

CSCI 132 Practical Unix Programming

Homework 2

Solution

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PART 1

Do exercises 1-4 of HOUR 2 in the UNIX book.

ex1: account names are unique because each account name is associated with a password, and the combination account name and password must be used to log in. The same is true for the user ID, uid, which is simply an internal representation used by UNIX to specify the account.

ex2: Based on the criteria described on page 31, the following are good passwords: 4myMUM, Blk&Blu. The others are either too short, do not contain combination of letters and digits, or based on the user name.

ex3: who am i usually displays more information about the user than whoami. See page 33. Therefore, on a new computer, it is better to use who am i, because it might display the name of the machine as well.

ex4: To find who is logged in to the system, we can use the following three commands:

- users: this lists the user names
- who: this lists the user names, since when they have been connected, and from where
- w: displays even more information about the system usage for each user

See pages 35-36.

PART 2

Complete the program we did in class on scoring similarity between two strings.

```

use strict;

my @score=(AA=>1, GG=>1, CC=>1, TT=>1, ...); #complete

my $s1=...; #a string of your choice using alphabet {A, G, C, T}
my $s2=...; #and another one

#convert the strings to arrays using split
my @a1=split(//, $s1);
my @a2=split(//, $s2);

#now to score position i use $score{$a1[$i].$a2[$i]}
#and use a loop to compute the total score

my $sum=0;
my $i=0;
while ($i<=#a1) {
    $sum=$sum+$score{$a1[$i].$a2[$j]}; #concatenate the two characters
    $i=$i+1;
}
print $score;

```

PART 3

Write a program to do the following:

1. Declare a string of some length of your choice made only of the two characters '(' and ')'
2. Convert the string to an array using the split function
3. Compute the balance of this string, defined as the number of '(' characters minus the number of ')' characters. You will need to use a loop here, and a variable to keep track of the balance.

Remember to use strict and the my declarations.

```

use strict;

my %hash=('(', 1, ')', -1);

my $s=''(())())(((((())((('';

my @a=split(//, $s);

my $balance=0;
my $i=0;
while ($i<=#a) {
    $balance=$balance+$hash{$a[$i]};
    $i=$i+1;
}

print $balance;

```

Here's another way:

```
use strict;

my $s=''(())())((())())';

my @a=split(//, $s);

my $balance=0;
my $i=0;
while ($i<=$#a) {
    if ($a[$i] eq '(') {
        $balance=$balance+1;
    } else {
        $balance=$balance-1;
    }
    $i=$i+1;
}

print $balance;
```