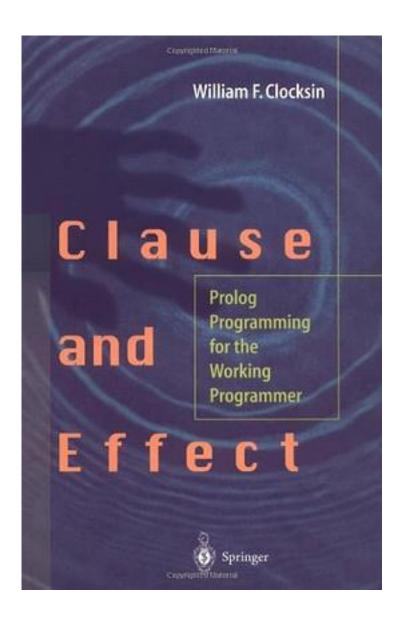
Clause and Effect



Clause and Effect_下载链接1_

著者:William F. Clocksin

出版者:Springer

出版时间:1997-10-13

装帧:Paperback

isbn:9783540629719

This book is for people who have done some programming, either in Prolog or in a language other than Prolog, and who can find their way around a reference manual. The emphasis of this book is on a simplified and disciplined methodology for discerning the mathematical structures related to a problem, and then turning these structures into Prolog programs. This book is therefore not concerned about the particular features of the language nor about Prolog programming skills or techniques in general. A relatively pure subset of Prolog is used, which includes the 'cut', but no input/output, no assert/retract, no syntactic extensions such as if then-else and grammar rules, and hardly any built-in predicates apart from arithmetic operations. I trust that practitioners of Prolog program ming who have a particular interest in the finer details of syntactic style and language features will understand my purposes in not discussing these matters. The presentation, which I believe is novel for a Prolog programming text, is in terms of an outline of basic concepts interleaved with worksheets. The idea is that worksheets are rather like musical exercises. Carefully graduated in scope, each worksheet introduces only a limited number of new ideas, and gives some guidance for practising them. The principles introduced in the worksheets are then applied to extended examples in the form of case studies.

作者介绍:

目录: 1. Getting Started

1.1 Syntax 1.2 Programs

1.3 Unification

1.4 Execution Model

Worksheet 1: Party Pairs Worksheet 2: Drinking Pairs

Worksheet 3: Affordable Journeys Worksheet 4: Acyclic Directed Graph

Data Structures

2.1 Square Bracket Notation

Worksheet 5: Member

2.2 Arithmetic

Worksheet 6: Length of a List Worksheet 7: Inner Product Worksheet 8: Maximum of a List

Worksheet 9: Searching a Cyclic Graph

3. Mapping

Worksheet 10: Full Maps

Worksheet 11: Multiple Choices

Worksheet 12: Partial Maps

Worksheet 13: Removing Duplicates

Worksheet 14: Partial Maps with a Parameter Worksheet 15: Multiple Disjoint Partial Maps Worksheet 16: Multiple Disjoint Partial Maps

Worksheet 17: Full Maps with State

Worksheet 18: Sequential Maps with State Worksheet 19: Scattered Maps with State

4. Choice and Commitment

4.1 The 'Cut'

4.2 A Disjoint Partial Map with Cut

Worksheet 20: Multiple Choices with Cut

Worksheet 22: Ordered Search Trees Worksheet 23: Frequency Distribution

4.3 Taming Cut

4.4 Cut and Negation-as-Failure

4.5 Negation-as-Failure Can Be Misleading

Worksheet 24: Negation-as-Failure

5. Difference Structures

Worksheet 25: Concatenating Lists Worksheet 26: Rotations of a List

Worksheet 27: Linearising

5.1 Difference Lists

Worksheet 28: Linearising Efficiently Worksheet 29: Linearising Trees

Worksheet 30: Difference Structures Worksheet 31: Rotation Revisited

Worksheet 32: Max Tree 5.2 Solution to Max Tree

6. Case Study: Term Rewriting 6.1 Symbolic Differentiation

6.2 Matrix Products by Symbolic Algebra

6.3 The Simplifier

7. Case Study: Manipulation of Combinational Circuits

7.1 Representing Circuits 7.2 Simulation of Circuits 7.3 Sums and Products

7.4 Simplifying SOP Expressions

7.5 Alternative Representation

8. Case Study: Clocked Sequential Circuits 8.1 Divide-by-Two Pulse Divider

8.1 Divide-by-Two Pulse Divider 8.2 Sequential Parity Checker 8.3 Four-Stage Shift Register

8.4 Gray Code Counter

8.5 Specification of Cascaded Components

9. Ca'se Study: A Compiler forThree Model Computers

9.1 The Register Machine

9.2 The Single-Accumulator Machine

9.3 The Stack Machine

9.4 Optimisation: Preprocessing the Syntax Tree

9.5 Peephole Optimisation

10. Case Study: The Fast Fourier Transform in Prolog

10.1 Introduction

10.2 Notation for Polynomials

10.3 The DFT

10.4 Example: 8-point DFT

10.5 Naive Implementation of the DFT

10.6 From DFT to FFT

10.7 Merging Common Subexpressions

10.8 The Graph Generator

10.9 Example Run: 8-point FFT

10.10 Bibliographic Notes

11. Case Study: Higher-Order Functional Programming

11.1 Introduction

11.2 A Notation for Functions

11.3 The Evaluator

11.4 Using Higher-Order Functions 11.5 Discussion 11.6 Bibliographic Notes •••• (收起)

Clause and Effect_下载链接1_

标签

prolog

逻辑编程

Programming

软件开发

计算机科学

计算机

编程

程序设计

评论

Clause and Effect_下载链接1_

书评

Clause and Effect_下载链接1_