

CSE-210A

HOMEWORK 1 REPORT

Interpreter for the ARITH language

Submitted By:

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Details of arith.py:

Language Used	Python 3.7.6
Data structure for AST	Tree
Parser	Line 159 => <code>class Parser(object)</code> 'expr' function (Line 227) parses all the tokens and creates an AST
Interpreter	Line 280 => <code>class Interpreter(NodeVisitor)</code> 'eval' function (Line 307) takes an AST and returns the final result
Extra features added	Subtraction, Division, Brackets
Custom test cases	tests/custom.bats

Custom Test Cases:

(base) RASHMIs-MacBook-Pro:tests rashmichennagiri\$ cat custom.bats

load harness

```
@test "custom-1" {
  check '7 + 3 * (10 / (12 / (3 + 1) - 1)) / (2 + 3) - 5 - 3 + (8)' '10.0'
}
@test "custom-2" {
  check '5 - - - + - (3 + 4) - +2' '10'
}
@test "custom-3" {
  check '7 + (((3 * 2)))' '13'
}
@test "custom-4" {
  check '14 + 2 * 3 - 6 / 2' '17.0'
}
@test "custom-5" {
  check '3' '3'
}
```

Execution of Custom + Provided Test Cases:

```
hw1 — -bash — 94x65
[(base) RASHMIs-MacBook-Pro:hw1 rashmichennagiri$ ]
[(base) RASHMIs-MacBook-Pro:hw1 rashmichennagiri$ ]
[(base) RASHMIs-MacBook-Pro:hw1 rashmichennagiri$ ./test.sh ]
rm -fr build/
rm -fr dist/
rm -fr .eggs/
find . -name '*.egg-info' -exec rm -fr {} +
find . -name '*.egg' -exec rm -f {} +
find . -name '*.pyc' -exec rm -f {} +
find . -name '*.pyo' -exec rm -f {} +
find . -name '*~' -exec rm -f {} +
find . -name '__pycache__' -exec rm -fr {} +
rm -fr .tox/
rm -f .coverage
rm -fr htmlcov/
python arith.py install
7 + 3 * (10 / (12 / (3 + 1) - 1)) / (2 + 3) - 5 - 3 + (8)
10.0
5 - - - + - (3 + 4) - +2
10
7 + (((3 * 2)))
13
14 + 2 * 3 - 6 / 2
17.0
3
3
✓ custom-1
✓ custom-2
✓ custom-3
✓ custom-4
✓ custom-5
✓ easy-1
✓ easy-2
✓ easy-3
✓ easy-4
✓ easy-5
✓ easy-6
✓ easy-7
✓ easy-8
✓ easy-9
✓ easy-10
✓ easy-11
✓ easy-12
✓ easy-13
✓ easy-14
✓ easy-15
✓ easy-16
✓ easy-17
✓ easy-18
✓ easy-19
✓ easy-20
✓ medium-1
✓ medium-2
✓ medium-3
✓ medium-4
✓ medium-5
✓ medium-6
✓ medium-7
✓ medium-8
✓ medium-9
✓ medium-10

35 tests, 0 failures

(base) RASHMIs-MacBook-Pro:hw1 rashmichennagiri$
```