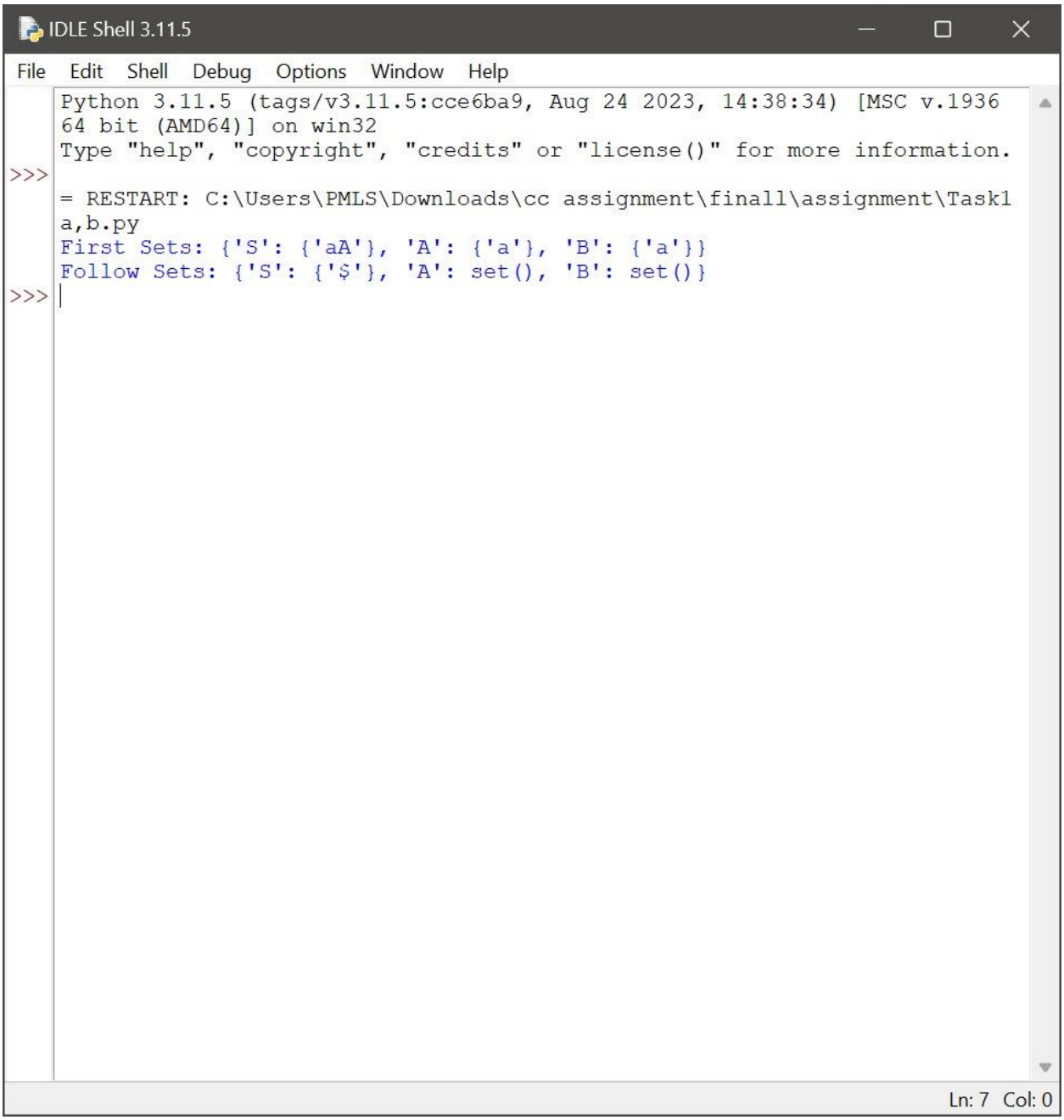
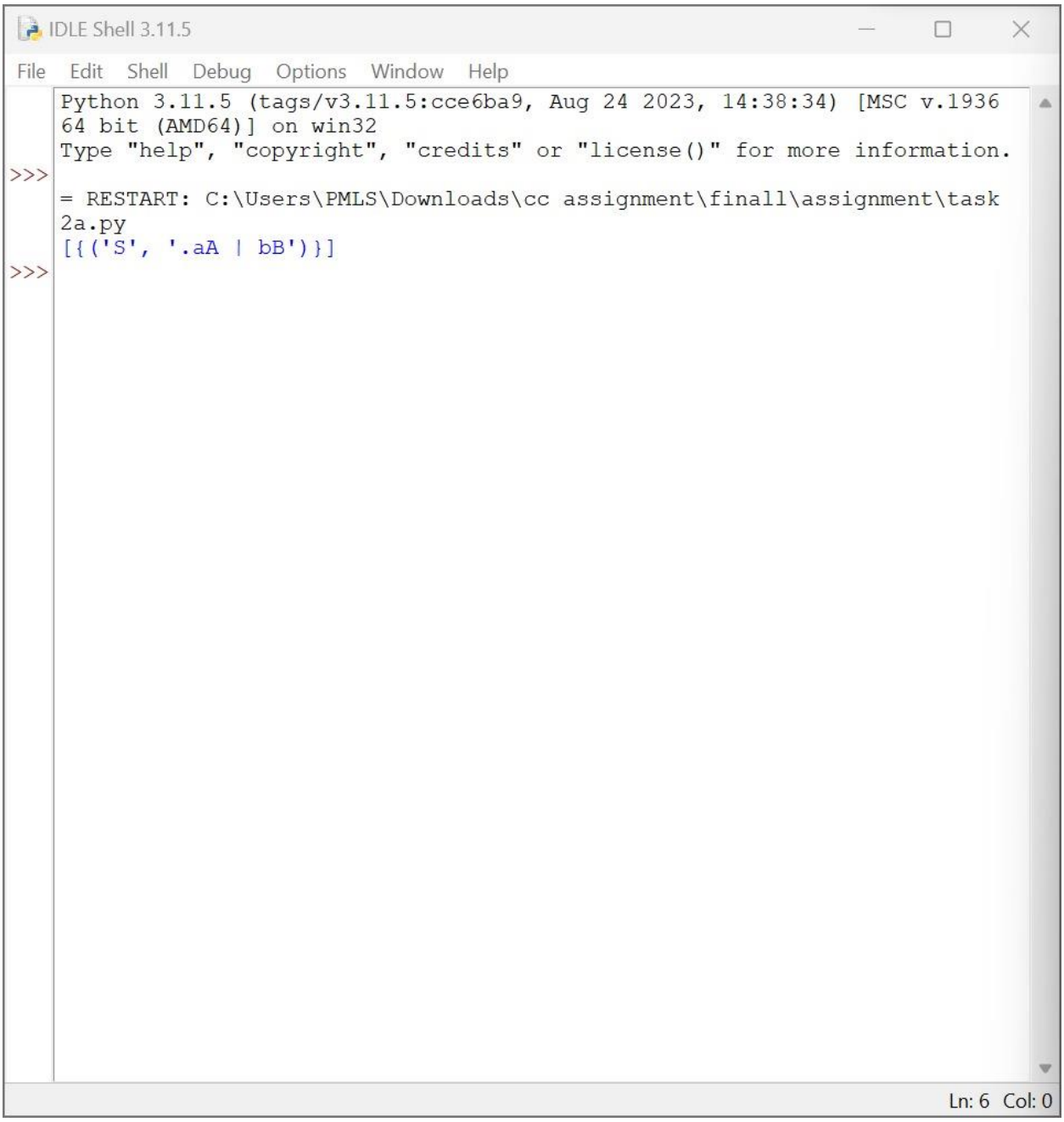
Tasks Verification Screen Shots:

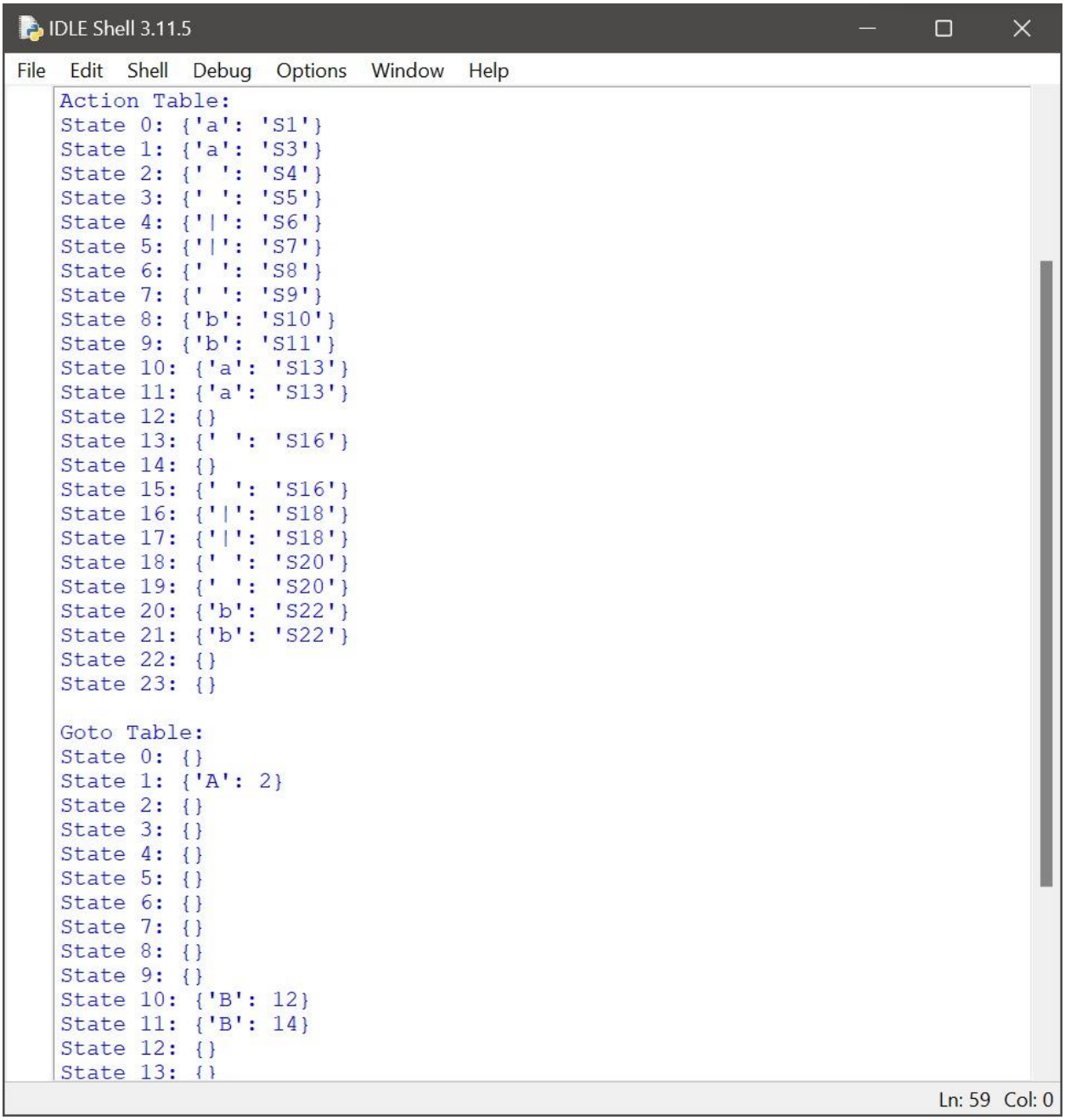
Task_1:



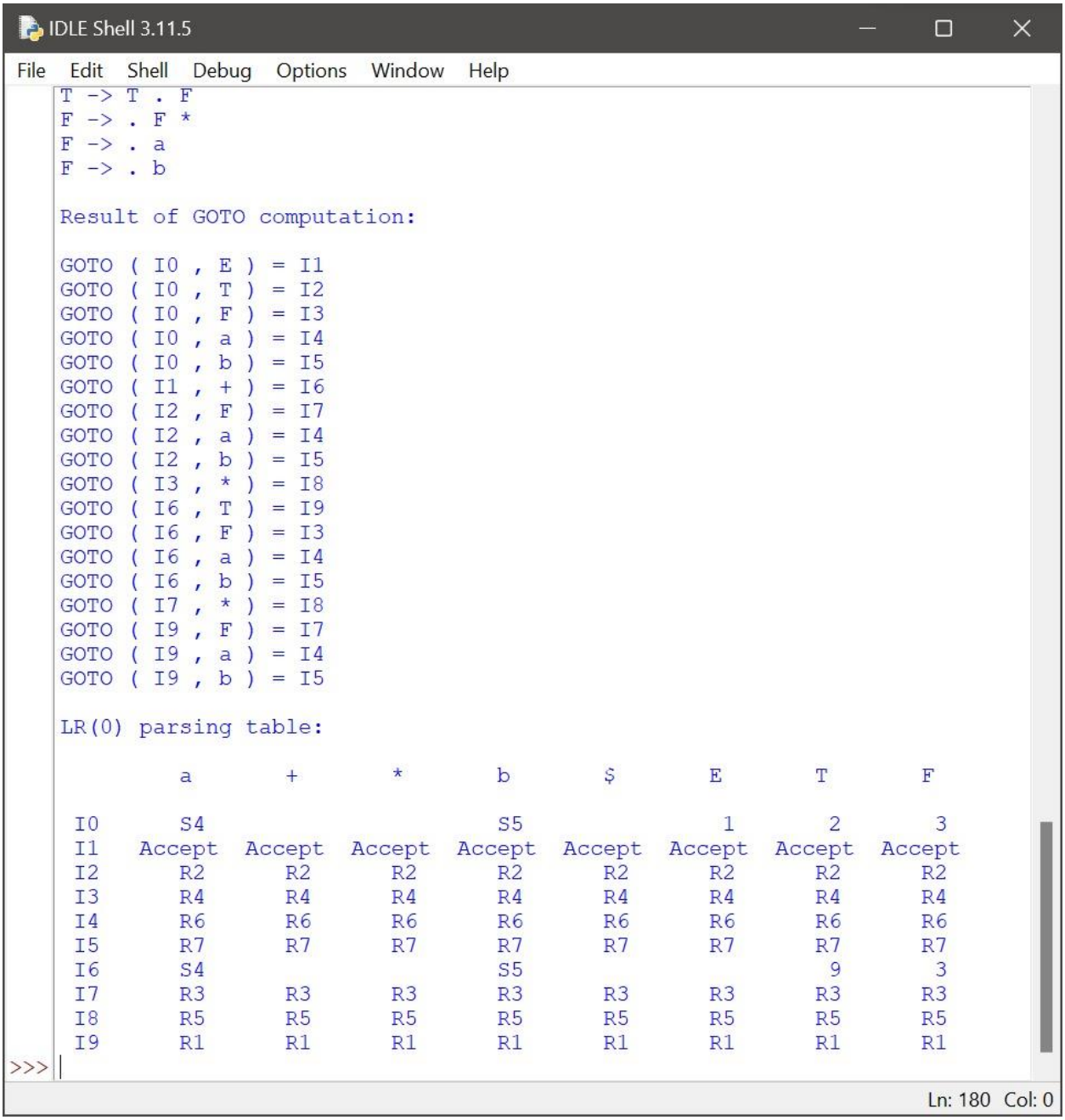
Task_2a:


IDLE Shell 3.11.5
File Edit Shell Debug Options Window Help
Python 3.11.5 (tags/v3.11.5:cce6ba9, Aug 24 2023, 14:38:34) [MSC v.1936 64 bit (AMD64)] on win32
Type "help", "copyright", "credits" or "license()" for more information.
>>>
= RESTART: C:\Users\PMLS\Downloads\cc assignment\finall\assignment\task 2a.py
[{('S', '.aA | bB')}]
>>>
Ln: 6 Col: 0

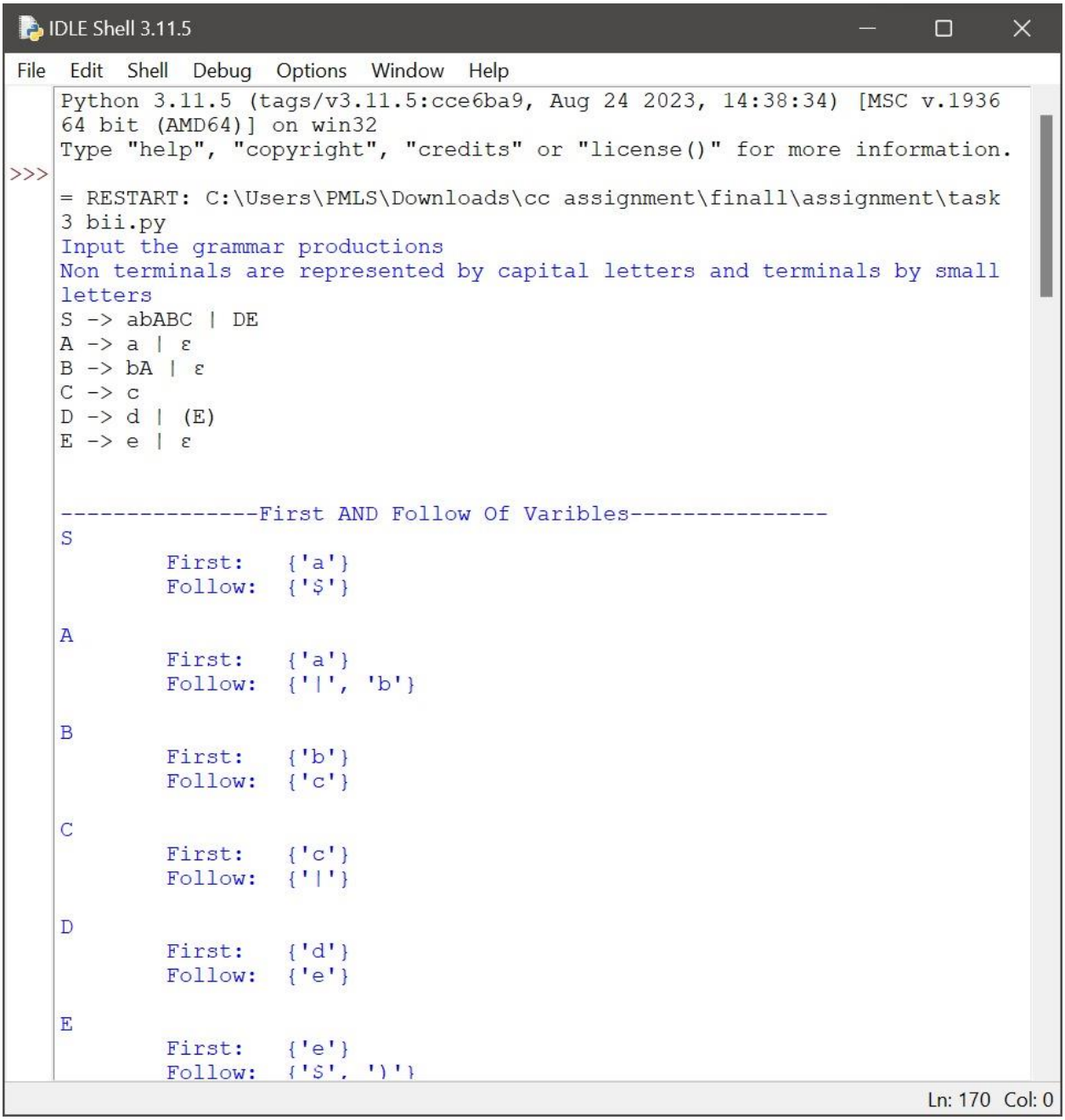
Task_2b:


IDLE Shell 3.11.5
File Edit Shell Debug Options Window Help
Action Table:
State 0: {'a': 'S1'}
State 1: {'a': 'S3'}
State 2: {' ': 'S4'}
State 3: {' ': 'S5'}
State 4: {'|': 'S6'}
State 5: {'|': 'S7'}
State 6: {' ': 'S8'}
State 7: {' ': 'S9'}
State 8: {'b': 'S10'}
State 9: {'b': 'S11'}
State 10: {'a': 'S13'}
State 11: {'a': 'S13'}
State 12: {}
State 13: {' ': 'S16'}
State 14: {}
State 15: {' ': 'S16'}
State 16: {'|': 'S18'}
State 17: {'|': 'S18'}
State 18: {' ': 'S20'}
State 19: {' ': 'S20'}
State 20: {'b': 'S22'}
State 21: {'b': 'S22'}
State 22: {}
State 23: {}
Goto Table:
State 0: {}
State 1: {'A': 2}
State 2: {}
State 3: {}
State 4: {}
State 5: {}
State 6: {}
State 7: {}
State 8: {}
State 9: {}
State 10: {'B': 12}
State 11: {'B': 14}
State 12: {}
State 13: {}
Ln: 59 Col: 0

Task_2c:


IDLE Shell 3.11.5
File Edit Shell Debug Options Window Help
T -> T . F
F -> . F *
F -> . a
F -> . b
Result of GOTO computation:
GOTO (I0 , E) = I1
GOTO (I0 , T) = I2
GOTO (I0 , F) = I3
GOTO (I0 , a) = I4
GOTO (I0 , b) = I5
GOTO (I1 , +) = I6
GOTO (I2 , F) = I7
GOTO (I2 , a) = I4
GOTO (I2 , b) = I5
GOTO (I3 , *) = I8
GOTO (I6 , T) = I9
GOTO (I6 , F) = I3
GOTO (I6 , a) = I4
GOTO (I6 , b) = I5
GOTO (I7 , *) = I8
GOTO (I9 , F) = I7
GOTO (I9 , a) = I4
GOTO (I9 , b) = I5
LR(0) parsing table:
a + * b $ E T F
I0 S4 S5 1 2 3
I1 Accept Accept Accept Accept Accept Accept Accept Accept
I2 R2 R2 R2 R2 R2 R2 R2 R2
I3 R4 R4 R4 R4 R4 R4 R4 R4
I4 R6 R6 R6 R6 R6 R6 R6 R6
I5 R7 R7 R7 R7 R7 R7 R7 R7
I6 S4 S5 9 3
I7 R3 R3 R3 R3 R3 R3 R3 R3
I8 R5 R5 R5 R5 R5 R5 R5 R5
I9 R1 R1 R1 R1 R1 R1 R1 R1
>>>
Ln: 180 Col: 0

Task3:


IDLE Shell 3.11.5
File Edit Shell Debug Options Window Help
Python 3.11.5 (tags/v3.11.5:cce6ba9, Aug 24 2023, 14:38:34) [MSC v.1936 64 bit (AMD64)] on win32
Type "help", "copyright", "credits" or "license()" for more information.
>>>
= RESTART: C:\Users\PMLS\Downloads\cc assignment\finall\assignment\task 3 bii.py
Input the grammar productions
Non terminals are represented by capital letters and terminals by small letters
S -> abABC | DE
A -> a | ε
B -> bA | ε
C -> c
D -> d | (E)
E -> e | ε
----------First AND Follow Of Varibles----------
S
First: {'a'}
Follow: {'$'}
A
First: {'a'}
Follow: {'|', 'b'}
B
First: {'b'}
Follow: {'c'}
C
First: {'c'}
Follow: {'|'}
D
First: {'d'}
Follow: {'e'}
E
First: {'e'}
Follow: {'$', ')'}
Ln: 170 Col: 0