



SE-1010 Lab 1: Designing Algorithms

Due at the start of class on Friday, September 9, 2011

1. Objectives

- Construct an algorithm to solve a stated problem.
- Draw appropriate flow charts to represent the constructed algorithm

2. Part #1 The Veterinarian's Office

Dr. Meier owns a Veterinarian's office. As such, there are multiple vets in the practice, and each vet has a given specialty. Previously, the practice used human based scheduling. A caller would call in and speak with the receptionist who would determine the correct vet. However, a new online system is to be employed which will automatically determine, based on answers to a series of questions, the correct vet that should be seen.

The program CAN NOT specifically ask what type of animal is to be seen. Rather, by asking other questions, it must deduce the type of animal to be seen. For example, the system may ask what type of organization owns the animal, if the animal is a mammal or not, how many legs it has, whether it is a pet or not, and other similar questions. When all is said and done, the system shall display the appropriate vet that is to be visited.

Veterinarian	Specialty
Dr. Little	Horses, Elephants, Tigers
Dr. Meier	Ferrets, Guinea Pigs, Mice
Dr. Kruske	Cows, Chickens
Dr. Howell	Dogs, Cats
Dr. Stecker	Zebra, Giraffe, Baboon

3. Part #2 The Law offices of Dewey, Cheatem & Howe

The law office of Dewey, Cheatem & Howe is involved in celebrity separations and celebrity divorce filings. As such, it deals with large amounts of money in the settlements. As part of their Sarbains-Oxley filing, they are required to disclose how they calculate the division of assets when a divorce occurs.

In essence, for each dollar that celebrity couple has,

- \$0.50 is given to Dewey, Cheatem & Howe for legal costs
- \$0.30 is given to the wife
- \$0.20 is given to the husband

In order for this to occur, no division operations are used. Instead, the program loops until the remainder is less than \$1.00, at which point the remainder is given to Dewey, Cheatem, & Howe as a performance bonus.

Given this, you are to draw a flowchart for a program which will distribute the assets of the celebrity couple as their separation occurs.



4. Assignment Specifics

The first step of this assignment is to determine the algorithm that you will use to determine the type of animal that you have. You will need to determine which questions to ask of the user as well as the responses that you would expect.

Once you have completed this, you are to draw a detailed flowchart (hint: this may be more than one page in length) that will show the flow.

Moving on to the second part, you are again to determine the algorithm from the text that will be used to determine the payout from the divorce proceeding. You will need to determine what questions to ask as well as the printouts that will be necessary to complete the program.

Once you have completed this, you are to draw a detailed flowchart (hint: this may be more than one page in length) that will show the flow.

5. Lab Deliverables

Submit the following materials in hard copy:

1. Two neatly drawn flowcharts. 11 x 17 paper will be available to provide you with additional working space.
2. A short description of what went wrong and what went right during the lab.
3. A description of what you learned from this lab.

If you have any questions, consult your instructor.