

Parser-LL(1) code:-

""""

Created on Sun Apr 3 23:02:50 2022

@author: COMPUTER

""""

-*- coding: utf-8 -*-

""""

Created on Mon Mar 28 05:58:14 2022

@author: COMPUTER

""""

```
import re
r=int(input("Enter no. of non-terminals: "))
c=int(input("Enter no. of terminals: ")) + 1
non=[]
ter=[]
table=[]
stack=['$', 'S']
ptr=0
```

```
print("Enter non-terminals")
for i in range(r):
    non.append(input( ))
```

```
print('Enter terminals')
for i in range(c-1):
    ter.append(input())
ter.append('$')
```

```
print('Enter productions for: ')
temp_list=[]
```

```

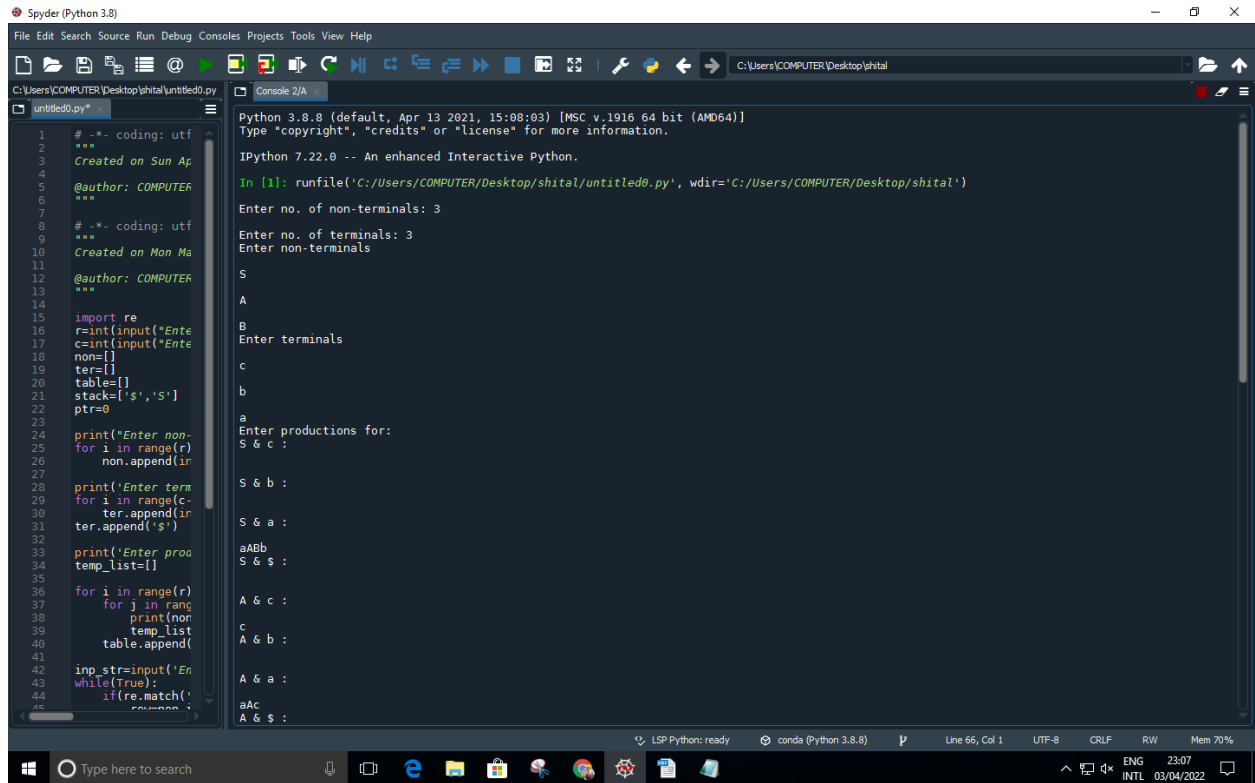
for i in range(r):
    for j in range(c):
        print(non[i], '&', ter[j], ':')
        temp_list.append(input( ))
    table.append(temp_list)

inp_str=input('Enter string to parse:')+ '$'
while(True):
    if(re.match('[A-z]',stack[-1]) and inp_str[ptr]!='$'):
        row=non.index(stack.pop())
        col=ter.index(inp_str[ptr])

        if(table[row][col]!='*'):
            temp = table[row][col][::-1]
            while(temp!=""):
                stack.append(temp[0])
                temp=temp.replace(temp[0],"")
            if(stack[-1] == inp_str[ptr] and inp_str[ptr]!='$'):
                ptr=ptr+1
                stack.pop()
            if(stack[-1]=='$'):
                if(inp_str[ptr]=='$'):
                    print('String is accepted')
                    break
            else:
                print('String is not accepted')
                break
        elif(inp_str[ptr] == '$'):
            print('String is not accepted')
            break

```

Output:-



The screenshot shows the Spyder Python IDE interface. The left pane displays the code in 'untitled0.py', and the right pane shows the console output.

```
1  # -*- coding: utf-8 -*-
2  """
3  Created on Sun Apr 10 2022
4  @author: COMPUTER
5  """
6
7  # -*- coding: utf-8 -*-
8  """
9  Created on Mon Mar 28 2022
10 @author: COMPUTER
11 """
12
13 import re
14 re.compile("Enter non-terminals: ")
15 c=int(input("Enter no. of non-terminals: "))
16 non=[]
17 ter=[]
18 table=[]
19 stack=['$', 'S']
20 ptr=0
21
22 print("Enter non-terminals: ")
23 for i in range(c):
24     non.append(input())
25
26 print("Enter terminals: ")
27 for i in range(c):
28     ter.append(input())
29
30 print("Enter productions: ")
31 temp_list=[]
32 for i in range(c):
33     for j in range(c):
34         print(non[i] + " " + ter[j] + ": ")
35         table.append(input())
36
37 inp_str=input("Enter the string to be checked: ")
38 while(True):
39     if(re.match("^[a-zA-Z]*$", inp_str)):
40         print("The string is valid.")
41     else:
42         print("The string is invalid.")
43         inp_str=input("Enter the string to be checked: ")
44
45
```

The console output shows the execution of the code:

```
Python 3.8.8 (default, Apr 13 2021, 15:08:03) [MSC v.1916 64 bit (AMD64)]
Type "copyright", "credits" or "license()" for more information.

IPython 7.22.0 -- An enhanced Interactive Python.

In [1]: runfile('C:/Users/COMPUTER/Desktop/shital/untitled0.py', wdir='C:/Users/COMPUTER/Desktop/shital')

Enter no. of non-terminals: 3
Enter no. of terminals: 3
Enter non-terminals
S
A
B
Enter terminals
c
b
a
Enter productions for:
S & c :
S & b :
S & a :
aABb
S & $ :
A & c :
c
A & b :
A & a :
aAc
A & $ :
```

