German University in Cairo
Department of Computer Science
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CSEN1002 Compilers Lab, Spring Term 2022
Task 8: ANTLR Lexical Analysis

Due: Week starting 22.05.2022

1 Objective

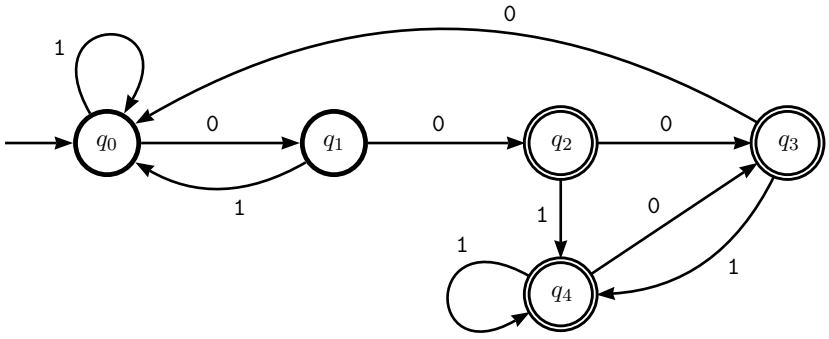
For this task you need to implement a simple lexical analyzer using ANTLR (`www.antlr.org`). Your tutor will introduce you to ANTLR during the session, but you are urged to prepare by taking a look at the ANTLR documentation:

github.com/antlr/antlr4/blob/master/doc/index.md

2 Requirements

- You will implement an ANTLR lexical analyzer for the following fallback DFA. (The fallback DFA is encoded as in the Task 4 description document.)

`0,1,0,;1,2,0,;2,3,4,Q2;3,0,4,Q3;4,3,4,Q4#2,3,4`



- For example, running the lexical analyzer implementing the above FDFA on the string `00010001` produces the output `00010,Q3;001,Q4;`.
- Important Details:
  - Your implementation should be done within the template file which is uploaded to the CMS.
  - You are not allowed to change the grammar or lexer rule names.
  - You are allowed to write as many helper fragment lexer rules within the same grammar file (if needed).
  - Public test cases have been provided on the CMS for you to test your implementation.

- Please ensure that the public test cases run correctly without modification before coming to the lab to maintain a smooth evaluation process.
- A Java file is provided in order to easily test your grammar with custom strings in addition to the public test cases.
- Private test cases will be uploaded before your session and will have the same structure as the public test cases.

3 Evaluation

- Your implementation will be tested on ten input strings.
- You get one point for each correct output; hence, a maximum of ten points.

4 Online Submission

- You should submit your code at the following link.

  https://forms.gle/YZmWKLBNKZjKCG6x7

- Submit one file "`Task8.G4`" containing executable code.
- Online submission is due on Thursday, May 26th, by 23:59.