

# CS3350 – PROJECT

**Language:** Java Programming Language

## What should you do?

Your project will consist of two parts: one individual project and one group project. The groups are those you formed the first day of this semester. If this causes any inconvenience, please let me know by September 15.

- (1) **[INDIVIDUAL PROJECT]** Implement a system:
- whose input is: any regular language; and
  - whose output is: a minimized deterministic complete finite automaton that can be run to check its compliance with the strings of the original language as well as its behavior for invalid strings.

This system should implement at least all of the following functionalities:

- each of the finite automata operators covered in class; that is, union, concatenation, star, plus, complement, intersection;
- the algorithm presented in class that takes an NFA and returns an equivalent DFA;
- the algorithm presented in class that takes an incomplete DFA and returns an equivalent complete DFA; and
- the algorithm that takes a complete DFA and returns the equivalent minimized DFA.

- (2) **[GROUP PROJECT]** Proceed to build, using the above system, the (minimized, deterministic, complete) finite automaton of the practical problem you defined during the first day of class with your group.

## Early deadline

Due on September 17 at noon

Via email to [mceberio@utep.edu](mailto:mceberio@utep.edu) and to [afgarciaccontreras@miners.utep.edu](mailto:afgarciaccontreras@miners.utep.edu)

Subject line: CS3350 – Group Project Team Composition and Topic

Body of the email:

Names of the group members:

Name1: ...

Name2: ...

Etc.

Topic of the application:

Your topic and a short explanation if the title is not self explanatory

**End-of-the-semester deadline**

Due on November 30, 2014 at 11:59pm

Via email to [mceberio@utep.edu](mailto:mceberio@utep.edu) and to [afgarci Contreras@miners.utep.edu](mailto:afgarci Contreras@miners.utep.edu)

**[INDIVIDUAL PROJECT]**

Subject line: CS3350 – Individual Project Submission – “your first and last names”

**[GROUP PROJECT]**

Subject line: CS3350 – Group Project Submission – “first and last names of all members”

**What to submit?****[INDIVIDUAL PROJECT]**

- source code of your project: properly indented and commented, with variables’ names that make sense
- report that describes your work, including a very clear and thorough description of the data structures and class structures you used

**[GROUP PROJECT]**

- report that describes:
  - the machine you built with your group
  - the language this machine recognizes
  - the finite automaton of this language
- the source code of the tools needed to build this machine (e.g., the best of all systems that were individually built by each member of the group)

**More to come on the grading criteria...**