

Write your answers electronically. Turn in your homework as a pdf file via the Web Checkin by Monday February 9th at 11:59pm. You may look on the web or ask a friend for help, but make sure you state/cite what help you have had in completing the assignment. Also ensure that you could answer similar questions on a test by yourself. Hand-written submissions that have been scanned into a pdf file are fine. Total points: 100

1. [20 Points] Regular Expressions

What is the regular expression for a one-line comment in Java? Record the URLs you use as reference in the homework.

2. [20 Points] Regular Expressions to NFA

Draw an NFA for the regular expression for a Java comment.

3. [20 Points] NFA to DFA

Convert the NFA into a DFA.

4. [20 Points] Another example

Draw the NFA and then convert the NFA into a DFA for the following regular expression for val.

```
X:    a | b | c
val:  X*
```

5. [20 Points] Haskell Example

Write a Haskell program that reads in an integer from the command line (look up how to do that) and then counts down from that number to 1, printing each number. Below is the example usage:

```
ghc --make -O2 countDown.hs -o countDown
./countDown 8
8
7
6
5
4
3
2
1
```