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CSE 210A - Programming Languages

January 22, 2021

Homework 2: WHILE Interpreter

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..210A - Programming Languages/cse210A-asgtest-master/cse210A-asgtest-hw2-while --- -zsh | ~/Desktop/Graduate School/2021/CSE210A
(base) robertsato@eduroam-169-233-201-101 cse210A-asgtest-hw2-while % ./test.sh
rm -rf while
rm -rf *.pyc
cp asgn2.py while
chmod u+x while
/usr/bin/readlink: illegal option -- f
usage: readlink [-n] [file ...]
✓ 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
✓ hard-1
✗ hard-2
(from function 'check' in file tests/harness.bash, line 6,
 in test file tests/hard.bats, line 8)
'check 'if ( 1 - 1 ) < 0 then z8 := 09 else z3 := 90' '{z3 - 90}'' failed
if ( 1 - 1 ) < 0 then z8 := 09 else z3 := 90 = {z3 - 90}, your code outputs
File './while', line 681, in <module>
  node = parser.parse()
File './while', line 526, in parse
  return self.c_expr()
File './while', line 518, in c_expr
  node = self.get_command()
File './while', line 496, in get_command
  cond = self.b_expr()
File './while', line 424, in b_expr
  node = self.b_term()
File './while', line 436, in b_term
  node = self.b_factor()
File './while', line 463, in b_factor
  self.eat(RPAREN)
File './while', line 368, in eat
  self.error()
File './while', line 358, in error
  raise Exception('Invalid syntax')
Exception: Invalid syntax
✓ hard-3
```

```
..210A - Programming Languages/cse210A-asgtest-master/cse210A-asgtest-hw2-while --- -zsh | ~/Desktop/Graduate School/2021/CSE210A
Exception: Invalid syntax
✓ hard-3
✓ hard-4
✓ hard-5
✓ hard-6
✓ hard-7
✓ hard-8
✓ hard-9
✓ hard-10
✓ hard-11
✓ hard-12
✓ hard-13
✗ hard-14
(from function 'check' in file tests/harness.bash, line 6,
 in test file tests/hard.bats, line 56)
'check 'while z * x = -3 A 3 * x = z + R do z := y * z ; y := 1 - 0' '{y - 1}'' failed
while z * x = -3 A 3 * x = z + R do z := y * z ; y := 1 - 0 = {y - 1}, your code outputs
✓ hard-15
✓ hard-16
✓ hard-17
✓ hard-18
✓ medium-1
✓ medium-2
✓ medium-3
✓ medium-4
✓ medium-5
✓ medium-6
✗ medium-7
(from function 'check' in file tests/harness.bash, line 6,
 in test file tests/medium.bats, line 28)
'check 'while false do x := 1 ; if true then y := 1 else z := 1' '{y - 1}'' failed
while false do x := 1 ; if true then y := 1 else z := 1 = {y - 1}, your code outputs {}
✗ medium-8
(from function 'check' in file tests/harness.bash, line 6,
 in test file tests/medium.bats, line 32)
'check 'while false do x := 1 ; y := 1' '{y - 1}'' failed
while false do x := 1 ; y := 1 = {y - 1}, your code outputs {}
✓ medium-9
✓ medium-10
✓ medium-11
✓ medium-12
✓ medium-13
✗ medium-14
(from function 'check' in file tests/harness.bash, line 6,
 in test file tests/medium.bats, line 56)
'check 'while false do x := 1 ; if true then y := 1 else z := 1' '{y - 1}'' failed
while false do x := 1 ; if true then y := 1 else z := 1 = {y - 1}, your code outputs {}
✗ medium-15
(from function 'check' in file tests/harness.bash, line 6,
 in test file tests/medium.bats, line 60)
'check 'while false do x := 1 ; y := 1' '{y - 1}'' failed
while false do x := 1 ; y := 1 = {y - 1}, your code outputs {}

56 tests, 6 failures
(base) robertsato@eduroam-169-233-201-101 cse210A-asgtest-hw2-while %
```

My implementation follows closely to last week's ARITH interpreter. I tokenize the input, parse it into an AST, and interpret the AST. This interpreter was much more complex as I had to implement boolean expressions and commands. I was unable to pass all of the test cases.