

An Overview of Perl

A language for Systems and Network Administration and Management:
An overview of the language

Where do I get Perl?

- For Windows, go to <http://www.activestate.com>, download the installer
- For Linux: it will be already installed
- For other platforms: go to <http://www.perl.com>
 - This is a good source of other information about Perl

Where do I get Info about Perl?

- Web sites:
 - <http://www.perl.com>
 - <http://www.activestate.com>
 - <http://use.perl.org>
- On your hard disk:
 - `perldoc -f function`
 - Will look up the documentation for the built-in function (from the documentation `perldoc`)
 - `perldoc -q word`
 - Will look up word in the headings of the FAQ
 - `perldoc perl`
 - A list of much of your locally installed documentation, divided into topics
 - ActiveState Perl provides a Programs menu item that links to online html documentation

CPAN, PPM: Many Modules

- A very strong feature of Perl is the community that supports it
- There are tens of thousands of third party modules for many, many purposes:
 - Eg. `Net::LDAP` module supports all LDAP operations, `Net::LWP` provides a comprehensive web client
- Installation is easy:
`sudo perl -MCPAN -e shell`
`install Net::LDAP`
- Will check if a newer version is available on the Internet from CPAN, and if so, download it, compile it, test it, and if it passes tests, install it.

PPM: Perl Package Manager

- For Windows
- Avoids need for a C compiler, other development tools
- Download precompiled modules from ActiveState and other sites, and install them:

```
ppm install Net::LDAP
```

- See documentation with ActiveState Perl

How to ask Questions on a List

- I receive many email questions from students about many topics
- Most questions are not clear enough to be able to answer in any way except, "please tell me more about your problem"
- Such questions sent to mailing lists are often unanswered
- Need to be concise, accurate, and clear
 - see also Eric Raymond's How to Ask Questions the Smart Way at <http://catb.org/~esr/faqs/smart-questions.html>
- Search the FAQs first

Mailing Lists: help from experts

- There are many mailing lists and newsgroups for Perl
- When subscribe to mailing list, receive all mail from list
- When send mail to list, all subscribers receive
- For Windows, many lists at <http://www.activestate.com>

Where is Perl on my system?

- ActiveState Perl installs `perl.exe` in `C:\Perl\perl.exe`
- Linux systems have a standard location for perl at `/usr/bin/perl`
- On some UNIX systems, it may be installed at `/usr/local/bin/perl`

How does my OS know it's a Perl program?

- To run your Perl program, OS needs to call perl
- How does OS know when to call Perl?
- Windows:
 - OS uses the extension of the file to decide what to do (e.g., .bat, .exe)
 - Your program names end with .pl
- Linux, Unix:
 - programs have execute permission (chmod +x program)
 - OS reads first 2 bytes of program: if they are "#!" then read to end of line, then use that as the interpreter
 - OS doesn't care what your program file is called
- For cross platform support:
 - Put this at the top of all your programs:

```
#!/usr/bin/perl -w
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```

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Funny Characters \$, @, %

- Variables in Perl start with a funny character
- Why?
- No problem with reserved words:
 - can have a variable called \$while, and another variable called @while, and a third called %while.
- Can interpolate value into a string:

```
my $string = "long";
my $number = 42.42;
print "my string is $string and my number is
      $number\n";
```

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Language Overview

A quick look at more important features of the language

Arrays

- Define an array like this:
- my @array = (1, 5, "fifteen");
- This is an array containing three elements
- The first can be accessed as \$array[0], second as \$array[1], the last as \$array[2]
- Note that since each element is a scalar, it has the \$ funny character for a scalar variable value
- In Perl, we seldom use an array with an index—use list processing array operations
 - higher level.

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Hashes

- Hashes are probably new to you
- Like an array, but indexed by a string
- Similar idea was implemented in `java.lang.HashTable`
 - Perl hashes are easier to use
- Example:

```
my %hash = ( NL => 'Netherlands',  
              BE => 'Belgium' );
```

- This creates a hash with two elements
- first is `$hash{NL}`, has value "Netherlands";
- second is `$hash{BE}` with value "Belgium"

String Operations

- Perl has all the operators from C, in same precedence
- Has more operators for strings:
- Join strings with a dot, e.g.
`print "The sum of 3 and 4 is " . 3 + 4 . "\n";`
- Quote special characters with a backslash, as in C
`print "\$value = $value\n";`
- Can quote all characters using single quotes:
`print 'output of $perl = "rapid";print $perl; is "rapid"';`
- Note that double quotes are okay in single quotes,
single quotes okay in double quotes.

See the perl summary

- The Perl summary on the subject web site provides...well, a good summary!