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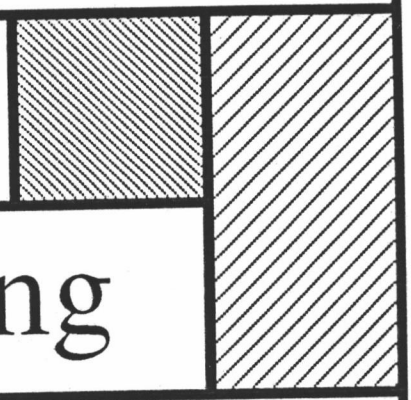
Rectangular Stock Cutting Using Optimisation



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at the

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Abstract

An original solution method ("Snippy") is developed for the rectangular stock cutting problem, and compared with the commercially available package "OREC" by applying both methods to industrial order books. Arguments are presented to show that the solutions found by Snippy are optimal for all except one of the order books.

Snippy incorporates two innovations. The first is a new method for generating guillotinable cutting patterns, the Trickle Method. This is an incremental dynamic programming technique which is especially suited for interaction with the Simplex Method via column generation. The second development involves a class of non-guillotinable patterns that can be constructed using essentially guillotine techniques. In particular, a relatively minor modification to the Trickle Method allows the generation of good non-guillotinable patterns.

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Table of Contents

CONTENTS PAGE

1 **INTRODUCTION AND DEFINITIONS** 7

1.1 Definition of the Problem Area 8

1.2 Classes of Stock Cutting Problem 13

1.3 Some Special Restrictions in Two Dimensions 16

1.4 Introduction to OREC 26

2 **AN OVERVIEW OF CURRENT TECHNIQUES** 29

2.1 Pattern Generation 30

2.1.1 Discretisation 37

2.1.2 Greedy Heuristics 43

2.1.3 Dynamic Programming 47

2.1.4 Other Guillotine Methods 56

2.1.5 Set Packing 60

2.2 Covering the Order Book 67

2.2.1 Greedy Heuristics 70

2.2.2 Column Generation 72

2.2.3 A Swapping Algorithm 74

2.2.4 A Combined ILP Formulation 77

CONTENTS PAGE

3 ADVANCES IN PATTERN GENERATION....83

3.1 A Modification to Shovlar's Method....84

3.2 A More General Strip Pattern Generator....88

3.3 The Trickle Method....91

3.4 Operators Used by the Trickle Method....99

3.5 Full Implementation....104

3.6 Non-guillotinable Patterns....107

3.7 Evaluation of the Trickle Method....112

4 THE "SNIPPY" PACKAGE....114

4.0 Introduction to Snippy....115

4.1 The Pre-emptive Pattern Generator....119

4.2 The Assortment Solver....124

4.3 Introduction to ZIP....128

4.4 Extra Requirements....136

4.5 Modifications to ZIP....143

4.6 The Interactive Pattern Generator....148

4.7 Branch and Bound....150

4.8 The Final Pattern Generator....154

4.9 The Graphics Program....159

CONTENTS PAGE

5 RESULTS....160

5.1 The Order Books....161

5.2 Solutions by OREC....184

5.3 Solutions by Snippy....189

5.4 Bayonet Examples....209

6 CONCLUSIONS....215

6.1 The Rôle of Linear Programming....216

6.2 Evaluation of OREC....218

6.3 Aspects of the Computing Environment....221

6.4 Evaluation of Pattern Restrictions....224

6.5 Summary....227

REFERENCES....229