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2019BCS074  
TY CSE  
Compiler Design  
B-40

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## Practical No.8 and 9

8. Write a program for predictive parser for acceptance of string.
9. Write a program for predictive parser by parsing table.

Code -

```
arr=dict()
#input = jmbgfh
arr["S"]="jKLh"
arr["K"]="mC"
arr["C"]="b"
arr["R"]="g"
arr["F"]="f"
arr["L"]="RF"

def first(A,arr):
    farr=[]
    for i in range(len(arr[A])):
        if arr[A][i].islower():
            farr.append(arr[A][i])
            return farr
        else:
            ffarr=first(arr[A][i],arr)
            break
    return ffarr

def follow(ke):
    length = len(production[i])

    for i in range(limit):
        for j in range(2, lenght):
```

```

        if(production[i][j] == ke):

            if(production[i][j + 1] != NULL ):
                first(production[i][j + 1])

            if(production[i][j + 1] == NULL and ke !=
production[i][0]):
                follow(production[i][0])
def ppt(arr,V,T):
    ppt_arr=[]
    for i in V:
        arrr=[]
        farr=first(i,arr)
        for j in range(len(T)):
            if T[j] in farr:
                arrr.append(arr[i])
            else:
                arrr.append("-")
        ppt_arr.append(arrr)
    return(ppt_arr)

V=["S","K","C","R","F","L"]
T=["j", "h", "m","b","g","f"]

print("",end=" ")
for j in T:
    print(j, end=" ")
print("")

x = ppt(arr,V,T)
for i in range(len(x)):
    print(V[i], end=" ")
    print(x[i])

print("")
input_ = "jmbgfh$"
stack = ["$", "S"]
pro = "Start Symbol"
def map(var, V, r, T, x):
    row = V.index(var)
    column = T.index(r)
    return x[row][column]

while input_ != "$" and len(stack) != 1:
    if stack[-1] in V:
        print(stack, end="\t\t")
        print(input_, end="\t\t")

        pro = map(stack[-1], V, input_[0], T, x)
        print(pro)
        stack.pop()
        for i in range(len(pro)):

```

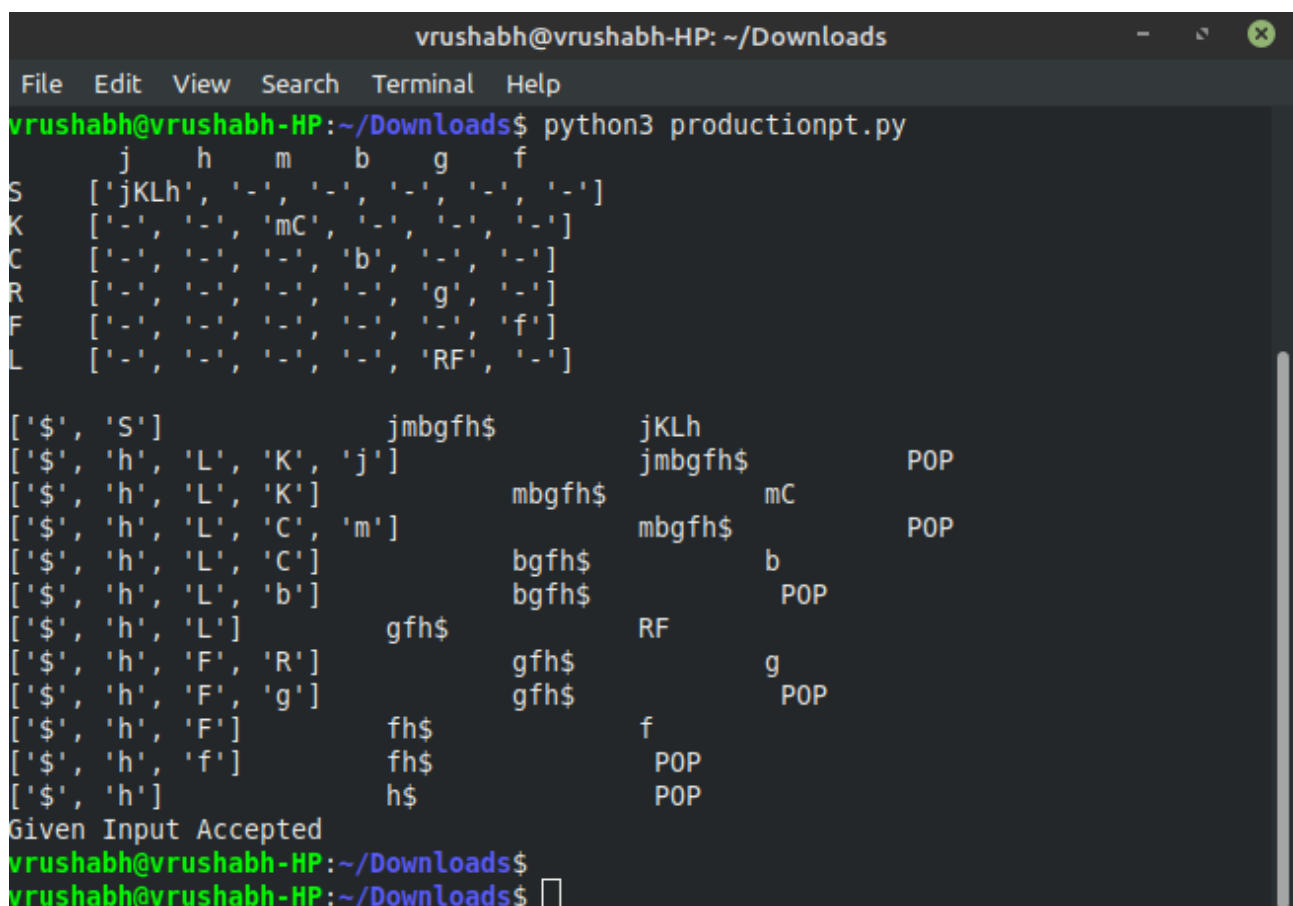
```
stack.append(pro[len(pro)-i-1])
```

```
elif stack[-1] in T:
    print(stack, end="\t\t")
    print(input_, end="\t\t")
    print(" POP ")
    ter = stack.pop()
    if ter == input_[0]:
        input_ = input_[1:]

    else:
        print("error")
        exit(1)
else:
    print("error")
    exit(1)
```

```
print("Given Input Accepted")
```

Screenshot of Output -



```
vrushabh@vrushabh-HP: ~/Downloads
File Edit View Search Terminal Help
vrushabh@vrushabh-HP:~/Downloads$ python3 productionpt.py
S      j      h      m      b      g      f
K      ['jKLh', '-', '-', '-', '-', '-', '-']
C      ['-', '-', 'mC', '-', '-', '-']
R      ['-', '-', '-', 'b', '-', '-']
F      ['-', '-', '-', '-', 'g', '-']
L      ['-', '-', '-', '-', 'f', '-']

['$', 'S']      jmbgfh$      jKLh
['$', 'h', 'L', 'K', 'j']      jmbgfh$      POP
['$', 'h', 'L', 'K']      mbgfh$      mC
['$', 'h', 'L', 'C', 'm']      mbgfh$      POP
['$', 'h', 'L', 'C']      bgfh$      b
['$', 'h', 'L', 'b']      bgfh$      POP
['$', 'h', 'L']      gfh$      RF
['$', 'h', 'F', 'R']      gfh$      g
['$', 'h', 'F', 'g']      gfh$      POP
['$', 'h', 'F']      fh$      f
['$', 'h', 'f']      fh$      POP
['$', 'h']      h$      POP
Given Input Accepted
vrushabh@vrushabh-HP:~/Downloads$
vrushabh@vrushabh-HP:~/Downloads$
```