C1 Python Code

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차 례

DTMC Simulator (25p)

```
# 25P
def soda_simul(this_state):
    u=np.random.uniform(0,1,size=1)

    if this_state=='c':
        if u<=0.7:
            next_state='c'
        else:
            next_state='p'
    else:
        if u<=0.5:
            next_state='c'
        else:
            next_state='p'

    return next_state


for i in range(1,6):
    path='c' # 'c'  coke today (day-0)

    for n in range(1,10):
```

```
        this_state=path[-1] # last elemen
        next_state=soda_simul(this_state)
        path+=next_state

    print(path)
```

```
## cpcccpcccp
## ccccppcccc
## cppppccccp
## ccccppcccc
## cccpccpppc
```

DTMC Simulator (26p)

```
# 26p
def cost_eval(path):
    cost_one_path=path.count('c')*1.5+path.count('p')*1

    return cost_one_path

MC_N=10000
spending_records=np.zeros((MC_N,))

for i in range(MC_N):
    path='c'
    for t in range(1,10):
        this_state=path[-1]
        next_state=soda_simul(this_state)
        path+=next_state

    spending_records[i]=cost_eval(path)

np.mean(spending_records)
```

```
## 13.36235
```