

TUGAS 2

Bikes Share Systems

Nama/ NIM : Whisnumurty Galih Ananta
Mata Kuliah/ Kelas : Pemodelan dan Simulasi/ IF-01-02
Dosen Pengampu : Bapak Ardian Yusuf Wicaksono, S.Kom., M.Kom.
Source Code : [whisnumurtyga/Pemodelan-Simulasi \(github.com\)](https://github.com/whisnumurtyga/Pemodelan-Simulasi)

Kondisi awal state

```
1  bikeshare = State(ketintang=11, gayungan=20, benowo=5)
2
3  # CODE
4  # ketintang => KTT
5  # gayungan => GYG
6  # benowo => BNW
```

Fungsi sepeda berjalan

```
1  def ktt_to_gyg() :
2      if bikeshare.ketintang < 1 :
3          print('sepeda kampus ketintang kosong, harap tunggu...')
4      else :
5          bikeshare.ketintang -= 1
6          bikeshare.gayungan += 1
7
8  def ktt_to_bnw() :
9      if bikeshare.ketintang < 1 :
10         print('sepeda kampus ketintang kosong, harap tunggu...')
11     else :
12         bikeshare.ketintang -= 1
13         bikeshare.benowo += 1
14
15  def gyg_to_ktt() :
16      if bikeshare.gayungan < 1 :
17         print('sepeda kampus gayungan kosong, harap tunggu...')
18     else :
19         bikeshare.gayungan -= 1
20         bikeshare.ketintang += 1
21
22  def gyg_to_bnw() :
23      if bikeshare.gayungan < 1 :
24         print('sepeda kampus gayungan kosong, harap tunggu...')
25     else :
26         bikeshare.gayungan -= 1
27         bikeshare.benowo += 1
28
29  def bnw_to_ktt() :
30      if bikeshare.benowo < 1 :
31         print('sepeda kampus benowo kosong, harap tunggu...')
32     else :
33         bikeshare.benowo -= 1
34         bikeshare.ketintang += 1
35
36  def bnw_to_gyg() :
37      if bikeshare.benowo < 1 :
38         print('sepeda kampus benowo kosong, harap tunggu...')
39     else :
40         bikeshare.benowo -= 1
41         bikeshare.gayungan += 1
```

Fungsi Penentu sepeda yang jalan

```
1 def step(ktt, gyg, bnw):
2     if flip(ktt) :
3         if flip(ktt) :
4             ktt_to_gyg()
5         else:
6             ktt_to_bnw()
7     if flip(gyg) :
8         if flip(gyg) :
9             gyg_to_ktt()
10        else :
11            gyg_to_bnw()
12    if flip(bnw) :
13        if flip(bnw) :
14            bnw_to_gyg()
15        else :
16            bnw_to_ktt()
```

Fungsi Pembantu

```
1 def printAll() :
2     print(f'ketintang : {bikeshare.ketintang}')
3     print(f'gayungan : {bikeshare.gayungan}')
4     print(f'benowo : {bikeshare.benowo}')
5
6 def simulations(n, p1, p2, p3) :
7     ketintang = TimeSeries()
8     gayungan = TimeSeries()
9     benowo = TimeSeries()
10
11     for i in range(n):
12         print(i)
13         step(p1, p2, p3)
14         ketintang[i+1] = bikeshare.ketintang
15         gayungan[i+1] = bikeshare.gayungan
16         benowo[i+1] = bikeshare.benowo
17
18     ketintang.plot()
19     gayungan.plot()
20     benowo.plot()
21
22     decorate(title='Keintang - Gayungan - Benowo',
23             xlabel='Time step (min)',
24             ylabel='Number of bikes')
25
26     printAll()
```

Main

```
1 simulations(480, 0.5, 0.33, 0.2)
```