

CS335 : Milestone 3

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Tools and Utilities used

- Flex is used for our lexer, which is integrated with the parser. It returns tokens.
- Bison is used for implementing the parser.
- Make utility is used for automatic tracking for files and compilation.
- python is used to provide automatic test runs.

Features implemented

- We have implemented all the basic features in the description.
- Type checking for every operator and datatype
- C style interclass communication
- Expression of every type
- Stack manipulation supporting local variable and array declaration
- pushparam and popparam function support

3ac Functions we have used

- pushparam and popparam for pushing the parameter on stack it changes stack pointer as well
- For local variable declaration we have manipulated the stack pointer ourselves
- Classes are allotted in a heap and a pointer is returned to allotted memory. Arrays are allotted on the stack.

- Object initiation is done using creating prefixed copies of the existing 3ac code of the corresponding object definition.
- `println` function is supported only for single variable/argument.

Instructions for Compilation

- Please change directory into `./milestone3/src/`
- Execute `make`
- Execute `./a.out -input ./path/input.java -output ./path/output` to give input and output.
- Note that `-input` should be space separated from input path, as should be `-output` from output path. The symbol table is provided in `output_symtable.csv` while 3ac in `output_3ac.txt`

Command line options

- `-input` : Can be used to set the input to the file that needs to be parsed. The path is expected to be space separated from `-input`. Path can not be empty, it needs to be set.
- `-output` : Can be used to set the output prefix. Any errors that may exist will be shown on the terminal via `stderr`. The path is expected to be space separated from `-output`. Path can not be empty, it needs to be set. Two files with this prefix will be created, `3ac.txt`, `sym_table.csv`.
- `-verbose` : On turning this on, verbose logs of parsing are provided.

Instructions for Running test cases

- We have provided 10 non-trivial programs that may be compiled using the current compiler.
- We have provided an easy python script to automate the testing of these testcases.
- Please change directory into `./milestone3/`
- Execute `python run.py`
- The tests are named `./tests/test-[1-10].java`, corresponding outputs include `./outputs/[1-10]_symtable.csv` and `./outputs/[1-10]_3ac.txt`.