New Page.....................................................................71
Figure 58 - Control Form - New Page-Notification................................................72
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.