Learning Perl

Ed Summers
The Plan

- What is Perl?
- Perl Basics
- Perl Modules
- Perl and MARC
What is Perl?
Everyday Programming

1. Preheat oven to 375° F.
2. Combine flour, baking soda and salt in small bowl.
3. Beat butter, granulated sugar, brown sugar and vanilla extract in large mixer bowl until creamy.
4. Add eggs one at a time, beating well after each addition.
5. Gradually beat in flour mixture.
7. Drop by rounded tablespoon onto ungreased baking sheets.
8. Bake for 9 to 11 minutes or until golden brown.
9. Cool on baking sheets for 2 minutes.
Programming in Libraries?

- Online Catalogs
- Web Sites
- Homegrown Databases
- Data Services: Census Data, GIS, etc...
- Public Access Computing
There are lots of languages at last count!!
Popular Languages in Libraries

C
C++
Java
Python
PHP
Visual Basic
C#
Perl
Perl

- Created by Larry Wall at JPL in 1987
- Open Source
- C, Lisp, Csh, Pascal, Awk, Sed, Smalltalk
- Practical Extraction and Reporting Language
- ... or Pathologicaally Eclectic Rubbish Lister
Natural Languages

- Learn it once, use it many times.
- Learn as you go.
- Many acceptable levels of competence.
- Multiple ways of saying the same thing.
- No shame in borrowing.
- Cooperative design.
CPAN

- Comprehensive Perl Archive Network
- Thousands of free extensions to Perl available.
Perl in Libraries

- Web Development
- Homegrown Databases
- Systems Administration: email, monitoring tools, proxies, log analysis ...
- Data Processing: MARC, Z39.50, XML, RDF, Web Services ...
Perl Basics
Hello World

```
print "hello world\n";
```
Building Blocks
Variables

$  @  %
Strings

$name = "Ed Summers";
print "hello $name\n";
Numbers

$numerator = 22;
$denominator = 7;
$pi = $numerator/$denominator;

print "pi=$pi\n";
@presidents = ( "Ford", "Carter", "Reagan", "Bush", "Clinton", "Bush" );
push( @presidents, "Nader" );
print pop( @presidents ), "\n";
print pop( @presidents ), "\n";
print shift( @presidents ), "\n";
@ Combining @

```plaintext
$array1 = ( 1, 2, 3 );
$array2 = ( 4, 5, 6 );
$array3 = ( $array1, $array2 );
print $array3, "\n";
```
% Hashes %

dewey = {
    '100' => 'Philosophy',
    '200' => 'Religion',
    '300' => 'Social Sciences',
    '400' => 'Language'
};

print $dewey['200'], "\n";

"example.pl" 18L, 161C
Flow Control
```bash
$x=1;

if ($x == 1) {
    print "x is equal to 1\n";
}
```
```javascript
$x = 2;

if ($x == 1) {
    print "$x is equal to 1\n";
} else {
    print "$x is not equal to 1\n";
}
```
\$x = \langle \text{STDIN} \rangle; \\
if ( \$x == 1 ) \\n    \text{print} \ "x \ is \ equal \ to \ 1\n"; \\
\} \\
\text{else} \{ \\
    \text{print} \ "x \ is \ not \ equal \ to \ 1\n"; \\
\}
while

#!/usr/bin/perl

$year = 1900;
while ( $year < 2004 ) {
    print "$year\n";
    $year = $year + 1;
}

~
foreach

#!/usr/bin/perl

@presidents = ( "Ford", "Carter", "Reagan", "Bush", "Clinton", "Bush" );

foreach $name ( @presidents ) {
    print "$name\n";
}

for

```php
for ( $i=0; $i<10; $i++ ) {
    print "$i\n";
}
```
subroutines

```perl
print convert( 57 ),"\n";
print convert( 79 ),"\n";

sub convert {
    $f = shift;
    $c = ($f-32) * 5/9;
    return $c;
}
```
sub convert {
    $f = shift;
    $c = ($f-32) * 5/9;
    return $c;
}

1;

require("convert.pl");
print convert(55), "\n";
modules

```perl
use LWP::Simple;

$html = get( "http://www.google.com" );
print $html;
```
objects

```
use Net::FTP;
$ftp = Net::FTP->new( 'ftp.loc.gov' );
$ftp->login( 'anonymous' );
$ftp->cwd( 'pub' );
@files = $ftp->dir();
foreach my $file (@files) {
   print "$file\n";
}
```
combining some stuff

```perl
use Net::Amazon;
$client = Net::Amazon->new( 
    token => 'D3RG80HKRPMZC1' );
$response = $client->search( 
    mode => 'music', 
    artist => 'Thelonious Monk' );
foreach $property ( $response->properties() ) {
    print $property->album(), "\n";
}
```