
Lispereter Documentation

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Muhammad Arslan

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A personal project to create a Lisp interpreter with Python.

Any suggestions/reviews are welcome.

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CHAPTER 1

Overview

An attempt to improve my python skills.

Suggested at <http://pythonpracticeprojects.com/>.

CHAPTER 2

Parser

The parser functions and their brief description.

`lispereter.parser.atom(token: str) -> (<class 'str'>, (<class 'int'>, <class 'float'>))`
Numbers become numbers; every other token is a symbol.

Args: token (str): A symbol or a number

```
>>> atom("11")
11
>>> atom(11)
11
```

```
>>> atom("11.0")
11.0
```

```
>>> atom("begin")
'begin'
```

`lispereter.parser.parse(program: str) -> ((<class 'str'>, (<class 'int'>, <class 'float'>)), <class 'list'>)`
Read a Scheme expression from a string.

Args: program (str): A given Scheme expression

```
>>> parse("(begin (define r 10) (* pi (* r r)))")
['begin', ['define', 'r', 10], ['*', 'pi', ['*', 'r', 'r']]]
```

`lispereter.parser.read_from_tokens(tokens: list) -> ((<class 'str'>, (<class 'int'>, <class 'float'>)), <class 'list'>)`
Read an expression from a sequence of tokens.

Args: tokens (list): A list of tokens generated by `tokenize(chars)`

```
>>> read_from_tokens(['(', 'begin', '(', 'define', 'r', '10', ')', '(', '*', 'pi',
→ '(', '*', 'r', 'r', ')', ')', ')'])
['begin', ['define', 'r', 10], ['*', 'pi', ['*', 'r', 'r']]]
```

`lispereter.parser.tokenize` (*chars: str*) → list

Convert a string of characters into a list of tokens.

Args: *chars* (str): The input to be tokenized.

```
>>> tokenize("(begin (define r 10) (* pi (* r r)))")
['(', 'begin', '(', 'define', 'r', '10', ')', '(', '*', 'pi', '(', '*', 'r', 'r',
↪ ')', ')', ')']
```

CHAPTER 3

Indices and tables

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