

CMSC 430 Programming Exercise

Lexical Analysis

Due Date: Friday, September 20th, 11:59pm.

You are to implement a *DFA minimizer* that converts a regular expression into an NFA, converts the NFA into a DFA, and then minimizes the DFA.

The minimizer produced will then be used to execute the minimized DFA on a number of strings. For each string, it should print the list of states the minimized DFA goes through, and then print either "accept" or "reject".

Any lines of debugging or trace information your program prints should start with the character %. When testing your program, all these lines will be stripped from your program.

Getting Started

To get the materials for this project, type the following line:

```
cp -r ~ctseng/proj1 ~/proj1
```

to copy over the files. You need to set the CLASSPATH environment variable in your .cshrc file. Add in .cshrc the following line:

```
setenv CLASSPATH ./:/usr/local/bin:/home/research2/ctseng/Java
```

Look at the file README for more detailed directions and hints.

The only code you will need to modify is the TG.java file. You will make use of the Transition Graph class defined and implemented in tGraph.java. You should make use of data abstractions found in the Java class libraries Look at the file README for more detailed directions and hints.

Submission Instructions

The DFA minimizer project is due at 11:59pm. You can turn in your TG.java file using the `submit` program. To use `submit`, add the following line to your .login file.

```
alias submit ~ctseng/bin/submit
```

The `submit` program takes as arguments 1) the project number and 2) a list of files to be submitted. To submit your TG.java file, go to your directory containing the minimizer code (~proj1) and type:

```
submit 1 TG.java
```

The `submit` program will accept multiple submissions up to the submission deadline, overwriting previous submissions. Feel free to submit your project as many time as you desire before the deadline.