COLBY COLLEGE
Department of Mathematics
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CS115 **Allen B. Downey**
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Homework 3: Void Methods

Due: Wednesday 24 February (if you turn it in at 9am on Monday 22 February, I will hand it back before or at the exam, which is on Wednesday).

Reading: Chapter 3.

More dates

1. This assignment requires you to start with a working solution to Homework 2. If you are happy with your solution, make a copy of it on the desktop, and open it. If not, you can get my solution from the class web page:

   `http://rocky.colby.edu/cs115/solutions/hw2/`

   If you use my solution, you will have to create a CodeWarrior project and paste my code into it.

2. Add a new method called `printAmerican` that takes the day, date, month and year as parameters and that prints them in the American format we used last time.

3. Test your method by invoking it from `main` and passing appropriate arguments. The output should be indistinguishable from what you saw last week (except that the date might be different):

   ```
   American format:
   Wednesday, February 17, 1999
   ```

4. Once you have debugged `printAmerican`, write another method called `printEuropean` that prints the date in European format.

5. Write a new method called `printMartian` that prints the date in the following format:

   ```
   Martian format:
   2171999
   ```

   There is an interesting bug you probably made when you wrote this method. Did you get "2018" the first time? Think about why that happened.

Multadd

Many computations can be expressed concisely using the "multadd" operation, whichtakes three operands and computes `a*b + c`. Some processors provide a hardware implementation of this operation for floating-point numbers.

1. Create a new project called `Multadd`.
2. Write a method called multadd that takes three `double`s as parameters and that prints their multadditionization.
3. In `main` test your method by invoking it with a few simple parameters, like `1.0, 2.0, 3.0`. The result should be `5.0`.
4. Also in `main`, use your method to compute the following values:

$$\sin\frac{\pi}{4} + \frac{\cos\frac{\pi}{4}}{2} \tag{1}$$

$$\log 10 + \log 20 \tag{2}$$

5. Write a method called `yikes` that takes a single double as a parameter and that uses `multadd` to calculate and print

$$xe^{-x} + \sqrt{1 - e^{-x}} \tag{3}$$

   HINT: the Math method for raising e to a power is `Math.exp`.

What to turn in

As usual, clean up your programs by removing dead code, using standard indentation, etc. Add comments to explain how it works (and to identify the program and the author). Print the two programs and write your name in the upper right corner of every page. Staple all the pages together and hand them in.

A note

I realize that many of the things we are doing in lab so far are kind of senseless, but they are mostly intended to let you practice writing programs and get used to working with formal languages (like Java and the mathematical notation in the previous question).

Next week, we will be writing programs that generate graphics, and I think you will have a bit more fun. Hang in there!