

CS335

Milestone 3

ASHISH MEENA

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1 Features Supported

The following language features are supported by Pyxler:

- Primitive data types (e.g., int, long, float, double, 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: $\&$, $|$, \wedge , \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

2 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.

3 Unsupported Features

The following features are not supported:-

- Support for Multi-Dimensional arrays is not provided
- Classes and objects are not supported
- We supported full-fledged type casting till the 3AC stage and prohibited lossy conversions. For simplicity in stack manipulation, we did not support smaller integral types in Milestone
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4 Contribution

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