COMSATS Institute of
Information Technology

Group Members:

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Class/Section: BCS-7 (A)

Subject: CC-Lab (Compiler Construction)

Submission To: Sir Bilal Haider

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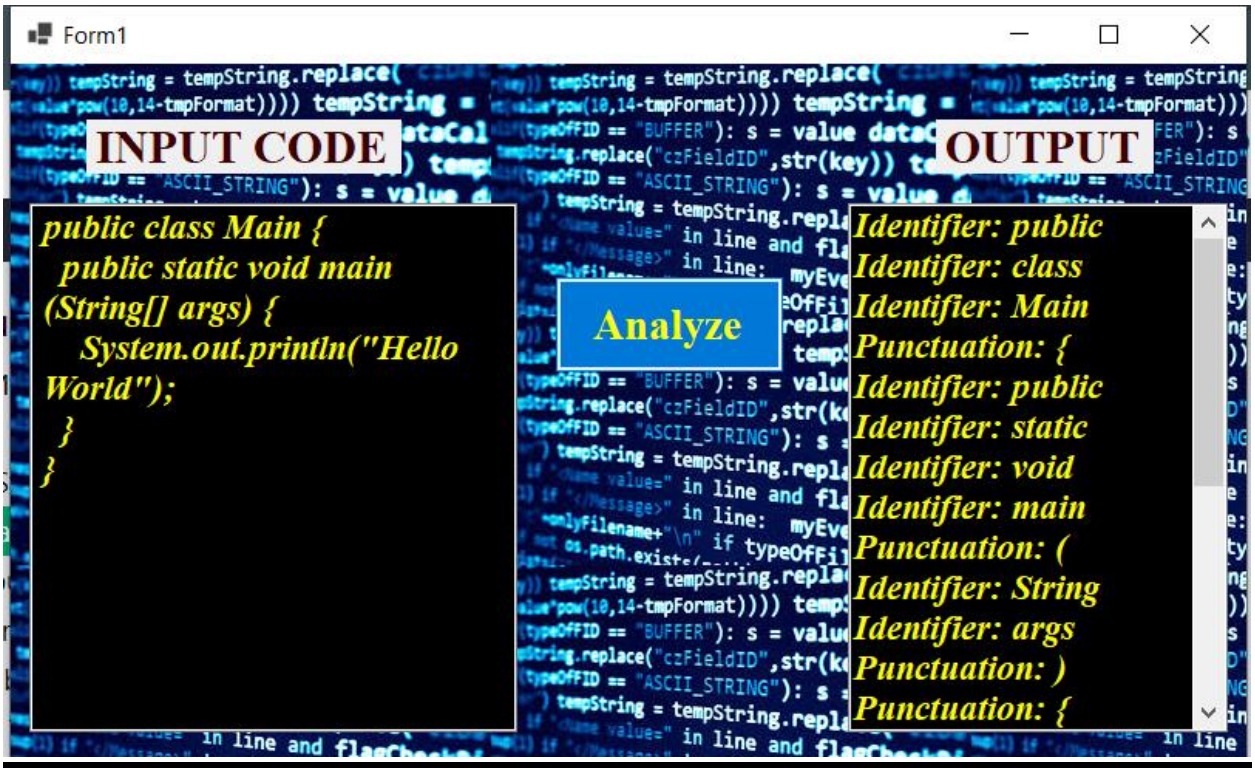
CC-Lab Terminal:

Question 3: Give Input and then show its Output.

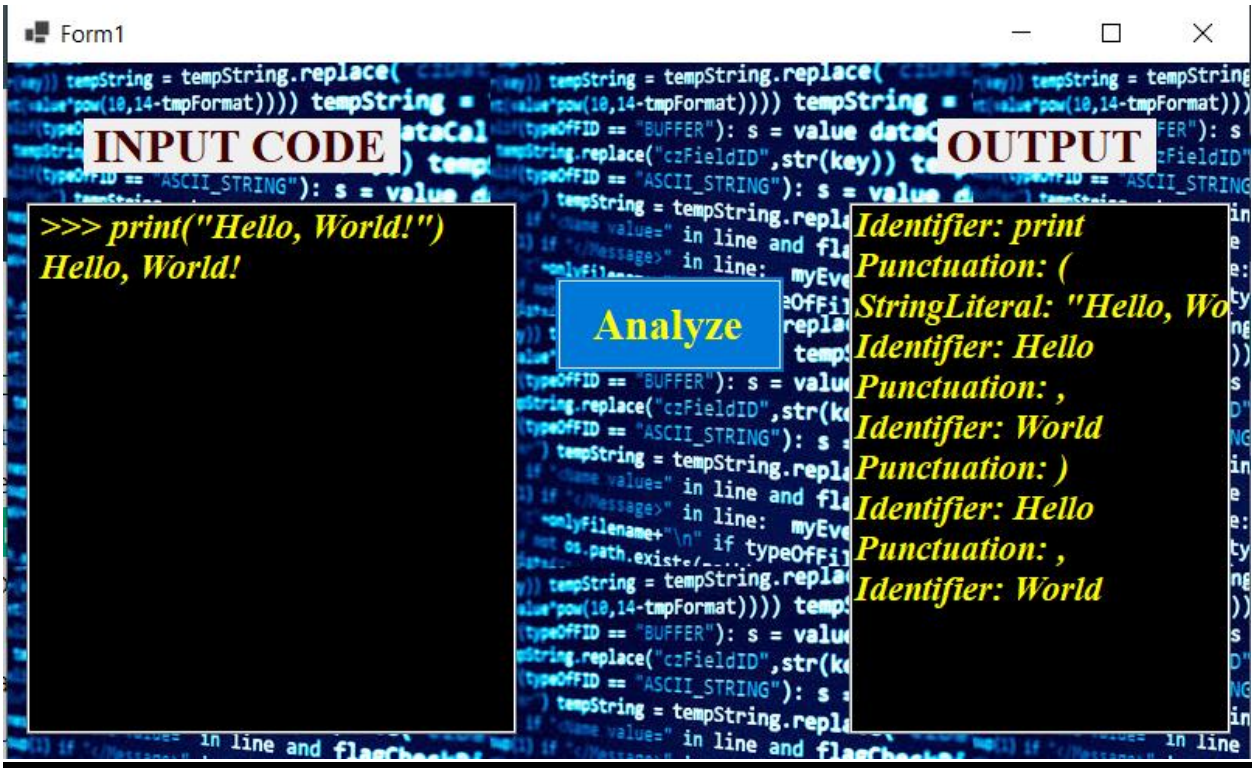
Answer:

❖Lexical analyzer:

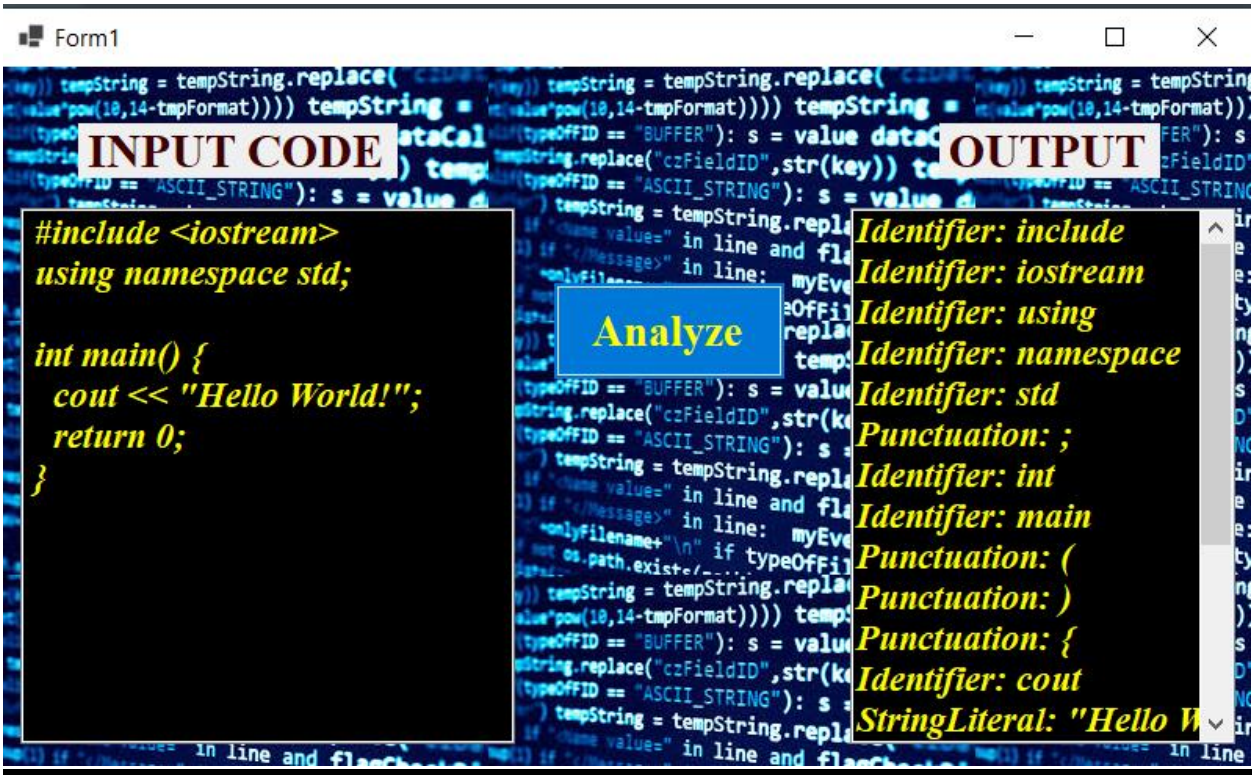
- **Input 1 & its Output:**



- **Input 2 & its Output:**



- **Input 3 & its Output:**



❖LR Parsing:

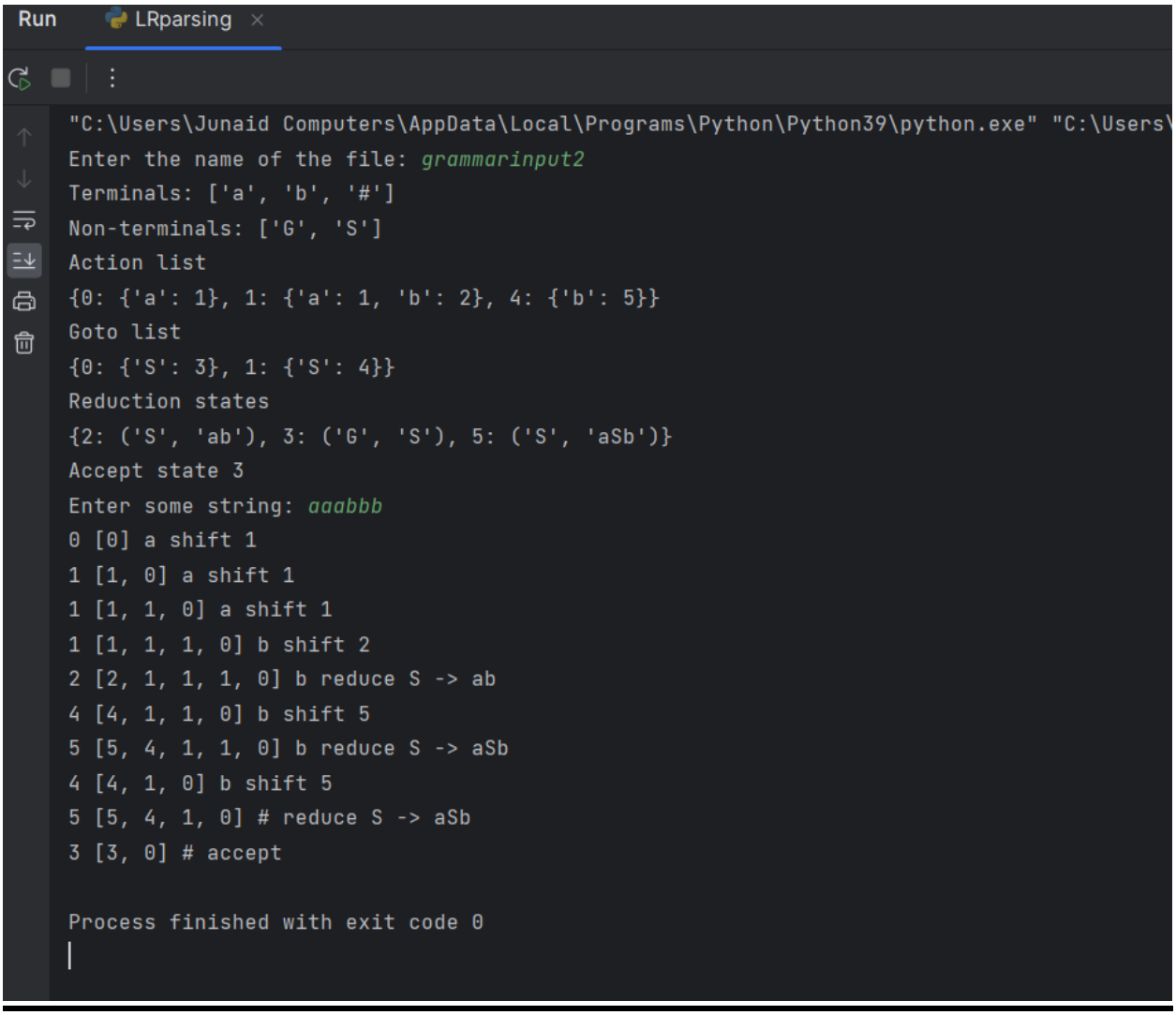
- **Grammar 1:**

G -> S

S -> aSb

S -> ab

  - **Test String**: aaabbb



- **Grammar 2:**

G -> S

S -> aB

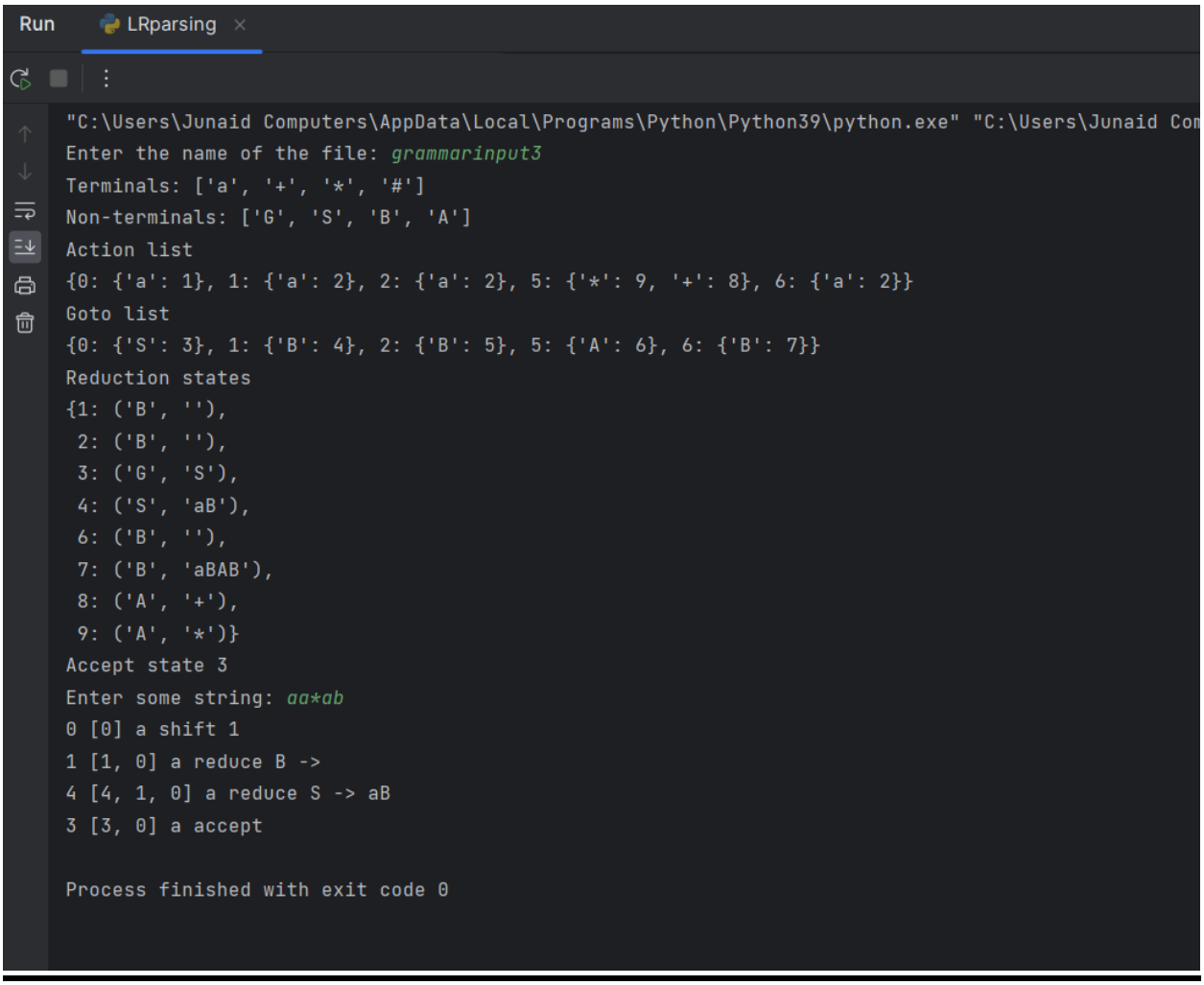
B -> aBAB

B ->

A -> +

A -> *

  - **Test string** : aa*ab



- **Grammar 3:**

G -> E

E -> E+T

E -> E-T

E -> T

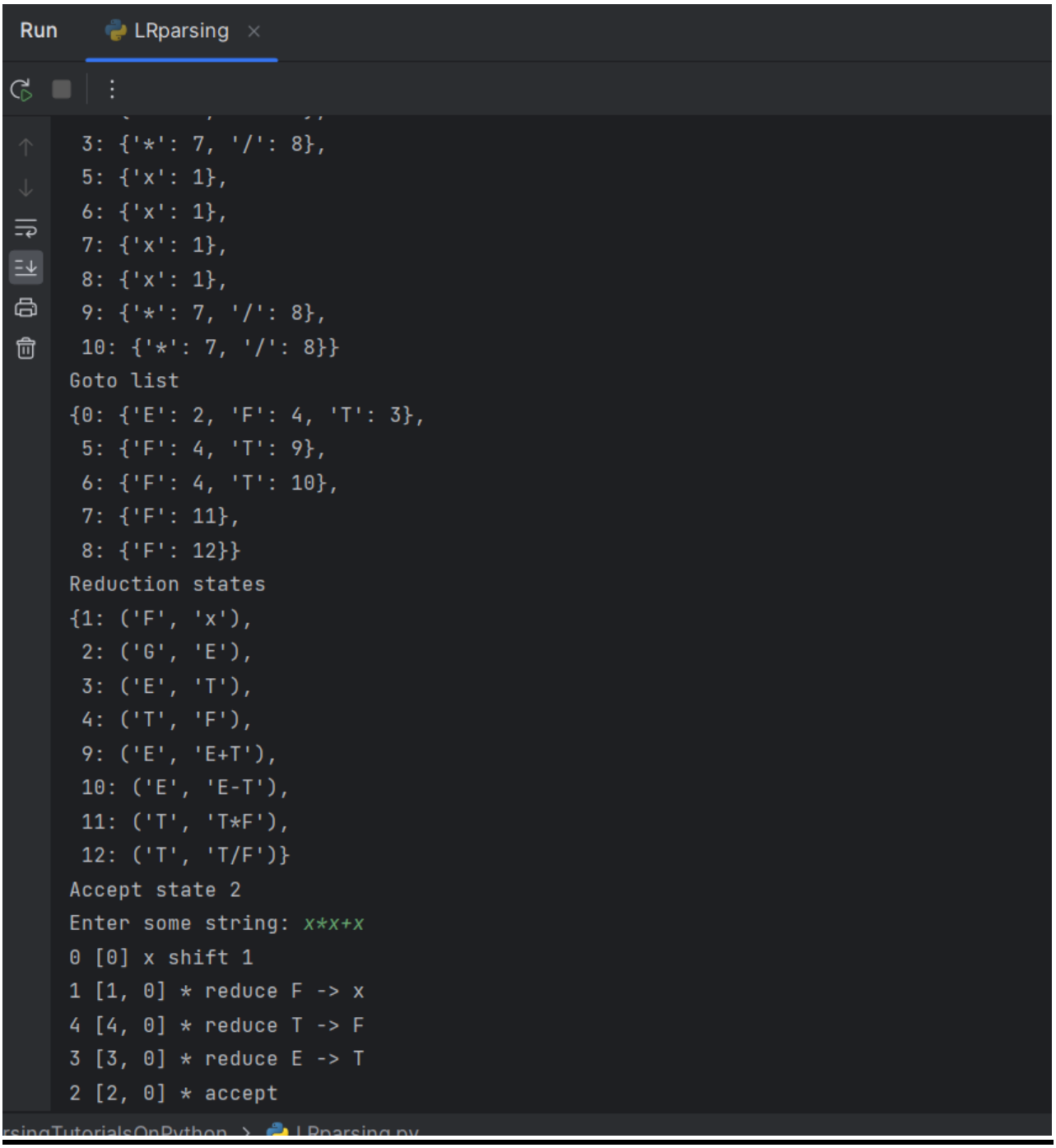
T -> T*F

T -> T/F

T -> F

F -> x

  - **Test string :** x*x+x


Run
LRparsing
3: {'*': 7, '/': 8},
5: {'x': 1},
6: {'x': 1},
7: {'x': 1},
8: {'x': 1},
9: {'*': 7, '/': 8},
10: {'*': 7, '/': 8}}
Goto list
{0: {'E': 2, 'F': 4, 'T': 3},
5: {'F': 4, 'T': 9},
6: {'F': 4, 'T': 10},
7: {'F': 11},
8: {'F': 12}}
Reduction states
{1: ('F', 'x'),
2: ('G', 'E'),
3: ('E', 'T'),
4: ('T', 'F'),
9: ('E', 'E+T'),
10: ('E', 'E-T'),
11: ('T', 'T*F'),
12: ('T', 'T/F')}
Accept state 2
Enter some string: x*x+x
0 [0] x shift 1
1 [1, 0] * reduce F -> x
4 [4, 0] * reduce T -> F
3 [3, 0] * reduce E -> T
2 [2, 0] * accept

-End