

csProject

July 18, 2022

```
[ ]: import numpy as np
import pandas as pd
```

```
[2]: pip install simpy
```

Collecting simpy

Downloading simpy-4.0.1-py2.py3-none-any.whl (29 kB)

Installing collected packages: simpy

Successfully installed simpy-4.0.1

Note: you may need to restart the kernel to use updated packages.

```
[7]: import simpy
import statistics
import random
```

System	Agent	process
resturants' modirator	API,Web	modirate
Customer manager	API	modirate
Order manager	API,Web	modirate
delivery	res & Cust	delivery
payment	Order'M	payment
API	User	API
Web	User	Web

0.1 get inputs

```
[1]: N_resMod = 1
N_cusMod = 1
N_ordMod = 1
N_delivery = 2
N_payment = 5
N_API = 3
N_web = 2
```

0.2 Goal

1. Average queue's len

2. Average queue's time

3. Utilization

4. Effect on the numberof sampls

5. Suggestion for improvement

```
[9]: waite_times = []

class FoodOnline(object):
    def
    →__init__(self,env,number_of_APIs,number_of_WEBs,number_of_customer_modirators,number_of_order
    →number_of_resturant_modirators,number_of_deliverys,number_of_payments ):
        self.env = env
        self.number_of_APIs = simpy.Resource(env, number_of_APIs)
        self.number_of_WEBs = simpy.Resource(env, number_of_WEBs)
        self.number_of_customer_modirators = simpy.Resource(env,
    →number_of_customer_modirators)
        self.number_of_order_modirators = simpy.Resource(env,
    →number_of_order_modirators)
        self.number_of_resturant_modirators = simpy.Resource(env,
    →number_of_resturant_modirators)
        self.number_of_deliverys = simpy.Resource(env, number_of_deliverys)
        self.number_of_payments = simpy.Resource(env, number_of_payments)

    def __order_using_API(self):
        yield self.env.timeout()
    def __order_using_WEB(self):
        yield self.env.timeout()

    def send_msg(self):
        pass

    def __view_info_MOBILE(self):
        pass

    def __view_info_WEB(self):
        pass

    def __order_delivery(self):
        pass

    def __order_tracking(self):
        pass
```

0.3 Communication with the system through API & Web

[]:

0.4 Get in line to Order using API or Web

[]: