

CS306 – Introduction to Perl
Spring 2007
Homework Assignment #1
Due: Monday, February 5th, 2007, 12pm

Guidelines for Submitting Homework

All homework should be submitted in the form of a zip file which contains one program for each question. Your zipfile should be named *lastname-hw1.zip* and should contain one text file called *answers.txt* for the written answers, and then files named *hw1p1.pl*, *hw1p2.pl*, *hw1p3.pl*, etc... for the programming assignments. **Make sure your name also appears in all source code files!** Email this zip file to cs306@cis.uab.edu. **When emailing this file email a copy to yourself so you know the email went through ok.**

Homework #1 (200 total points)

Question 1 (20 points). List three ways in which Perl is different from Java.

Question 1 (20 points). In your own words, explain and illustrate the concept of the default variable (`$_`) in Perl. You should include a code sample other than what appeared on the slides, and find at least one Perl function that uses the default variable that we haven't talked about in class (`print`, `chomp` and `<STDIN>` were covered in class).

Notes on programs: While writing these programs below, remember to comment thoroughly, including your name near the top as well as comments throughout explaining what you are doing in your program.

Also, turn on warnings and use `strict`; in all of your programs. Here's how:

```
#!/usr/bin/perl -w  
use strict;
```

The `/usr/bin/perl` part may change depending on your platform; it's the `-w` that is important, as it is what enables warnings.

Read each problem description carefully, and be sure to address everything that is asked for in the problem.

A NOTE ON DEBUGGING: WHEN YOU GET STUCK, PRINT OUT YOUR VARIABLE VALUES AT VARIOUS POINTS IN YOUR PROGRAM. THIS IS OFTEN

THE EASIEST WAY TO FIND WHERE THE CODE IS BROKEN.

Program 1: Guess the Number (50 points)

Write a program which makes the user guess a number between 1-100. Here's how to generate a different random number each time you run the code:

```
$num = int(rand(101));
```

You should then write a loop which asks the user to guess a number until they get it right. After each guess, tell them to guess higher or lower to help them out. When the user guesses the right number, you should tell them so, and then exit.

Program 2: Guess the secret password (50 points)

Write a program which asks a user to guess a secret password. If they don't get it right in three tries, exit the program. The secret word should be "cheeseburger" (case-sensitive!) to make it easy to test, and it can be hard-coded into your program.

Program 3: Geometry (60 points)

Write a program to calculate the area of the following common geometric shapes: a circle, a square, a rectangle and a right triangle. First, ask the user for the type of shape. Use three letter abbreviations cir, squ, rec and tri. Depending on the user's response, you now must ask for one or more lengths (e.g. the radius for a circle, or a height and width for a rectangle). Finally, calculate the area and print the results to the user.

Your program interaction might look something like this:

```
# perl hw1p3.pl
What shape's area are we calculating? (squ, rec, cir or tri) cir
What is the radius of the circle? 2
The area is 12.56636.
```

Remember to.chomp user input before using it in a comparison

BONUS (10 points): Make the choice of shape case-insensitive. i.e. Allow the user to type CIR, cir, cIr, etc.... to indicate a circle.