

CS306 – Introduction to Perl
Spring 2006
Homework Assignment #2
Due: Friday, February 10th, 2006

Please see the guidelines on homework #1 on how to submit your homework.

Homework #2

Question 1. What are the differences between arrays and hashes? When is it better to use a hash? When is it better to use an array? Can you think of a scenario where it might be appropriate to use a mixture of the two?

Program 1. Rewrite homework 1, program 5 to use hashes instead of arrays.

Program 2. You have a hash called `%diskspace` that has entries like `$diskspace{joe} = 200`. Your boss asks you to give him a list of users and the amount of disk space they are using, sorted from least to most. Write a program to accomplish this. `%diskspace` should have at least 5 entries. Conveniently for you, no two users are using the exact same amount of disk space.

Question 2. Let's consider for a moment that you are able to redesign Perl. What would be a really nice way to solve the above problem in program 2 in the case where both joe and bob have used exactly 200 mb of disk space? Hint: the fact that Perl array elements and hash keys can only store scalars as their values is a real pain here. What if that were not a restriction?

Program 3. Gas station. You decide to write a tab-tracking program for your gas station. Using a hash and assigning each of your customers a unique name, write a program that initializes everyone's tab to \$0, and then allows the gas station attendant to add purchases to the tab, and receive payments from the users to reduce their tab. The program should also have a mode to print out the current status of all tabs.

Program 4. You have a hash of all your friends' favorite quotes. Here's one way it might look:

```
$quotes{joe} = "You have nothing to fear but fear itself.";
$quotes{amy} = "There are 10 kinds of people in this world, those who can read binary and those that can't.";
$quotes{bob} = "333. I'm only half evil.";
$quotes{lisa} = "Those who would sacrifice liberty for security deserve neither."
```

Write a program to print out the quotes in order of least number of words to most number of words and who likes that quote. Output lines like:

bob's favorite quote is "333. I'm only half evil."

joe's favorite quote is "You have..... and so on.