User Manual

## How To Run The Compiler

Create a `.txt` file with the inputted source program in the root and run the following in the root:

* python parse\_file.py <input\_program\_path>.txt --check-scopes --type-check --emit-basic

If the program contains any errors, these will appear in the terminal.   
If the program is well typed, then it will emit two files (`<filename>.int.txt` is irrelevant to mark):

* `<filename>.html`: The intermediate code of the inputted source program
* `<filename>.basic.txt`: The intermediate code suitable for BASIC Emulators

## Running the BASIC Emulator

Take the code from `<filename>.basic.txt` and enter it into Owlet BBC BASIC Editor:   
<https://bbcmic.ro>

Or any online BASIC Emulator. We know the above one works for our input.   
If using OneCompiler, make sure to include `#lang “qb”` at the top.

## Requirements

* Python 3.10+

## Running Individual Phases of The Compiler

Lexer:

* python dump\_tokens.py <input\_program\_path>.txt

Parser and AST Tree:

* python parse\_file.py <input\_program\_path>.txt
* python parse\_file.py <input\_program\_path>.txt --print-ast

Scope Checker and view Symbol Table:

* python parse\_file.py <input\_program\_path>.txt --check-scopes --dump-scopes

Type Checker:

* python parse\_file.py <input\_program\_path>.txt --type-check

Intermediate Code Generation (to an `\*.html` file):

* python parse\_file.py <input\_program\_path>.txt --codegen

Emit BASIC (to a `\*.basic.txt` file)

* python parse\_file.py <input\_program\_path>.txt --emit-basic

All together

* python parse\_file.py <input\_program>.txt --check-scopes --type-check --emit-basic