CONCEPTUAL MODEL:
MALAYSIAN TAX RESIDENT STATUS

A dissertation submitted in partial fulfilment of the requirements for the award of the degree of Master of Science (Information & Communication Technology) in the Faculty of Information Technology, Universiti Utara Malaysia.

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ABSTRAK

Taraf pemastautin cukai adalah salah satu keistimewaan bagi orang asing yang bekerja dan menetap di Malaysia dalam tempoh tertentu. Taraf pemastautin cukai ini membolehkan mereka menikmati kelebihan-kelebihan tertentu yang mana ia mengurangkan cukai pekerja tersebut. Akta Cukai Pendapatan 1967 telah menggariskan empat kritiria dalam menentukan sama ada seseorang pekerja itu mendapat taraf mastautin atau sebaliknya. Kriteria tersebut melibatkan prosedur yang begitu rumit dan selalunya dikendalikan oleh agen percukaian yang berpengalaman. Kajian ini menggunakan konsep sistem berasaskan peraturan untuk menghasilkan model terhadap prosedur tersebut. Kaedah model tersebut adalah rangkaian penakbiran, pohon keputusan dan peraturan. Menurut soal selidik yang telah dibuat,model tersebut terbukti adalah benar mengikut undang-undang dan peraturan yang ditetapkan serta telah ditukar kepada bahasa yang mudah difahami oleh seorang jurutera pengetahuan. Oleh yang demikian model konsep tersebut boleh digunapakai dalam pembangunan sistem pakar yang sebenar.

ABSTRACT

Tax resident status is a privilege for foreigner who works and stays in Malaysia for certain period of time. This status will enable them for a tax reduction. Income Tax Act 1967 has stated four main criteria for granting tax resident status. The criterion involves complex procedures, which are usually done only by experienced tax consultants. This study applied rule-based conceptual modeling in order to model the procedures. Three modeling methods have been applied are Inference Network, Decision Tree and rule. The test conducted, showed that the models have been transformed from pure tax regulation into a language that can be understood by the Knowledge Engineer. Therefore these conceptual models can later be developed into a real expert system.

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DEDICATION

To my lovely parents

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LIST OF ABBREVIATION

IRB	Inland Revenue Board
IEEE	Institute of Electrical Electronics Engineer
AI	Artificial Intelligence

CHAPTER 1

BACKGROUND OF STUDY

1.1 INTRODUCTION

Expert systems represent a class of modern tools that are being increasingly applied to solve specific real world problems requiring human expertise. The knowledge in these systems consists not only of facts but also of heuristic links, connecting facts to form chains of reasoning or plans of action. Expert systems can be viewed as objects that model specific real world objects and their interactions to conclude about their states.

Rule based expert systems have been developed to solve many problems. Determining the rules is still very difficult. A great deal of work has been done on automating the process of knowledge acquisition, i.e., rule determination, but, to date, no really good method has been found.

Expert system development should involve people such as an expert and knowledge engineer. An expert is a person who knows how to define problems and solve them. In his field, the expert also knows what facts or data to collect and investigate, he knows what rules to use, and he knows how to make inferences. To build the rule-

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