

Perl Tutorial

The Practical Extraction Report Language

- The premier site for Perl information is:

<http://www.perl.com>

- Everything you every wanted to know about Perl, and then some.
- Perl is a creation of Larry Wall
- Current stable release 5.005_03

What is Perl?

- A powerful general-purpose programming language
- A high-level, command-driven scripting language

What is a Scripting Language?

- A programmer/administrator tool designed to allow the bolting together of other software tools to solve a problem - we refer to the resulting programs as scripts
- Scripts are very popular within the UNIX and Linux world
- Examples of scripting languages include TCL, Python, and AppleScript (and - of course - Perl!). MS-DOS batch files are a very simple, primitive form of scripts
- Scripting languages are generally interpreted, as opposed to compiled

What makes Perl different?

- Easy to learn - yippee! - with very good support for standard programming constructs
- Very good at processing and formatting text files (the reason it was created)
- Freely available, on many platforms (UNIX, Linux, Mac, PC, Irix, SunOS, Windows, NT, etc., etc.)
- Strong support from the Internet developer community
- Add-ons available for every conceivable usage - great support for Internet standards and protocols

Why do Programmers like Perl?

- Lots of reasons ...
- Perl gets the job done!

A Perl Story #1

- When faced with writing a particularly mundane, but highly necessary, program to process thousands of files, a programmer was faced with choosing a language
- If he had had to write the program in C, he would have found an excuse not to
- If he had had to write the program in C++/Java, he would still be trying to identify the best set of abstractions to implement as classes
- He chose Perl, and wrote 12 lines of code in as many minutes ...

What is Perl not so good at?

- Writing low-level, machine dependent code, such as Device Drivers
- Highly compute-intensive, mathematical programs
- Highly optimised, time-critical programs (i.e., real-time, embedded)

Why not use/learn Java?

- Good question! After all, Java is "the programming language of the Internet" and this is an Internet course!!
- More interested in learning about networking protocols, as opposed to programming languages that target the networking world
- Despite what you've heard, Java is not easy to master/learn
- Java is easier than C++, but that doesn't say much
- Java is cool, but, Perl is cooler!

Features of Perl

- Support got High-level Data-types
 - dynamic list structures
 - associative arrays ("hashes")
 - strings
 - references (a safer, and easier to use, version of C/C++ "pointers")
- Support for Regular Expressions
 - sophisticated pattern-matching and replacement operations
- Automatic Memory Management
 - no more worrying about malloc, new, free, dispose, delete [], etc., etc.
- Extensible
 - OOP support (with Perl 5)
 - reusable code base
 - modular
- "Low-Level" Features
 - possible to interface Perl to other programming languages (C, C++, Java)
 - possible to embed the Perl interpreter in a program written in C

Features of Perl (continued)

- Some Controversial Features
 - "loose" typing and declarations (no need to pre-define variables)
 - "There's more than one way to do it"
 - performance can be poor (due to it's interpreted nature)
 - "real" computer scientists tend to view Perl with disdain

Perl Documentation

- I recommend a couple of textbooks on the Booklist as found on the <http://elmo.itcarlow.ie> website
- Every Perl distribution comes with complete on-line documentation
- On Linux, the "man perl" command introduces the documentation available
- The on-line reference material is to be regarded as the ultimate authority on what your distribution of Perl supports

A Perl Story #2

- A University in the States runs a programming challenge each year
- The first year it ran, a student using Perl won, completing the challenge in about half the time of any other student (all using more traditional programming languages)
- In all subsequent years, Perl programmers have been banned from the competition
- The winner from the first year still isn't quite sure what to do with his prize - a copy of "Microsoft Visual C++"