

STONEHENGE CONSULTING SERVICES, Inc. 121 SW Morrison St, Suite 830 Portland, OR 97204-3138 USA

Learning Perl

an introductory course by Randal L. Schwartz and Tom Phoenix
Stonehenge Consulting Services, Inc.

Version 3.1.2 (1/23/06)[L]

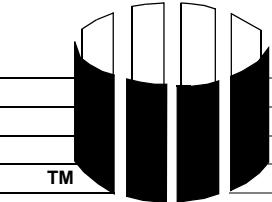


Table of Contents

Introduction

What this course is about	3
Larry Wall	4
History of Perl	5
Modern Perl	6
Purpose of Perl	7
Availability	8
Support	9
Perl books	10
Making the program	11
Whitespace and comments	12
General concepts	13
Notes on compilation	14
A second example program	15

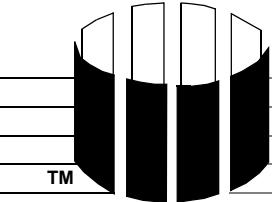
Scalars

Scalar data	17
Numbers	18
Numeric operators	19
Strings	20
Double-quoted string literals	21
String operators	22
Automatic conversion between numbers and strings	23

-w warnings	24
Scalar variables	25
Assignment operators	26
Generating output with print	27
Variable interpolation of scalars into strings	28
Controlling variable interpolation	29
Operator precedence and associativity	30
Arithmetic and string comparisons	31
The if control structure	32
Boolean values	33
Logical “not”	34
<STDIN> as a scalar value	35
The chomp operator	36
Combining chomp with <STDIN>	37
The while control structure	38
The undef value	39
More about undef	40

Lists and Arrays

What is an array?	42
Array element access	43
More on array element access	44
Special array indexing	45



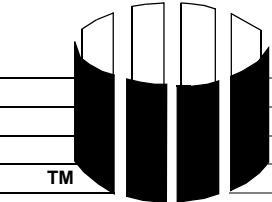
List literals and the <code>qw//</code> shortcut	46	A better <code>max</code> routine	71
List assignment	47	Notes on lexical (<code>my</code>) variables	72
The array as a whole	48	The <code>use strict</code> pragma	73
Assigning to an array	49	The <code>return</code> operator	74
Array names inside literal lists	50	Omitting the ampersand	75
The <code>pop</code> and <code>push</code> operators	51		
The <code>shift</code> and <code>unshift</code> operators	52		
Interpolation of arrays into strings	53	Hashes	
The <code>foreach</code> control structure	54	What is a hash?	77
More on the <code>foreach</code> control structure	55	Why use a hash?	78
Perl's favorite default: <code>\$_</code>	56	Hash element access	79
The <code>reverse</code> operator	57	Modifying hashes	80
The <code>sort</code> operator (simple version)	58	The hash as a whole	81
Scalar and list context	59	Hash assignment	82
More on scalar and list context	60	Hash operators	83
Context summary	61	Typical use of a hash	84
Converting a scalar to a list	62	The <code>exists</code> operator	85
<code><STDIN></code> as a list	63	The <code>delete</code> operator	86
		Hash element interpolation	87
		Summary of Variable Access Syntax	88

Subroutines

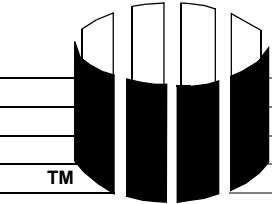
Defining and invoking a user function (subroutine)	65
Return values	66
Arguments	67
Private variables in subroutines	68
The <code>local</code> operator	69
The difference between <code>local</code> and <code>my</code>	70

Basic I/O

Input from standard input	90
Input from the diamond (<code><></code>) operator	91
The invocation arguments	92
Output to standard output	93
Notes on <code>print</code>	94



Formatted output with <code>printf</code>	95	Substitutions	118
More <code>printf</code> formats	96	More on substitutions	119
Concepts of Regular Expressions			
Regular expressions	98	Case shifting	120
Using simple patterns	99	The <code>split</code> operator	121
Repeat operators	100	The <code>join</code> operator	122
Alternatives	101		
A pattern test program	102		
More about Regular Expressions			
Character classes	104	Reversed logic control structures	124
Character class shortcuts	105	Expression modifiers	125
Quantifiers	106	The “naked block” control structure	126
Anchoring patterns	107	The <code>if</code> control structure’s <code>elsif</code> clause	127
Word-boundary anchors	108	Autoincrement and autodecrement	128
Memory parentheses	109	The value of autoincrement	129
Regular Expression metacharacters	110	The <code>for</code> control structure	130
Regular expression precedence	111	Notes on the <code>for</code> control structure	131
Using Regular Expressions			
Matching with regular expressions	113	More notes on the <code>for</code> control structure	132
More on matching	114	The <code>last</code> operator	133
Interpolating into patterns	115	The <code>next</code> operator	134
The match variables	116	The <code>redo</code> operator	135
Automatic match variables	117	The looping control statements, as a picture	136
		Labeled blocks	137
		Combining logical values	138
		Partial-evaluation operators	139
		Control structures using partial-evaluation operators	140



Filehandles and File Tests

What is a filehandle?	142
Opening and closing a filehandle.	143
Bad filehandles	144
A slight diversion: die	145
Using filehandles	146
Some advanced output techniques.	147
The -X filetests	148
More filetests	149
The stat operator.	150
Bitwise operators	151

Directory Access

Moving around the directory tree	153
Globbing	154
An alternate syntax for globbing	155
Directory handles.	156
Skipping some files with dirhandles	157

Manipulating Files and Directories

Removing a file	159
Renaming a file	160
Creating a link to a file	161
Notes on file links	162
Making and removing directories	163
Modifying permissions and ownership	164

Changing timestamps.	165
------------------------------	-----

Process Management

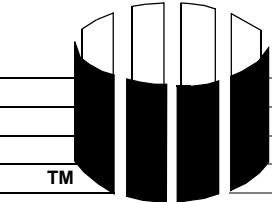
The system operator.	167
The exec operator.	168
Backquotes in scalar context	169
Backquotes in list context	170
Processes as filehandles.	171
The fork and wait operators.	172
The fork and wait operators in Perl.	173
Sending and receiving signals	174

Strings and Sorting

Finding a substring.	176
Extracting and replacing a substring	177
Formatting data with sprintf	178
Advanced sorting.	179
Making a sort subroutine	180
Notes on making a sort subroutine	181
Sorting by values in a hash	182
Sorting by multiple keys	183

Simple Databases

DBM files and DBM hashes	185
Opening and closing DBM hashes.	186
Using a DBM hash.	187



Packing and unpacking binary data	188
Fixed-length random access databases	189
Variable-length (text) databases	190
Updating text files	191

Some Advanced Perl Techniques

Selecting a subset from a list	193
Transforming a list	194
Minimal pattern matching	195
Matching multiple lines at once	196
Introduction to slices	197
Pulling an item from a list	198
List slice	199
Array slice	200
Hash slice	201
Slice subscripting	202
Slice interpolation	203
Using eval to trap errors	204
Typical use of eval	205
Notes on using eval	206

Miscellany

Converting find command lines and other programs to Perl	208
Very brief overview of additional features not covered	209
Very brief overview, part two	210

Conclusion

Questions and answers	212
-----------------------------	-----