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Assignment 3 (150 points)

Due Date: 5/1/2019 (11:59pm)

In this assignment, you are going to write a python program to implement a symbol that is used to examine the variable declarations. If the program parses successfully, print out the symbol table; otherwise print out an error message.

Submission: *Submit the .py file to blackboard*

The first example is a valid program

```
# This is a test program
PROGRAM Test;
VAR
  num1      : INTEGER;    ## this is an integer
  num2, num3 : INTEGER;
  num4      : REAL;      ## this is a float point

BEGIN
  num1 := 2;
  num2 := 3 * (3 + num1);
  num3 := 10 * num2;
  num4 := (num3 + (2 * num2)) / num1;
END
```

```
>> python Compiler.py test1.txt
Program has been parsed successfully ...
```

Index	Symbol Name	Symbol Type
0	num4	ID
1	num1	ID
2	num2	ID
3	num3	ID
4	Test	ID
5	10	CONST
6	3	CONST
7	2	CONST

This example is an **invalid** program

```
# This is a test program
PROGRAM Test;
VAR
  num1      : INTEGER;  ## this is an integer
  num2, num3 : INTEGER;
  Test      : REAL;     ## Test is redefined here

BEGIN
  num1 := 2;
  num2 := 3 * (3 + num1);
  num3 := 10 * num2;
  num4 := (num3 + (2 * num2)) / num1;  ## num4 is undefined
END
```

```
>> python Compiler.py test2.txt
Error: Invalid Syntax ... 'Test redefined'
```

This example is an **invalid** program

```
# This is a test program
PROGRAM Test;
VAR
  num1      : INTEGER;  ## this is an integer
  num2, num3 : INTEGER;
  num4      : REAL;     ## this is a float point

BEGIN
  num1 := 2;
  num2 := 3 * (3 + num1);
  num3 := 10 * num5;     ## num5 is undefined
  num4 := (num3 + (2 * num2)) / num1;
END
```

```
>> python Compiler.py test3.txt
Error: Invalid Syntax ... 'num5 undefined'
```

Submission

Submit the python program via blackboard



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