

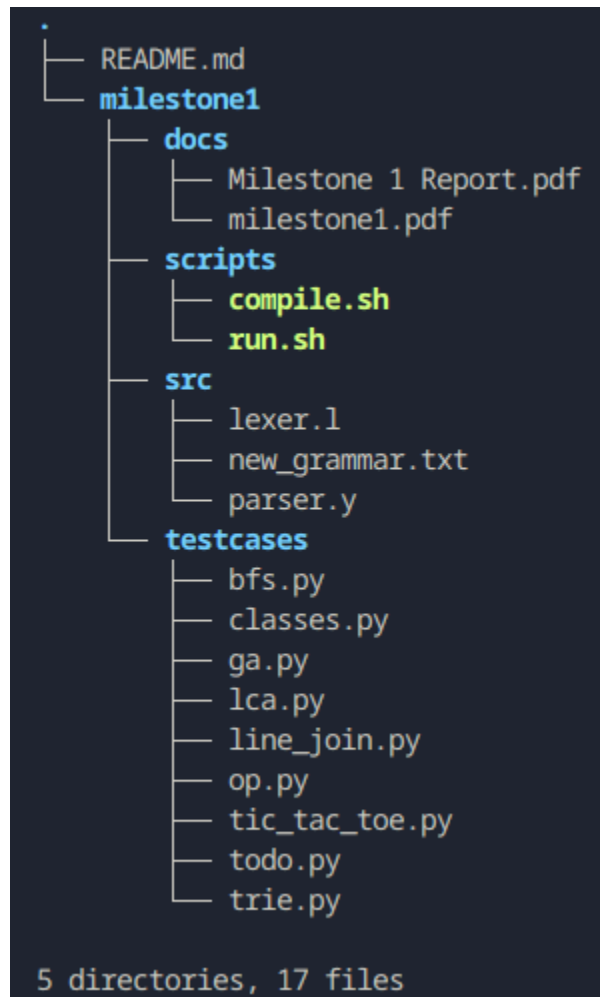
Pythoneers: Milestone 1 Report

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Code Base Structure



Requirements

To run the program, you will need the latest versions of `bison`, `flex` and `graphviz`.

Usage

We have provided a script to run the program in the `scripts/` directory. The output `dot` file and `pdf` file will be generated in the `src/` directory. Run the following commands:

```
cd scripts
./run.sh --input=<input_file_path> [options]
```

The following options can be used

```
--output=<output_file_path>      : Output file specification (default is
                                   ast.dot and ast.pdf)
--colorop=<color>                 : Color for operator nodes in the AST
--colordelim=<color>             : Color for delimiter nodes in the AST
--colorkey=<color>               : Color for keyword nodes in the AST
--help                           : Instruction regarding usage
                                   instructions and options
--verbose1                       : Prints our custom debug statements
                                   while reducing a production
--verbose2                       : Prints the complete stack trace of the
                                   parser execution
```

Providing the input file is necessary via the `--input` flag. The program will terminate and throw an error if the input file is not specified.

You can provide your own colors for operators, delimiters and keywords in the AST as described in the usage above. The default color coding in the generated AST is as follows:

OPERATORS **KEYWORDS** **DELIMITERS** **NAMES** **OTHERS**

Conventions Followed

We have considered assignment (`=`) and augmented assignment (eg : `+=`) as operators for graph color coding.

Optional Features Included

We have supported the following extra features:

- List Comprehension
- Dictionary
- Dictionary Comprehension
- `try / except`
- multi-dimensional list
- f-string
- Implicit and Explicit Line Joining

Building AST from Parse Tree

- We removed non-terminal nodes which were single children of some other node.
- We have not included `NEWLINE`, `INDENT` and `DEDENT` terminals in the AST to make it less cluttered.
- Operators (including assignment and augmented assignment) have been shifted up so that the operands are their children.