

CS 170 Section 002

HW 3 - Spring 2012

Due Monday, Feb. 25 at the beginning of class

Honor Code:

For all programming assignments, you must write comments at the top of each file which include the following information:

```
/*  
THIS CODE IS MY OWN WORK. IT WAS WRITTEN WITHOUT CONSULTING CODE  
WRITTEN BY OTHER STUDENTS OR MATERIALS OTHER THAN THIS SEMESTER'S  
COURSE MATERIALS. _Your_Name_Here_  
*/
```

Homework submission

Submit (Truncator.java, Verifier.java and Sorter.java) by Feb. 25th at the beginning of class.

Using the terminal, turn in your homework:

Put all three files in the folder CS170 or a subfolder (perhaps CS170/hw3/)

You can create a folder by running the following command (1 line per step):

1) `mkdir ~/cs170/hw3`

2) copy your files to the folder `/home/yourNetID/cs170/hw3` (the one you have just created in step 1)

Using the terminal, run:

3) `cd ~/cs170/` or `cd ~/cs170/hw3` (depending on where you stored your 3 files)

4) `/home/cs170002/turnin-hw Truncator.java hw3a`

5) `/home/cs170002/turnin-hw Verifier.java hw3b`

6) `/home/cs170002/turnin-hw Sorter.java hw3c`

You can submit each of the files as many times as you wish; only the last submitted version will be graded.

Problem 1: Truncator (20 pts)

Create a Java program and name it Truncator.java.

This program reads a string from the keyboard, if its length is more than 5,

truncate it by extracting the last 5 characters (a substring of the original one). If its length is less than or equal to 5, print the string directly.

Example:

Enter a string = Hello Output = Hello

Enter a string = computer Output = puter

// the length of "Hello" is 5

// the length of "computer" is 8

Hints:

You can determine the length of a string:

<http://www.mathcs.emory.edu/~cheung/Courses/170/Syllabus/05/string1.html>

It is possible to get a substring:

<http://www.mathcs.emory.edu/~cheung/Courses/170/Syllabus/05/string1.html>

Problem 2: Calendar Verifier (40 pts)

Create a Java program and name it Verifier.java.

This program reads a string from the keyboard, the format of which is MM/DD/YYYY.

First, check if MM is legal or not. If MM is not between 1 and 12, print "illegal month!". If MM is a value between 1 and 12, check if DD is bigger than the number of days in this month or not. If it is bigger than what it could be, print " illegal day!", otherwise, print "correct".

Month	1	2	3	4	5	6	7	8	9	10	11	12
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Days	31	28	31	30	31	30	31	31	30	31	30	31
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Example:

Enter a date = 15/03/2001 output = illegal month // since 15 is illegal

Enter a date = 02/30/2001 output = illegal day // since there are only 28 days in February

Enter a date = 01/31/2001 output = correct // since there are 31 days in January

Hints:

Extract substrings from the input string, and then convert them to integers.

You may use "switch" or "if-else if-else" statement to get the number of days in a month.

Problem 3: Sorter (40 pts)

Create a Java program and name it Sorter.java.

This program reads three integers from the keyboard, sorts them in descending order.

Example:

Enter the first integer = 12

Enter the second integer = 4

Enter the third integer = 102

Output = 102 12 4

Hints:

You can find examples of finding the maximum of two or three numbers: <http://www.mathcs.emory.edu/~cheung/Courses/170/Syllabus/06/if2.html>