MARA UNIVERSITY OF TECHNOLOGY
SHAH ALAM

BACHELOR (HON'S) IN MECHANICAL ENGINEERING
FACULTY OF MECHANICAL ENGINEERING

FINAL YEAR PROJECT REPORT

# CNC SOFTWARE BY USING VISUAL BASIC

BY
EKA SYABIREEN BIN HASSAN
97017693

NOVEMBER 1999

# TABLE OF CONTENT


Preface ..... i
*Acknowledgment* ..... iii
**INTRODUCTION** ..... 1
About This Project ..... 2
Objective ..... 4
**CNC PROTOTYPE MACHINE** ..... 5
About The Machine ..... 6
**SOFTWARE DEVELOPMENT** ..... 7
Computer Software ..... 8
*Computer Languages* ..... 8
*Low Level Language* ..... 9
*High Level Language* ..... 9
*Software Development* ..... 9
**THE DEVELOPMENT of CNC SOFTWARE** ..... 10
Why Using Windows Operating System? ..... 11
*About Windows 16-Bit and 32-Bit Operating Systems* ..... 11
Why Using Visual Basic? ..... 12
**THE SOFTWARE** ..... 13
The CNC Software ..... 14
*Keep Tracks of The User* ..... 19
*CNC Critical Data* ..... 20
*Help File* ..... 21
*Moving The Tool* ..... 21
*Running The Programs* ..... 24
*Exiting The Software* ..... 25
**DISCUSSION, FUTURE WORK, CONCLUSION** ..... 26
Discussion ..... 27
Future Work ..... 27
Conclusion ..... 28
References ..... 29
**APPENDIX** ..... 30
The Basic of The Visual Basic ..... 31
*Moving and Resizing* ..... 31
*Properties and Names* ..... 31
*Properties* ..... 31
*Names* ..... 32
*Coding* ..... 32
*When is a Text box not a Text box?* ..... 33
*Working with Text* ..... 33
*Making Decisions* ..... 33
*More Decisions* ..... 34
*The Select Case Structure* ..... 34
*The Message Box* ..... 35
*Using Else with an If statement* ..... 35
*Indentation* ..... 36
*Comments* ..... 37

*Sharing Data* ..... 38
*Check Boxes* ..... 39
*String Functions* ..... 39
*LCase or UCase* ..... 40
*Left or Right* ..... 41
*Mid* ..... 41
*InStr* ..... 41
*Mixing String Functions* ..... 42
*Format* ..... 42

# PREFACE

As time passes, the connection between Mechanical and Information Technology is increasing bonding. Many of Mechanical applications such as Heat Transfer, Fluid Mechanics, Mechanical Design, etc. has been combined with Information Technology to decrease time solving problems. This all can be done by using Computer to solve long equation in the matter of seconds. In Malaysia, the Technology of Computer is increasing start from 1993. Since then the information from the whole world gets in Malaysia just in a second. As the fast changes of Information Technology, Mechanical Technology also would follow up. As example, manual technical drawing now can be drawn by using computer like AutoCAD, UniGraphics, Microstation and many others more application. This will decrease of drawing time as if there is a mistake in drawing, it can be altered easily. Other's application like element analysis, heat distribution, air flow (fluid analysis) and all in the Mechanical application is converted into Information Technology to make the work easier for modern engineer. Industrial developments also follow up the technology as manufacturing is getting easier by the help of computers. More precision product can be produce as the machine is controlled by computers that can control more than 3 movement simultaneously. Knowledge of programming in computer is needed to established one mechanical application into Information Technology.

This **Final Project** is a study of how to programming a CNC Software by using Visual Basic. Student in Bachelor Engineering (Hon's) in Mechanical at UiTM has learn to programming in FORTRAN in Semester 1 and Semester 2. Where we try to take some application and convert it into a programming that makes a task easier and takes a shorter time to solved. But as Microsoft introduce its product "*Microsoft Visual Basic*" which this language is made for 32 bit application and the important is the language is easier to learn than others. Beside its easy programming language, it's also can manipulate Windows Platform which makes it one of the powerful language programming.

**Acknowledgment**

First, I would like to thanks to my parent that encourage me to study for higher level. If not because of them I would not get far at this level.

Of course, most of the credit goes to my Final Project Advisor, Ir. Dr. Abdul Rahman Haji Omar who encourage me to learn programming to developed this software. At first I didn't have advance knowledge in developing software, but he giving me ability to make sure this project can be done.

Thanks also to Dr. Ibrahim for helping and suggesting an idea in creating an engine language in this software.

Not to forget, Wani, Syukor, Wan, Rashid and all the CADEM members which helps me a little in using the Computer labs and CNC labs.