

# CSE-210A

## HOMEWORK 4 REPORT

### Small-step Interpreter for the WHILE language

#### Submitted By:

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#### Details of while-ss.py:

Language Used	Python 3.7.6, Pyinstaller 3.6
Data structure for AST	Tree
Custom test cases	tests/custom.bats

#### Execution of Custom + Provided Test Cases:

```
[(base) RASHMIs-MacBook-Pro:hw4 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 while-ss.py install
i := 3; fact := 1; while 0 < i do { fact := fact * i; i := i - 1 }
⇒ skip; fact := 1; while (0 < i) do { fact := (fact*i); i := (i-1) }, {i → 3}
⇒ fact := 1; while (0 < i) do { fact := (fact*i); i := (i-1) }, {i → 3}
⇒ skip; while (0 < i) do { fact := (fact*i); i := (i-1) }, {fact → 1, i → 3}
⇒ while (0 < i) do { fact := (fact*i); i := (i-1) }, {fact → 1, i → 3}
⇒ fact := (fact*i); i := (i-1); while (0 < i) do { fact := (fact*i); i := (i-1) }, {fact → 1, i → 3}
⇒ skip; i := (i-1); while (0 < i) do { fact := (fact*i); i := (i-1) }, {fact → 3, i → 3}
⇒ i := (i-1); while (0 < i) do { fact := (fact*i); i := (i-1) }, {fact → 3, i → 3}
⇒ skip; while (0 < i) do { fact := (fact*i); i := (i-1) }, {fact → 3, i → 2}
⇒ while (0 < i) do { fact := (fact*i); i := (i-1) }, {fact → 3, i → 2}
⇒ fact := (fact*i); i := (i-1); while (0 < i) do { fact := (fact*i); i := (i-1) }, {fact → 3, i → 2}
⇒ skip; i := (i-1); while (0 < i) do { fact := (fact*i); i := (i-1) }, {fact → 6, i → 2}
⇒ i := (i-1); while (0 < i) do { fact := (fact*i); i := (i-1) }, {fact → 6, i → 2}
⇒ skip; while (0 < i) do { fact := (fact*i); i := (i-1) }, {fact → 6, i → 1}
⇒ while (0 < i) do { fact := (fact*i); i := (i-1) }, {fact → 6, i → 1}
⇒ fact := (fact*i); i := (i-1); while (0 < i) do { fact := (fact*i); i := (i-1) }, {fact → 6, i → 1}
⇒ skip; i := (i-1); while (0 < i) do { fact := (fact*i); i := (i-1) }, {fact → 6, i → 1}
⇒ i := (i-1); while (0 < i) do { fact := (fact*i); i := (i-1) }, {fact → 6, i → 1}
⇒ skip; while (0 < i) do { fact := (fact*i); i := (i-1) }, {fact → 6, i → 0}
⇒ while (0 < i) do { fact := (fact*i); i := (i-1) }, {fact → 6, i → 0}
⇒ skip, {fact → 6, i → 0}
```

```
hw4 — -bash — 96x60
⇒ skip; i := (i-1); while (0<i) do { fact := (fact*i); i := (i-1) }, {fact → 6, i → 1}
⇒ i := (i-1); while (0<i) do { fact := (fact*i); i := (i-1) }, {fact → 6, i → 1}
⇒ skip; while (0<i) do { fact := (fact*i); i := (i-1) }, {fact → 6, i → 0}
⇒ while (0<i) do { fact := (fact*i); i := (i-1) }, {fact → 6, i → 0}
⇒ skip, {fact → 6, i → 0}
✓ 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-12
✓ easy-13
✓ easy-14
✓ easy-15
✓ easy-16
✓ easy-17
✓ hard-1
✓ hard-2
✓ hard-3
✓ hard-4
✓ hard-5
✓ hard-6
✓ hard-7
✓ hard-8
✓ hard-9
✓ hard-10
✓ hard-11
✓ hard-12
✓ hard-13
✓ hard-14
✓ hard-15
✓ hard-16
✓ hard-17
✓ hard-18
✓ hard-19
✓ hard-20
✓ medium-1
✓ medium-2
✓ medium-3
✓ medium-4
✓ medium-5
✓ medium-6
✓ medium-7
✓ medium-8
✓ medium-9
✓ medium-10

51 tests, 0 failures

(base) RASHMIs-MacBook-Pro:hw4 rashmichennagiri$
```