

# CS335: Milestone 2

Group 14

## Members:

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**Source Language (S):** *C*

**Implementation Language (I):** *Python3*

**Target Language (T):** *X86 Assembly*

**Repo Link:** <https://github.com/SupreethBaliga/Compilers/>

```
TOP
├── src/
│   ├── lexer.py
│   └── parser.py
├── tests/
│   └── (Contains all tests for respective milestones)
├── PDFs
│   └── (Contains the corresponding PDF files for milestones)
├── dot
│   └── (Contains the dot files corresponding to the input given)
├── ASTgraphs
│   └── (Contains the graphical view of the constructed ASTs of the input codes)
├── tmp
│   └── (Contains temporary files created by the parser)
├── requirements.txt
├── install.sh
├── lex.sh
├── parser.sh
├── README.md
└── .gitignore
```

## Instructions to run:

- Install all the python modules and set up virtual environment by executing `$ install.sh`
- Activate the virtual environment by running: `$ source venvcompiler/bin/activate`
- To use the lexer execute `$ ./parser.sh` and provide the test file(s) as command line arguments

## Output of '\$ git show parser ':

```
commit 67055e45f21ad99884ddfb0008e476220648b67
Author: Supreeth Baliga <42595858+SupreethBaliga@users.noreply.github.com>
Date:   Wed Mar 10 19:47:36 2021 +0530
```

Update README.md

```
diff --git a/README.md b/README.md
index 5da23a3..ec23358 100644
--- a/README.md
+++ b/README.md
@@ -13,7 +13,9 @@
```

```
### Milestone - 2:
* To use the parser execute parser.sh and provide the test file(s) as command line arguments
-* The available flags can be listed with *-h/--help*
+* The available flags can be listed with *-h/--help* (We have added the -l flag which displays
the lexer token table)
+* Note that we have already added the corresponding dot files and ps files for the provided
non-trivial testcases
+
## Group Members :boy:
```

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| Name | Roll Number |
```

## Points to Note:

- We needed to change our lexer file to align it with the grammar rules.
- We have included declarations in the AST as well. It is just our choice of design and we have created nodes accordingly to denote that they are declarations.
- The ANSI standard link that was provided was not in accordance with the modern C standard. Some changes in the grammar needed to be made.
  - The ANSI standard link only allowed for declarations to be done first and then all the statements. We modified it so that the program can now have mixture of declarations and statements without any positional restriction enforced by ANSI-C.
  - Similarly, the ANSI-C grammar does not allow us to declare variables within the initialization statement of a for loop. We modified it accordingly.
- Tests for Milestone-2 have been provided in a different directory (tests/Milestone2/).
- A new script parser.sh is provided to run the parser. To check the available flags, run parser.sh with -h[help].