

lec1_step6

October 6, 2022

```
[ ]: ## Python basics for novice data scientists, supported by Wagatsuma Lab@Kyutech
#
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#
# # @Time      : 2020-10-14
# # @Author    : Hiroaki Wagatsuma
# # @Site      : https://github.com/hirowgit/2A_python_basic_course
# # @IDE       : Python 3.7.7 (default, Mar 10 2020, 15:43:27) [Clang 10.0.0
# ↪(clang-1000.11.45.5)] on darwin
# # @File      : lec1_step6.py
```

```
[ ]: # Practice 2-3 (page 24/28)
# https://www.slideshare.net/tadahirotaniguchi0624/2-46861654
```

```
[2]: TargetGraph={
    'S': ['A', 'B'],
    'A': ['S', 'C', 'D'],
    'B': ['S', 'C'],
    'C': ['A', 'B', 'D'],
    'D': ['A', 'C']
}
```

```
#      'G': 'unknown now'
}
```

```
[3]: OpenList=['S']
ClosedList=[]
while OpenList:
    state=OpenList[0]
    del OpenList[0]
    ClosedList.extend(state)
    print(state)
    if state=='G':
        break
    activeNodes=[item for item in TargetGraph[state] if item not in ClosedList]
    #      OpenList.insert(-1, activeNodes) # the first item
    OpenList.append(activeNodes) # the last item
    OpenList=[item for i in OpenList for item in i if item not in ClosedList]
print('completed')
```

S
A
B
C
D
completed

```
[52]: TargetGraph={
    'A':['B','C'],
    'B':['A','D','E'],
    'C':['A','F','G','H'],
    'D':['B','I'],
    'E':['B'],
    'F':['C'],
    'G':['C','J'],
    'H':['C'],
    'I':['D'],
    'J':['G']
#      'G': 'unknown now'
}
```

```
[49]: OpenList=['A']
ClosedList=[]
k=1
while OpenList:
    state=OpenList[0]
    del OpenList[0]
    ClosedList.append(state)
    print(str(k)+" : "+state)
```

```
if state=='Goal':  
    break  
activeNodes=[item for item in TargetGraph[state] if item not in ClosedList]  
OpenList.append(activeNodes) # the last item  
OpenList=[item for i in OpenList for item in i if item not in ClosedList]  
k=k+1  
print('completed')
```

```
1: A  
2: B  
3: C  
4: D  
5: E  
6: F  
7: G  
8: H  
9: I  
10: J  
completed
```

```
[ ]:
```