CS335

Milestone 3

Ashish Meena   Udhav Varma   Yuvraj Kharayat

1 Features Supported

The following language features are supported by Pyxler:

- Primitive data types (e.g., integers, strings, list and boolean)
- Single dimensional arrays with support for C-style declarations
- Basic Operators:
  - Arithmetic operators: +, -, *, /
  - Preincrement, predecrement, postincrement, and postdecrement
  - Relational operators: $==, \neq, >, <, \geq, \leq$
  - Bitwise operators: $\&, |, \hat{}, \sim, \ll, \gg, \ggg$
  - Logical operators: &&, ——, !
  - Assignment operators: =, +=, -=, *=, /=, &=
- Control flow via if-else, for, and while
- Support for recursion
- Support the library function print() for integers and strings

2 Extra Restrictions

- Each argument in a function needs a type. (self maybe named any type).
- Each function needs a return type.

3 Running Compiler

The implementation of the Parser and Lexer is in Flex+Bison, written in C++. Further, DOT is used to create an AST. If these are not already installed, the following commands should be executed:

```
sudo apt-get update

sudo apt-get install flex

sudo apt-get install bison

sudo apt-get install graphviz
```

Instructions for running the code:-

```
Move to milestone3/src

make

./mile [location of testcase]

gcc -o test x86.s -no-pie

./test
```

Alternatively one can Use the CLI tool run.py as follows:-

python3 run.py [-h] −−input INPUT [−−output OUTPUT] [−−verbose]

Arguments

1. INPUT - This is the location of the input python file, this is a mandatory argument.

2. OUTPUT - This is the location of the output PDF file, this is an optional argument.

3. The −−verbose flag gives the detailed trace of construction of the tree. The -h option can be used for help in running the script.

4 Unsupported Features

The following features are not supported:-

- The typechecking is not complete and extensive.
- Floats and doubles are not supported.
- String comparison is not supported.

5 Contribution

Name	Roll Number	Email	Contribution
Ashish Meena	210214	ashishm21@iitk.ac.in	33%
Udhav Varma	211120	udhavv21@iitk.ac.in	33%
Yuvraj Kharayat	211208	yuvraj21@iitk.ac.in	34%