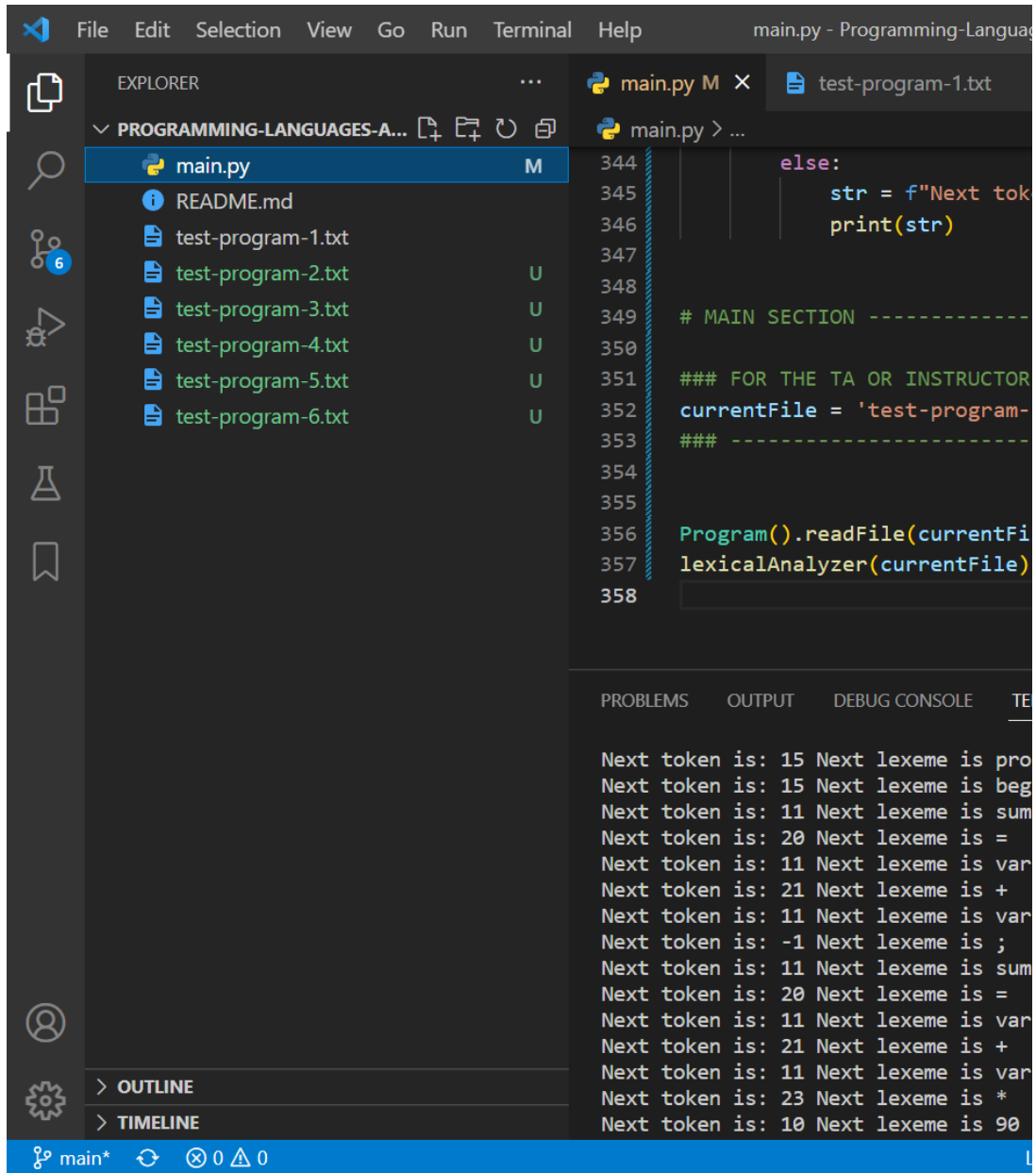


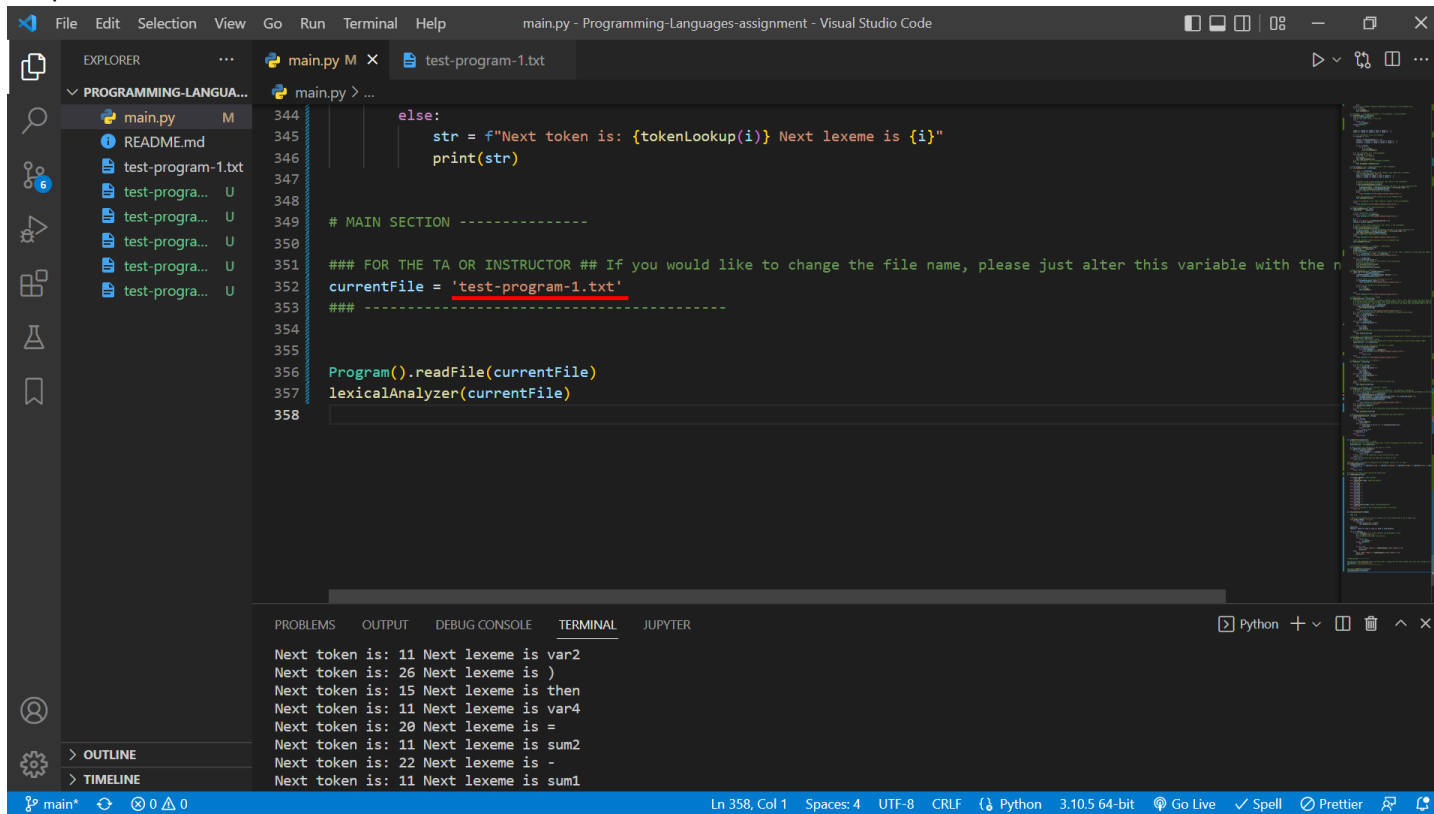
PROGRAMMING ASSIGNMENT COSC3127

1. All files:



The correct input test file is test-program-1.txt

2. Output of first file:

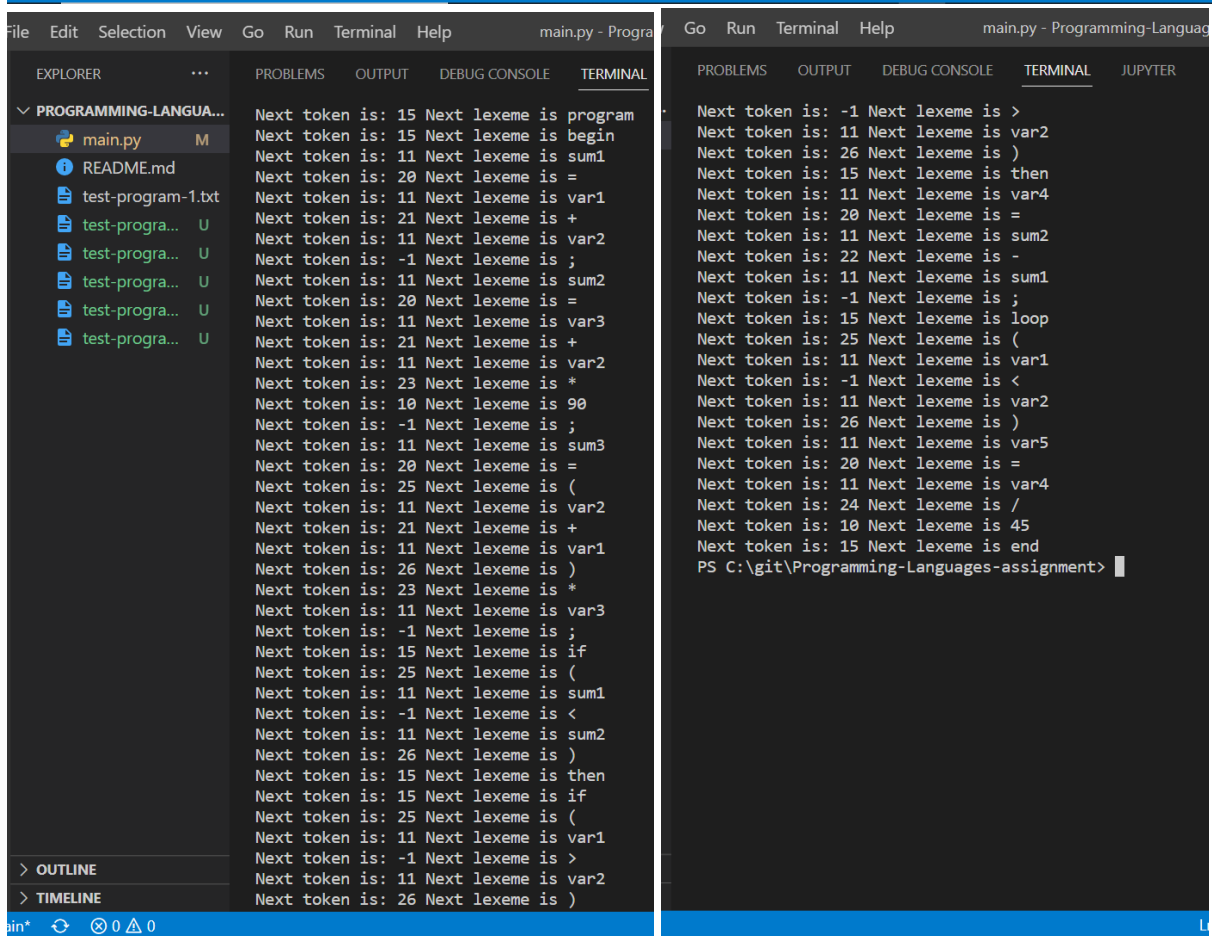


The screenshot shows the Visual Studio Code editor with the file `main.py` open. The code defines a `Program` class with a `readFile` method and a `lexicalAnalyzer` method. The `main` function calls `Program().readFile(currentFile)` and `lexicalAnalyzer(currentFile)`. The terminal output shows the results of the lexical analysis for the file `test-program-1.txt`.

```
main.py M X test-program-1.txt
main.py > ...
344     else:
345         str = f"Next token is: {tokenLookup(i)} Next lexeme is {i}"
346         print(str)
347
348
349     # MAIN SECTION -----
350
351     ### FOR THE TA OR INSTRUCTOR ## If you would like to change the file name, please just alter this variable with the n
352     currentFile = 'test-program-1.txt'
353     ### -----
354
355
356     Program().readFile(currentFile)
357     lexicalAnalyzer(currentFile)
358
```

TERMINAL

```
Next token is: 11 Next lexeme is var2
Next token is: 26 Next lexeme is )
Next token is: 15 Next lexeme is then
Next token is: 11 Next lexeme is var4
Next token is: 20 Next lexeme is =
Next token is: 11 Next lexeme is sum2
Next token is: 22 Next lexeme is -
Next token is: 11 Next lexeme is sum1
```



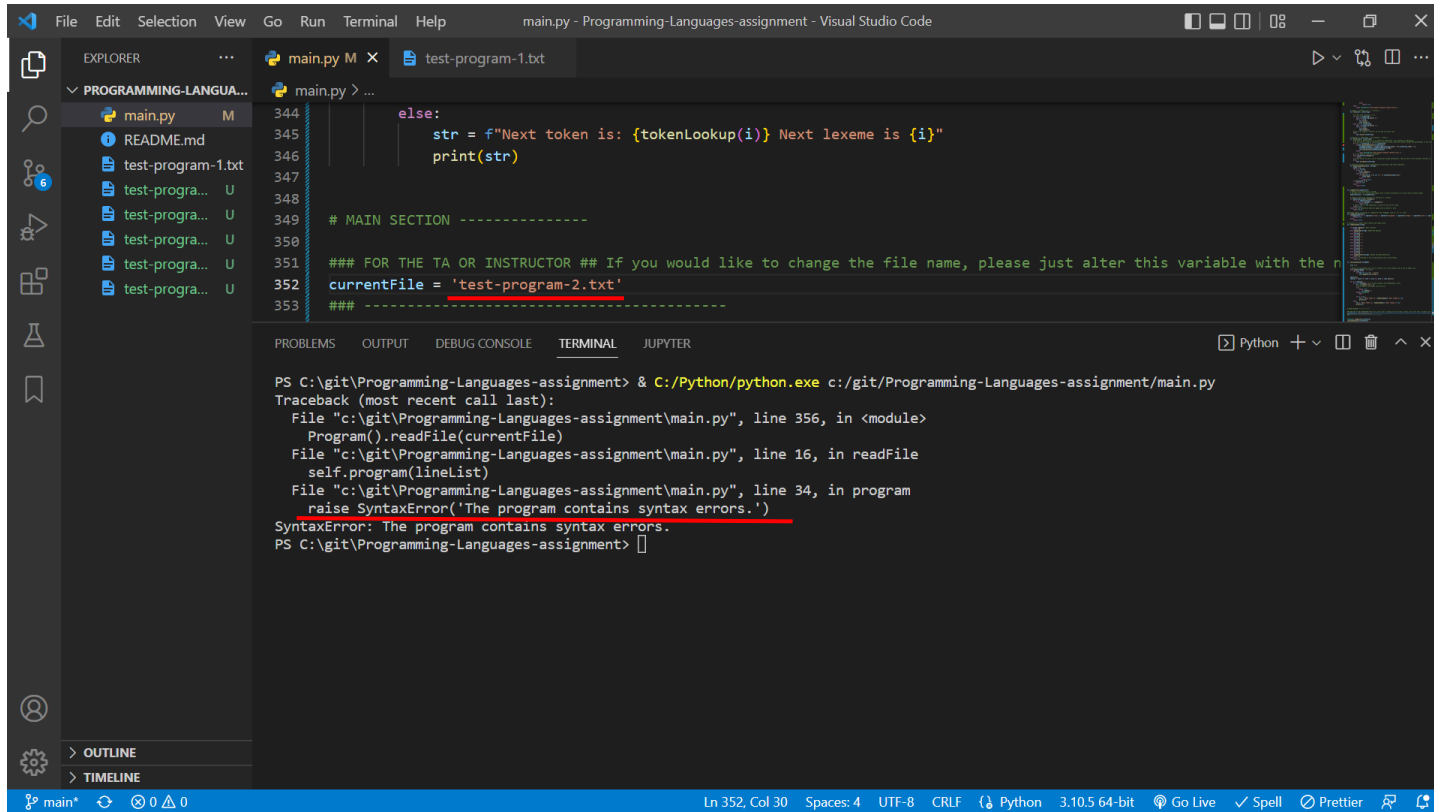
The screenshot shows the Visual Studio Code editor with the file `main.py` open. The code defines a `Program` class with a `readFile` method and a `lexicalAnalyzer` method. The `main` function calls `Program().readFile(currentFile)` and `lexicalAnalyzer(currentFile)`. The terminal output shows the results of the lexical analysis for the file `test-program-1.txt`.

```
main.py M X test-program-1.txt
main.py > ...
344     else:
345         str = f"Next token is: {tokenLookup(i)} Next lexeme is {i}"
346         print(str)
347
348
349     # MAIN SECTION -----
350
351     ### FOR THE TA OR INSTRUCTOR ## If you would like to change the file name, please just alter this variable with the n
352     currentFile = 'test-program-1.txt'
353     ### -----
354
355
356     Program().readFile(currentFile)
357     lexicalAnalyzer(currentFile)
358
```

TERMINAL

```
Next token is: 15 Next lexeme is program
Next token is: 15 Next lexeme is begin
Next token is: 11 Next lexeme is sum1
Next token is: 20 Next lexeme is =
Next token is: 11 Next lexeme is var1
Next token is: 21 Next lexeme is +
Next token is: 11 Next lexeme is var2
Next token is: -1 Next lexeme is ;
Next token is: 11 Next lexeme is sum2
Next token is: 20 Next lexeme is =
Next token is: 11 Next lexeme is var3
Next token is: 21 Next lexeme is +
Next token is: 11 Next lexeme is var2
Next token is: 23 Next lexeme is *
Next token is: 10 Next lexeme is 90
Next token is: -1 Next lexeme is ;
Next token is: 11 Next lexeme is sum3
Next token is: 20 Next lexeme is =
Next token is: 25 Next lexeme is (
Next token is: 11 Next lexeme is var2
Next token is: 21 Next lexeme is +
Next token is: 11 Next lexeme is var1
Next token is: 26 Next lexeme is )
Next token is: 23 Next lexeme is *
Next token is: 11 Next lexeme is var3
Next token is: -1 Next lexeme is ;
Next token is: 15 Next lexeme is if
Next token is: 25 Next lexeme is (
Next token is: 11 Next lexeme is sum1
Next token is: -1 Next lexeme is <
Next token is: 11 Next lexeme is sum2
Next token is: 26 Next lexeme is )
Next token is: 15 Next lexeme is then
Next token is: 15 Next lexeme is if
Next token is: 25 Next lexeme is (
Next token is: 11 Next lexeme is var1
Next token is: -1 Next lexeme is >
Next token is: 11 Next lexeme is var2
Next token is: 26 Next lexeme is )
```

3. Ouput of text file 2:



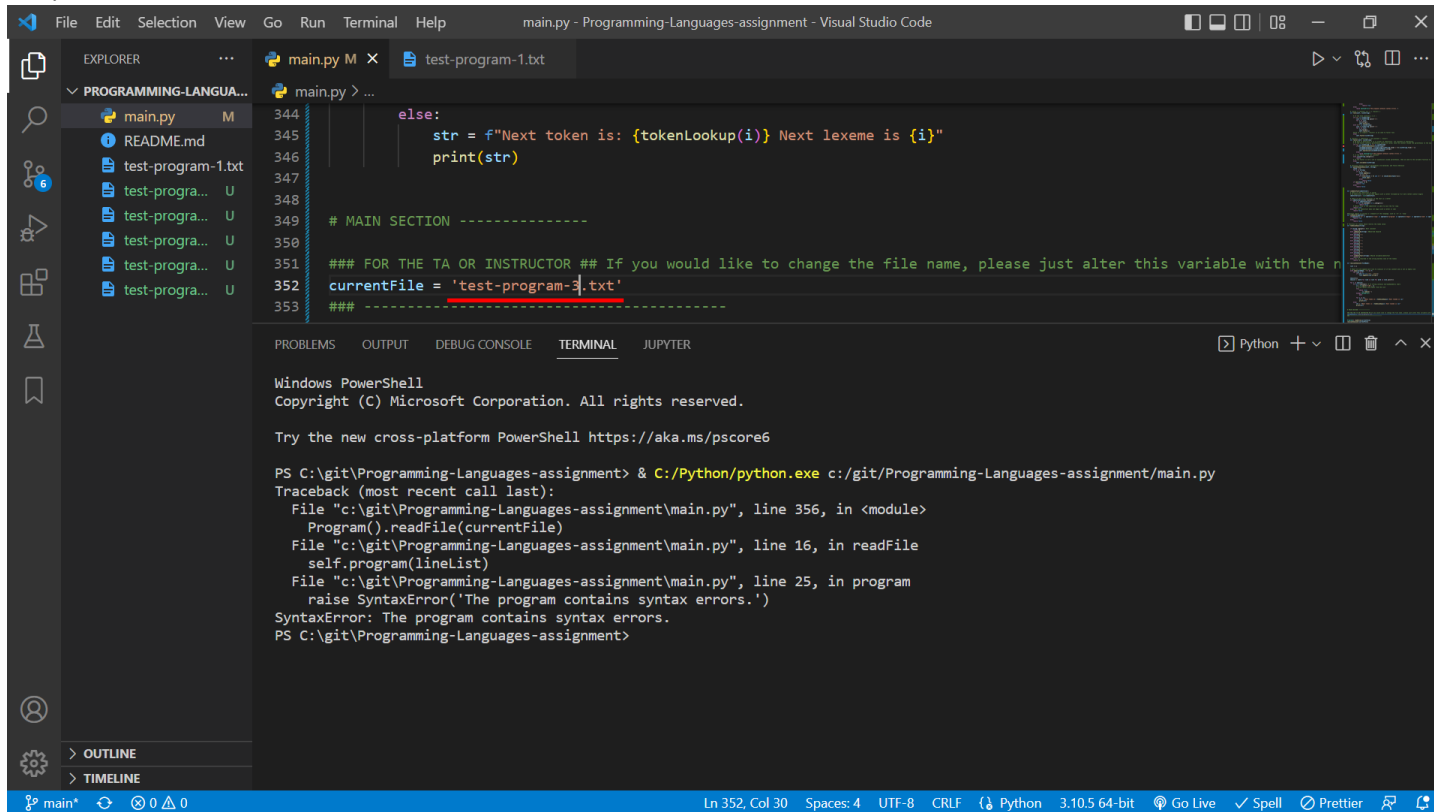
The screenshot shows the Visual Studio Code interface with a Python file named `main.py` open. The Explorer sidebar on the left shows a project named "PROGRAMMING-LANGUA..." containing files like `main.py`, `README.md`, and several `test-program-1.txt` files. The `main.py` file is open in the editor, showing lines 344 to 353. The code includes an `else` block with a `print` statement and a `currentFile` variable set to `'test-program-2.txt'`. The terminal at the bottom shows the command `PS C:\git\Programming-Languages-assignment> & C:/Python/python.exe c:/git/Programming-Languages-assignment/main.py` and a `Traceback` error: `SyntaxError: The program contains syntax errors.` The error message is highlighted in red in the terminal.

```
344         else:
345             str = f"Next token is: {tokenLookup(i)} Next lexeme is {i}"
346             print(str)
347
348
349     # MAIN SECTION -----
350
351     ### FOR THE TA OR INSTRUCTOR ## If you would like to change the file name, please just alter this variable with the n
352     currentFile = 'test-program-2.txt'
353     ### -----
```

PROBLEMS OUTPUT DEBUG CONSOLE TERMINAL JUPYTER

```
PS C:\git\Programming-Languages-assignment> & C:/Python/python.exe c:/git/Programming-Languages-assignment/main.py
Traceback (most recent call last):
  File "c:\git\Programming-Languages-assignment\main.py", line 356, in <module>
    Program().readFile(currentFile)
  File "c:\git\Programming-Languages-assignment\main.py", line 16, in readFile
    self.program(lineList)
  File "c:\git\Programming-Languages-assignment\main.py", line 34, in program
    raise SyntaxError('The program contains syntax errors.')
SyntaxError: The program contains syntax errors.
PS C:\git\Programming-Languages-assignment>
```

4. Output of file 3:



The screenshot shows the Visual Studio Code interface with the same `main.py` file open. The Explorer sidebar is the same. The `main.py` file is open in the editor, showing lines 344 to 353. The code is the same as in the previous screenshot, but the `currentFile` variable is now set to `'test-program-3.txt'`. The terminal at the bottom shows the command `PS C:\git\Programming-Languages-assignment> & C:/Python/python.exe c:/git/Programming-Languages-assignment/main.py` and a `Traceback` error: `SyntaxError: The program contains syntax errors.` The error message is highlighted in red in the terminal.

```
344         else:
345             str = f"Next token is: {tokenLookup(i)} Next lexeme is {i}"
346             print(str)
347
348
349     # MAIN SECTION -----
350
351     ### FOR THE TA OR INSTRUCTOR ## If you would like to change the file name, please just alter this variable with the n
352     currentFile = 'test-program-3.txt'
353     ### -----
```

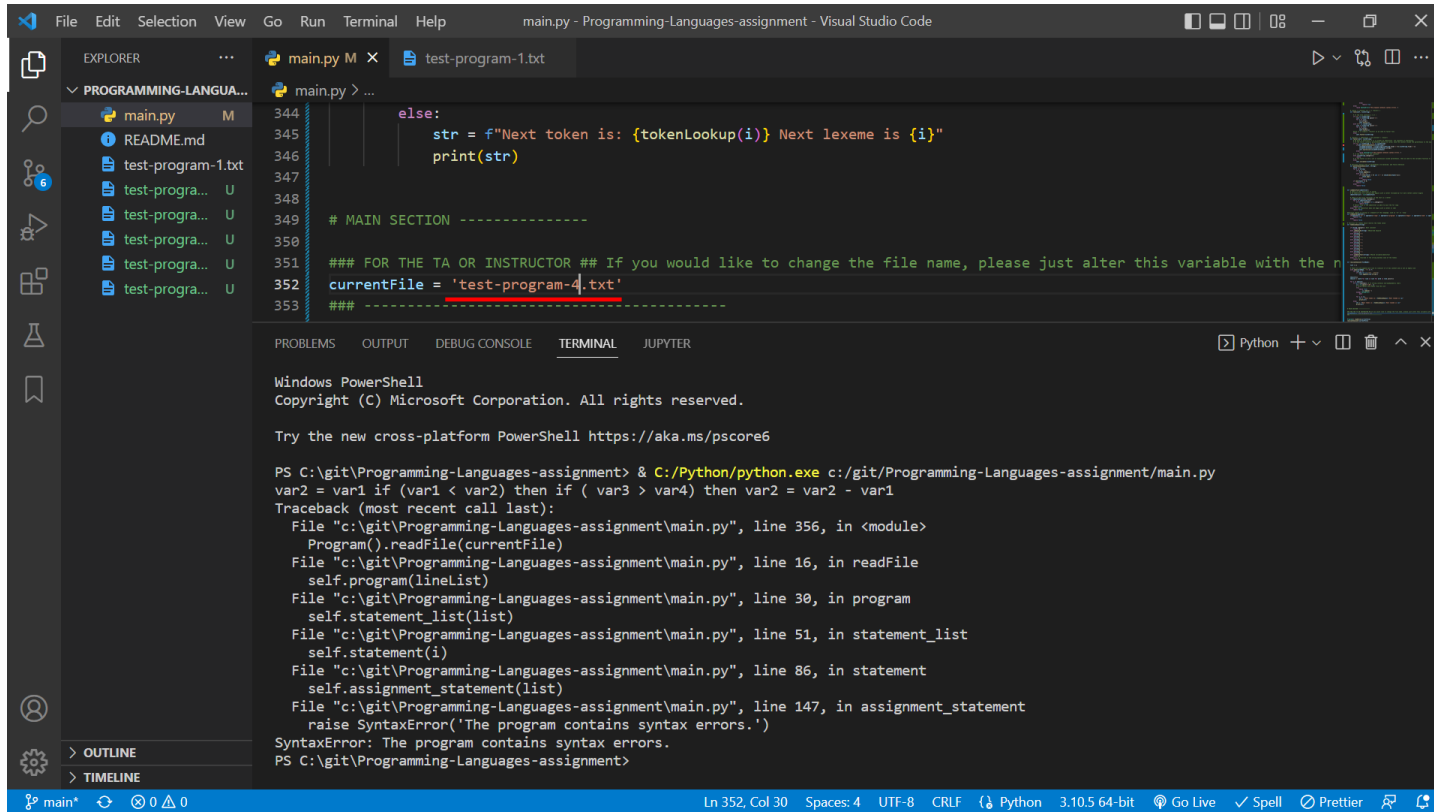
PROBLEMS OUTPUT DEBUG CONSOLE TERMINAL JUPYTER

```
Windows PowerShell
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Try the new cross-platform PowerShell https://aka.ms/powershell

PS C:\git\Programming-Languages-assignment> & C:/Python/python.exe c:/git/Programming-Languages-assignment/main.py
Traceback (most recent call last):
  File "c:\git\Programming-Languages-assignment\main.py", line 356, in <module>
    Program().readFile(currentFile)
  File "c:\git\Programming-Languages-assignment\main.py", line 16, in readFile
    self.program(lineList)
  File "c:\git\Programming-Languages-assignment\main.py", line 25, in program
    raise SyntaxError('The program contains syntax errors.')
SyntaxError: The program contains syntax errors.
PS C:\git\Programming-Languages-assignment>
```

5. Ouput of file 4:



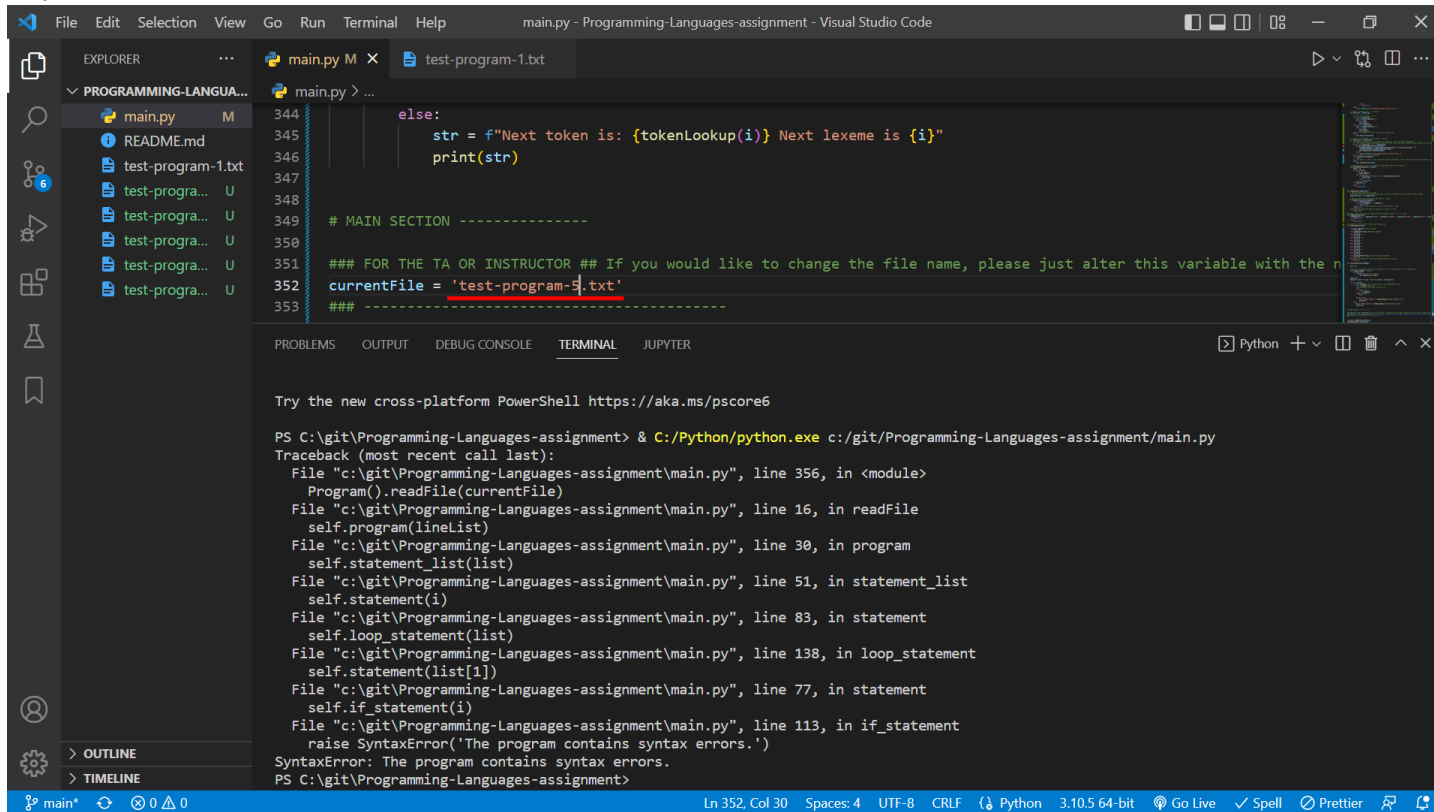
```
344         else:
345             str = f"Next token is: {tokenLookup(i)} Next lexeme is {i}"
346             print(str)
347
348
349 # MAIN SECTION -----
350
351 ### FOR THE TA OR INSTRUCTOR ## If you would like to change the file name, please just alter this variable with the n
352 currentFile = 'test-program-4.txt'
353 ### -----
```

Windows PowerShell
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Try the new cross-platform PowerShell <https://aka.ms/pscore6>

```
PS C:\git\Programming-Languages-assignment> & C:/Python/python.exe c:/git/Programming-Languages-assignment/main.py
var2 = var1 if (var1 < var2) then if ( var3 > var4) then var2 = var2 - var1
Traceback (most recent call last):
  File "c:\git\Programming-Languages-assignment\main.py", line 356, in <module>
    Program().readFile(currentFile)
  File "c:\git\Programming-Languages-assignment\main.py", line 16, in readFile
    self.program(lineList)
  File "c:\git\Programming-Languages-assignment\main.py", line 30, in program
    self.statement_list(list)
  File "c:\git\Programming-Languages-assignment\main.py", line 51, in statement_list
    self.statement(i)
  File "c:\git\Programming-Languages-assignment\main.py", line 86, in statement
    self.assignment_statement(list)
  File "c:\git\Programming-Languages-assignment\main.py", line 147, in assignment_statement
    raise SyntaxError('The program contains syntax errors.')
SyntaxError: The program contains syntax errors.
PS C:\git\Programming-Languages-assignment>
```

6. Ouput of file 5:



```
344         else:
345             str = f"Next token is: {tokenLookup(i)} Next lexeme is {i}"
346             print(str)
347
348
349 # MAIN SECTION -----
350
351 ### FOR THE TA OR INSTRUCTOR ## If you would like to change the file name, please just alter this variable with the n
352 currentFile = 'test-program-5.txt'
353 ### -----
```

Windows PowerShell
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Try the new cross-platform PowerShell <https://aka.ms/pscore6>

```
PS C:\git\Programming-Languages-assignment> & C:/Python/python.exe c:/git/Programming-Languages-assignment/main.py
Traceback (most recent call last):
  File "c:\git\Programming-Languages-assignment\main.py", line 356, in <module>
    Program().readFile(currentFile)
  File "c:\git\Programming-Languages-assignment\main.py", line 16, in readFile
    self.program(lineList)
  File "c:\git\Programming-Languages-assignment\main.py", line 30, in program
    self.statement_list(list)
  File "c:\git\Programming-Languages-assignment\main.py", line 51, in statement_list
    self.statement(i)
  File "c:\git\Programming-Languages-assignment\main.py", line 83, in statement
    self.loop_statement(list)
  File "c:\git\Programming-Languages-assignment\main.py", line 138, in loop_statement
    self.statement(list[1])
  File "c:\git\Programming-Languages-assignment\main.py", line 77, in statement
    self.if_statement(i)
  File "c:\git\Programming-Languages-assignment\main.py", line 113, in if_statement
    raise SyntaxError('The program contains syntax errors.')
SyntaxError: The program contains syntax errors.
PS C:\git\Programming-Languages-assignment>
```

7. Output of file 6:

```
File Edit Selection View Go Run Terminal Help main.py - Programming-Languages-assignment - Visual Studio Code

EXPLORER
PROGRAMMING-LANGUA...
main.py M
README.md
test-program-1.txt
test-progra... U
test-progra... U
test-progra... U
test-progra... U
test-progra... U

main.py
344
345
346
347
348
349 # MAIN SECTION -----
350
351 ### FOR THE TA OR INSTRUCTOR ## If you would like to change the file name, please just alter this variable with the n
352 currentFile = 'test-program-1.txt'
353

else:
    str = f"Next token is: {tokenLookup(i)} Next lexeme is {i}"
    print(str)

Windows PowerShell
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Try the new cross-platform PowerShell https://aka.ms/pscore6

PS C:\git\Programming-Languages-assignment> & C:/Python/python.exe c:/git/Programming-Languages-assignment/main.py
total = var1 + var2
fi (var1 < var2) then if ( var3 > var4) then var2 = var2 - var1
Traceback (most recent call last):
  File "c:\git\Programming-Languages-assignment\main.py", line 356, in <module>
    Program().readFile(currentFile)
  File "c:\git\Programming-Languages-assignment\main.py", line 16, in readFile
    self.program(lineList)
  File "c:\git\Programming-Languages-assignment\main.py", line 30, in program
    self.statement_list(list)
  File "c:\git\Programming-Languages-assignment\main.py", line 51, in statement_list
    self.statement(i)
  File "c:\git\Programming-Languages-assignment\main.py", line 86, in statement
    self.assignment_statement(list)
  File "c:\git\Programming-Languages-assignment\main.py", line 147, in assignment_statement
    raise SyntaxError('The program contains syntax errors.')
SyntaxError: The program contains syntax errors.
PS C:\git\Programming-Languages-assignment>
```

8. Examples of the files:

test-program-1.txt - Programming-Languages-assignment - Visual Studio Code

File Edit Selection View Go Run Terminal Help

EXPLORER

- PROGRAMMING-LANGUA...
- main.py M
- README.md
- test-program-1.txt
- test-progra... U
- test-progra... U
- test-progra... U
- test-progra... U
- test-progra... U

test-program-1.txt

```
1 program
2 begin
3
4 sum1 = var1 + var2;
5 sum2 = var3 + var2 * 90;
6 sum3 = (var2 + var1) * var3;
7
8 if (sum1 < sum2) then
9     if (var1 > var2) then
10         var4 = sum2 - sum1;
11
12 loop (var1 < var2)
13     var5 = var4/45
14
15 end
```

main* 0 0 0 Ln 13, Col 21 Spaces: 6 UTF-8 CRLF Plain Text Go Live Spell Prettier

test-program-2.txt - Programming-Languages-assignment - Visual Studio Code

File Edit Selection View Go Run Terminal Help

EXPLORER

- PROGR...
- main.py M
- README.md
- test-program-1.txt
- test-progra... U
- test-progra... U
- test-progra... U
- test-progra... U
- test-progra... U

test-program-2.txt

```
1 program
2
3 var3 = 140;
4
5 if (sum1 < sum2) then
6     var4 = sum2 - sum1
7
8 end
```

main* 0 0 0 Ln 8, Col 4 Spaces: 5 UTF-8 CRLF Plain Text Go Live Spell Prettier

