This exercise is based on the paper describing *Lex*[1] in the course readings.

1. List the members of your group below:

2. What is the smallest Lex program?

3. Write a Lex program that yields a lexer that removes all leading and trailing whitespace from each line of the input.

4. Depict a finite-state automaton that may be used internally by the lexer generated by Lex for the program of Question 3.

[1] Michael E. Lesk and Eric Schmidt, "Lex—A Lexical Analyzer Generator," in Andrew G. Hulme and M. Douglas McIlroy (eds.), *UNIX Vol. II: research system*, 10th edition (Philadelphia, Pennsylvania: W. B. Saunders Company, 1990).

5. Provide Lex code for a lexer that replaces all occurrences of 'the Who' with 'The Who' (note case).

6. Provide Lex code for a lexer that replaces all occurrences of 'the Who' with 'The Who' (as in Question 5) and also replaces all occurrences of 'Who ever' with 'Whoever' and 'who ever' with 'whoever'; make your program as concise as possible.

7. Provide Lex code that produces a lexer that interprets its input as a regular expression and that outputs Lex code for a lexer that outputs the matches to that regular expression in its input.