German University in Cairo
Department of Computer Science
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CSEN1002 Compilers Lab, Spring Term 2020
Task 9: ANTLR Parsing 2

Due: 15.05.2020 by 23:59

1 Objective

For this task you will use ANTLR to implement an SDT or an SDD for transforming lists of digits from a Common Lisp internal representation as dotted pairs to the more readable representation as comma-separated sequences.

2 Requirements

- In Common Lisp, a non-empty list of digits is internally represented by a dotted pair $(f \cdot r)$, where f is a digit and r is a list of digits; empty lists are internally represented by the constructor `nil`.
- Write an SDT or an SDD to translate from the internal Lisp representation of digit lists to the more readable representation where a list of digits is denoted by a (possibly empty) comma-separated sequence of digits between parentheses.
- Here are some examples.

Input	**Output**
`(1 . (2 . nil))`	`(1, 2)`
`nil`	`()`
`(1 . nil)`	`(1)`

- The output should be the value of an attribute `val` of the start variable of your grammar.

3 Evaluation

Your SDD will be tested using ten inputs. Each correct output is worth one point, hence a total of ten points.

4 Submission Instructions

- The submission deadline is May 15, 2020 by 23:59. Late submissions will receive zero credit; thus, make sure that you do not submit at the last moment to avoid delays due to any unpleasant technical surprises.

- Please submit only one grammar file named after your tutorial number, ID, and name (with the extension "`.g4`") using the following format.

  $$\texttt{T}XX\_YY\_ZZZZ\_Name\texttt{.g4}$$

  For example, the following is a possible file name.

  `T07_37_0000_John_Smith.g4`

- Use the template file posted with this description to the course web site.
- Submissions which are not in the required format will not be considered.
- You will receive an e-mail containing the submission link.