CSCI-2962 Programming in Perl
Final Exam Review Questions

The final exam will cover everything we have done in the 2nd half of the class, beginning with Regular Expressions. This includes: Regular Expressions, Lookaround assertions, Subroutines, Objects, CGI, and the "Random bits of Perl" from our missing class.

The exam will be open-book, open-note. You may use the Camel, the Llama, another Perl text, your own notes, and/or class notes. You may not use Calculators, PDAs, Laptops, or any other student.

Following are some sample questions for the final exam:

Regular Expressions

1) Write a Regular expression that matches the following:
a) at least one `a` followed by any number of `b`'s

b) three consecutive copies of the value stored in `$foo`

c) any five characters, including the newline

d) any 'word' (as defined by perl) two times, separated by any other different word (with any amount of whitespace in between the words). For example:
`Hello world5 Hello`

2) Write one line of code that will search a string `$email` for an email address, and store the user name in `$user`, and the domain in `$domain`. For example, if `$email` contains `lallip@cs.rpi.edu`, after your one line, `$user` will contain `lallip` and `$domain` will contain `cs.rpi.edu`

3) What is printed in the following example?
```
$string = "Name=Paul;RIN=660066466;email=lallip\@cs.rpi.edu";
$string =~ /Name=(.*);/;
print "Name: $1\n";
```


4) What about this one?
```
$phrase = "Do not go gently into that dark night\nRage, Rage\nAgainst the dying of the
light";
@firsts = $phrase =~ /^(\w+)/gm;
print "@firsts\n";
@lasts = $phrase =~ /(\w+)$/g;
print "@lasts\n";
```

User subroutines

5) What is the output of this code?

```
sub fun1{
        $i=0;
        foreach (@_){
                print "$i: $_\n";
                $i++;
        }
}
$name = Paul;
fun1 "hello", "world", "and $name!";
```

6) Write a function that will accept a string and a list. The function will return a string consisting of each member of the array prepended by the string. For example, if the function is called by
```
prepend("good", ("morning", "evening", "boy"));
```
it will return the string
```
"good morning good evening good boy"
```
Perl should give an error if incorrect arguments are passed (ie, first argument is not a scalar, second is not a list, or incorrect number of arguments)).

7) What is the difference between the following to styles of calling a function?
```
my_funct ("Hello", 3);
my_funct "Hello", 3;
```

Objects

8) Write a constructor for a class `Person` that has data-members Name and Age. Your constructor should set Name to the null string, and Age to 0.

CGI Programming

The best review you could have would be to do homework 4

9) What should be the first two lines of every single CGI script you write?

10) If more than one form element has the name "foo", what does param('foo') return in list context? In scalar context?

11) Give the CGI 'shortcut' for the following piece of HTML:
```
<input type="text" name="Age" value=18>
```