FORMAL LANGUAGES AND COMPILERS

Course notes

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CONTRIBUTORS

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PREFACE

This book collects the various personal notes from the course “Formal Languages and Compilers”.
In case of errors or additional material, please contact me at my private email address
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ACRONYMS

FLC	Formal Languages Classification
RL	Regular Languages
CFL	Context-Free Language
TM	Turing Machines

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PART I

LANGUAGES

CHAPTER 1

CLASSIFICATION (FLC)

1.1 Grammars

A grammar is a 4-tuple $G = (N, T, P, S)$ where:

N alphabet of non-terminal symbols;

T alphabet of terminal symbols;

P finite set of rules (productions);

S start (non-terminal) symbol.

A language produced by $G = (N, T, P, S)$ is:

$$L(G) = \{w | w \in T*; S \Rightarrow *w\}$$

CHAPTER 2

REGULAR LANGUAGES (RL)

CHAPTER 3

CONTEXT-FREE LANGUAGES (CFL)

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CHAPTER 4

TURIN MACHINES (TM)

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PART II

COMPILERS

CHAPTER 5

COMPILER STRUCTURE (CS)

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CHAPTER 6

LEXICAL ANALYSIS (LA)

CHAPTER 7

SYNTAX ANALYSIS (SA)

CHAPTER 8

SYNTAX-DIRECTED TRANSLATION (SDT)

CHAPTER 9

SEMANTIC ANALYSIS AND INTERMEDIATE-CODE GENERATION (SA/ICG)