

Computer Science 215
Tools and Techniques for Software Development
Summer 2002
Project 1

Due: Friday, 5/24/2002 1:00 p.m.

Program 1

Write a program called `grade.c` that first reads in a month, day, and year as integers. Next, the program takes in three numerical grades (floats): a project grade, a lab grade, and a final exam grade. The project grade is worth 50% of the final grade, while the lab and final exam are worth 20% and 30%, respectively.

Your program should convert the integer month to a string and output the full date as shown below.

Compute the numerical grade according the percentages given above and assign a letter grade based on a 10 point scale (90.0 – 100.0 = A, 80.0 – 89.9999 = B, etc.).

Here's what a sample run of the program might look like:

```
Enter the month: 10
Enter the day: 24
Enter the year: 2000

Enter the project grade: 85.3
Enter the lab grade: 97.0
Enter the final exam grade: 77.0

On October 24, 2000
Average numerical grade: 85.15
Letter grade: B
```

Use both `if` statements and a `switch` statement in your code. Test your program with the above data and with other data as well. Store the results for the example data above in an output file called `grade.txt` using Unix redirection.

(continued on reverse)

Program 2

Write a program called `tempchart.c` that prints out a table of temperatures from 250 K to 300 K by 5 degree increments in Kelvin, Celsius, and Fahrenheit. Your program should compute the equivalent Celsius and Fahrenheit values (in separate functions) based on the Kelvin temperature. Note that

$$C = K - 273$$

$$F = (9/5)C + 32$$

The output should look like this (with appropriate values filled in):

K	C	F
250	-23.0	...
255	-18.0	...
260	-13.0	
265	-8.0	
270	etc.	
275		
280		
285		
290		
295		
300	27.0	80.6