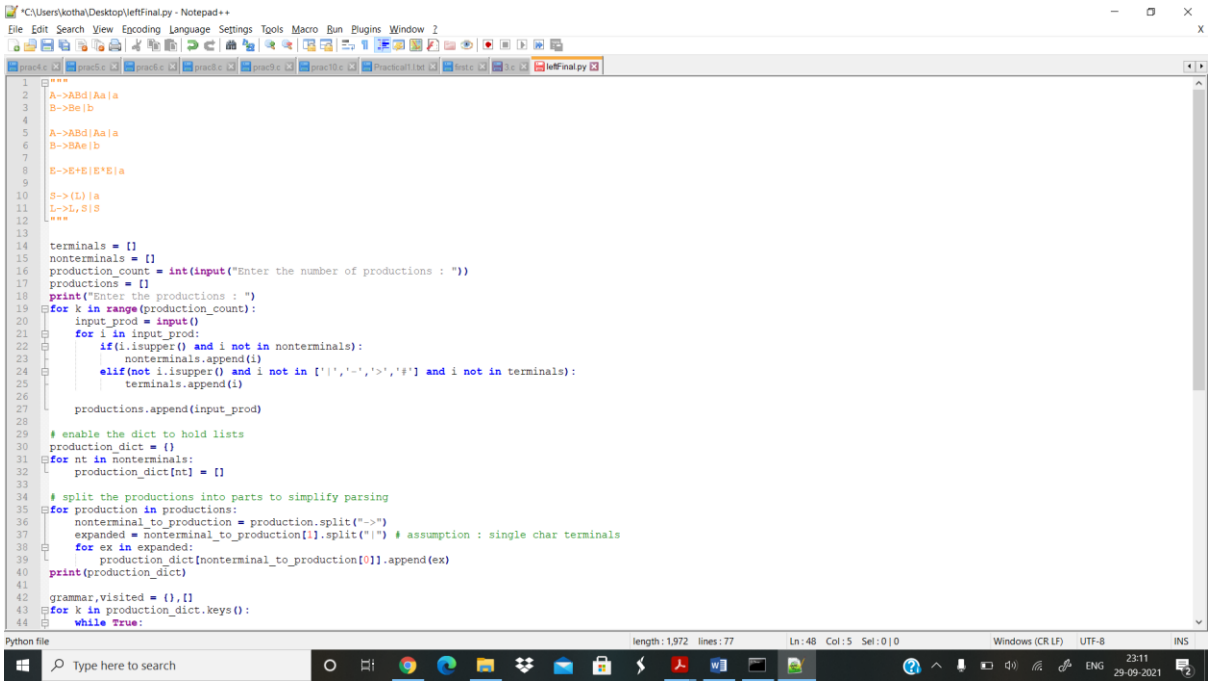
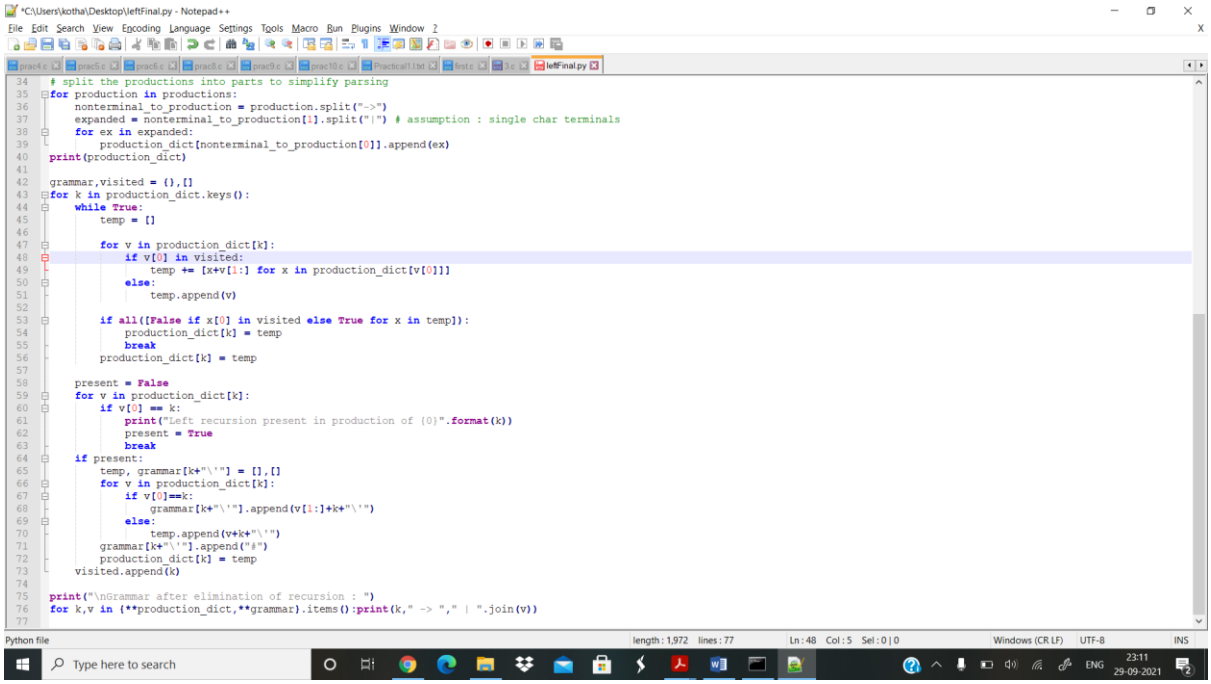
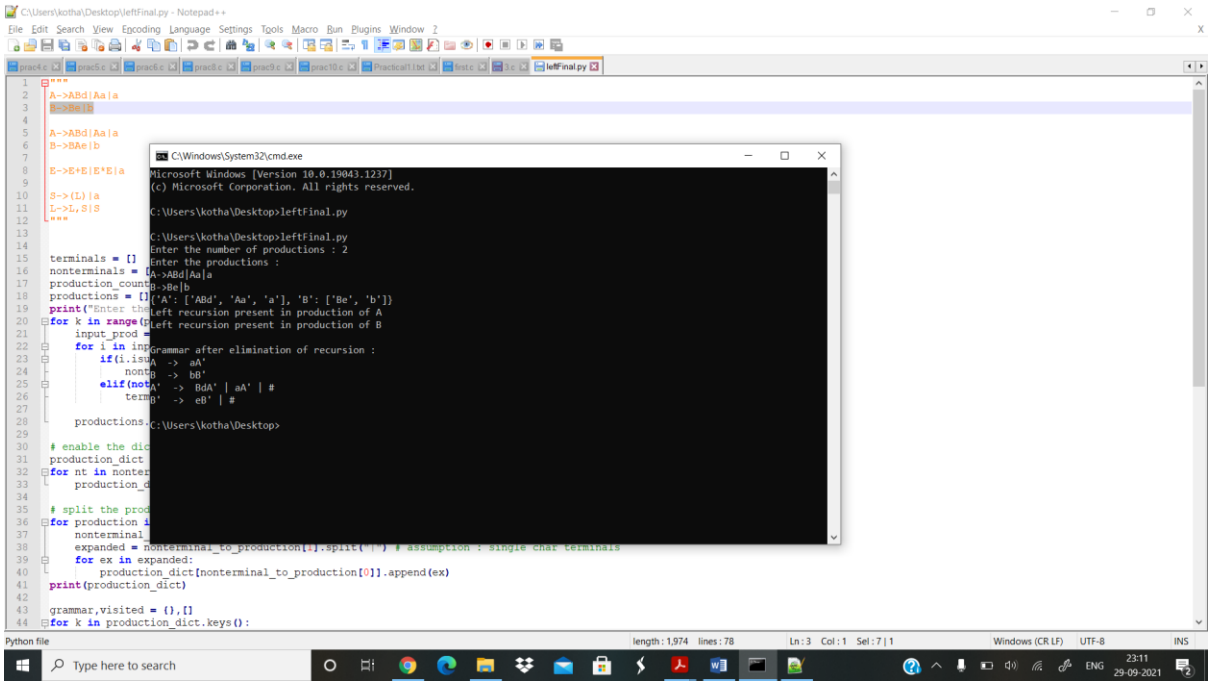
Practical 4

Niketkumar Kothari

18bce134




*C:\Users\kotha\Desktop\leftFinal.py - Notepad++
File Edit Search View Encoding Language Settings Tools Macro Run Plugins Window ?
leftFinal.py
# split the productions into parts to simplify parsing
for production in productions:
nonterminal_to_production = production.split("->")
expanded = nonterminal_to_production[1].split("|") # assumption : single char terminals
for ex in expanded:
production_dict[nonterminal_to_production[0]].append(ex)
print(production_dict)
grammar,visited = {},[]
for k in production_dict.keys():
while True:
temp = []
for v in production_dict[k]:
if v[0] in visited:
temp += [x+v[1:] for x in production_dict[v[0]]]
else:
temp.append(v)
if all([False if x[0] in visited else True for x in temp]):
production_dict[k] = temp
break
production_dict[k] = temp
present = False
for v in production_dict[k]:
if v[0] == k:
print("Left recursion present in production of {0}".format(k))
present = True
break
if present:
temp, grammar[k+"\'"] = [],[]
for v in production_dict[k]:
if v[0]==k:
grammar[k+"\'"].append(v[1:]+k+"\'")
else:
temp.append(v+k+"\'")
grammar[k+"\'"].append("#")
production_dict[k] = temp
visited.append(k)
print("\nGrammar after elimination of recursion : ")
for k,v in {**production_dict,**grammar}.items():print(k," -> "," | ".join(v))
Python file
length : 1,972 lines : 77
Ln : 48 Col : 5 Sel : 0 | 0
Windows (CR LF) UTF-8 INS
Type here to search
ENG
23:11
29-09-2021


C:\Users\kotha\Desktop\leftFinal.py - Notepad++
File Edit Search View Encoding Language Settings Tools Macro Run Plugins Window ?
leftFinal.py
"""
A->ABd|Aa|a
B->Be|b
A->ABd|Aa|a
B->BAe|b
E->E*E|E*E|a
S->(L)|a
L->L,S|S
"""
C:\Windows\System32\cmd.exe
Microsoft Windows [Version 10.0.19043.1237]
(c) Microsoft Corporation. All rights reserved.
C:\Users\kotha\Desktop>leftFinal.py
C:\Users\kotha\Desktop>leftFinal.py
Enter the number of productions : 2
Enter the productions :
A->ABd|Aa|a
B->Be|b
{'A': ['ABd', 'Aa', 'a'], 'B': ['Be', 'b']}
Left recursion present in production of A
Left recursion present in production of B
Grammar after elimination of recursion :
A -> aA'
B -> bB'
A' -> BdA' | aA' | #
B' -> eB' | #
C:\Users\kotha\Desktop>
# split the productions into parts to simplify parsing
for production in productions:
nonterminal_to_production = production.split("->")
expanded = nonterminal_to_production[1].split("|") # assumption : single char terminals
for ex in expanded:
production_dict[nonterminal_to_production[0]].append(ex)
print(production_dict)
grammar,visited = {},[]
for k in production_dict.keys():
Python file
length : 1,974 lines : 78
Ln : 3 Col : 1 Sel : 7 | 1
Windows (CR LF) UTF-8 INS
Type here to search
ENG
23:11
29-09-2021