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A Study Guide for Students of Sorsogon State University- Bulan Campus²

JARRIAN VINCE G. GOJAR³

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¹A course in the Bachelor of Science in Computer Science

²This book is a study guide for students of Sorsogon State University- Bulan Campustaking up the course Discrete Structures 2.

³https://github.com/godkingjay



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Preface

"If people do not believe that mathematics is simple, it is only because they do not realize how complicated life is." $\[$

– John von Neumann

Jarrian Vince G. Gojar

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Boolean Algebra

Trees

- 2.1 Introduction to Trees
- 2.2 Terms and Definitions
- 2.3 Binary Trees
- 2.4 Tree Traversals
- 2.5 Spanning Trees
- 2.6 Decision Trees
- 2.7 Isomorphism of Trees

Network Models and Petri Nets

- 3.1 Network Models
- 3.2 Maximal Flow Algorithm
- 3.3 Max Flow, Min Cut Theorem
- 3.4 Matching
- 3.5 Petri Nets

Automata, Grammars and Languages

- 4.1 Languages and Grammars
- 4.2 Finite State Automata
- 4.3 Regular Expressions

Computational Geometry

- **5.1 Basics of Computational Geometry**
- 5.2 Closest-Pair Problem
- **5.3 Convex Hull Algorithm**
- 5.4 Voronoi Diagrams
- 5.5 Line Segment Intersection
- 5.6 Applications in Computer Graphics and Geographical Information Systems

References

- A. Books
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- **B.** Other Sources

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