## **Contents**

Introduction				
C	hap	ter 1 The State of A Programming Langu	ıage	
1	The	Concept of APL	2	
	1.1	Notation as a Tool of Thought	2	
	1.2	APL as a Programming Language	9	
2	Enh	ancing APL	14	
3	APL	: An Assessment	21	
	3.1	APL as a Programming Language	22	
	3.2	Accessing APL	23	
	3.3	Facetting APL or: A Lack of Readability	24	
4	Con	sequences for Utilizing APL	30	
	4.1	Suggestions for a Better Programming Style in APL	31	
	4.2	A Programming Language in Software Production	37	
C	hapt	ter 2 An Art of Software Engineering		
1	Proj	ects, Projects	40	
	1.1	The Intricacies of Creating Software	40	
	1.2	A Few Examples for Software-Projects	43	
		iii		

iv Contents

2	Inco	mprehensible Programs	47
3	The Software Life Cycle		50
	3.1	The Phases of Creating Software	50
	3.2	Simplifications of the Software Life Cycle Model	53
	3.3	The Rôle of the Programming Language in the Software	
		Life Cycle	55
	3.4	The Consequence	56
4	Proj	ect Management	58
5	Writing Acts		59
	5.1	Listening in a Background	61
	5.2	<del>-</del>	64
	5.3	Breakdowns	67
	5.4	Programming as a Writing Act?	70
6	AN	ew Understanding of Programming	72
C	hap	ter 3 Literate Programming	
	•		79
1	The	APL2 WEB System of Structured Documentation	79 81
1 2	The The	APL2 WEB System of Structured Documentation First Example	81
1	The The	APL2 WEB System of Structured Documentation First Example APL2 WEB System	81 91
1 2	The The The 3.1	APL2 WEB System of Structured Documentation  First Example  APL2 WEB System  The Structure of an APL2 WEB File	81 91 91
1 2	The The The 3.1 3.2	APL2 WEB System of Structured Documentation  First Example  APL2 WEB System  The Structure of an APL2 WEB File The Rôle of the Section	81 91
1 2	The The 3.1 3.2 3.3	APL2 WEB System of Structured Documentation  First Example  APL2 WEB System  The Structure of an APL2 WEB File  The Rôle of the Section  Precursors of Literate Programming	81 91 91 94
1 2	The The 3.1 3.2 3.3 3.4	APL2 WEB System of Structured Documentation  First Example  APL2 WEB System  The Structure of an APL2 WEB File The Rôle of the Section Precursors of Literate Programming A Reasoning for the APL2 WEB Commands	81 91 91 94 96
1 2	The The 3.1 3.2 3.3 3.4 3.5	APL2 WEB System of Structured Documentation  First Example  APL2 WEB System  The Structure of an APL2 WEB File The Rôle of the Section Precursors of Literate Programming A Reasoning for the APL2 WEB Commands A Summary of the APL2 WEB Commands	81 91 91 94 96 103
1 2	The The 3.1 3.2 3.3 3.4 3.5 3.6	APL2 WEB System of Structured Documentation  First Example  APL2 WEB System  The Structure of an APL2 WEB File The Rôle of the Section Precursors of Literate Programming A Reasoning for the APL2 WEB Commands A Summary of the APL2 WEB Commands Missing Commands in APL2 WEB	81 91 91 94 96 103
1 2 3	The The 3.1 3.2 3.3 3.4 3.5 3.6 TAN	APL2 WEB System of Structured Documentation  First Example  APL2 WEB System  The Structure of an APL2 WEB File The Rôle of the Section Precursors of Literate Programming A Reasoning for the APL2 WEB Commands A Summary of the APL2 WEB Commands Missing Commands in APL2 WEB	81 91 91 94 96 103 124
1 2 3	The The 3.1 3.2 3.3 3.4 3.5 3.6 TAN	APL2 WEB System of Structured Documentation  First Example  APL2 WEB System  The Structure of an APL2 WEB File The Rôle of the Section Precursors of Literate Programming A Reasoning for the APL2 WEB Commands A Summary of the APL2 WEB Commands Missing Commands in APL2 WEB  GLing an APL2 WEB	81 91 94 96 103 124 130
1 2 3	The The 3.1 3.2 3.3 3.4 3.5 3.6 TAN	APL2 WEB System of Structured Documentation  First Example  APL2 WEB System  The Structure of an APL2 WEB File The Rôle of the Section Precursors of Literate Programming A Reasoning for the APL2 WEB Commands A Summary of the APL2 WEB Commands Missing Commands in APL2 WEB  GLing an APL2 WEB  aving a WEB Program Visualization vs. Cosmetic Polishing	81 91 94 96 103 124 124 130

Contents

6	How	to Read a WEB	148
7	How	to Write a WEB	150
	7.1	Prerequisites	151
	7.2	Principles of Composing a Literate Program	156
	7.3	Approaching a Literate Programming Style	180
8	Liter	ate Programming in a Team	185
	8.1	Chief Programmer Team Management of Production Programming	185
	8.2	Team Programming in a Literate Programming Environment	187
9	A Te	chnical Note on TANGLE and WEAVE	195
10	APL	2 WEB: an Assessment	196
	10.1	The Benefits of Literate Programming	197
	10.2	APL2WEB in the Software Development Cycle	199
	10.3	A Programming Style in APL2web	201
	10.4	Disadvantages of Literate Programming	204
	10.5	A Biased Assessment	206
11	Enha	ncements to APL2 WEB within the Existing Framework	207
	11.1	Technical Points	207
	11.2	A Nesting of Sections?	208
	11.3	Summary	210
Cl	hapt	er 4 Towards a Literate APL2	
1	The (	Gaps in APL2 WEB	212
2	A Ne	w Environment for APL2 Sessions	216
	2.1	Enhancing APL2's User-Interface	216
	2.2	An Interactive Environment for (APL2) WEB	224

	Contents	
A Perspective on Readable APL	237	
ppendix		
An APL2 web Manual	241	
An APL2 Character Set for TeX	250	
bliography	255	
	ppendix An APL2 web Manual	