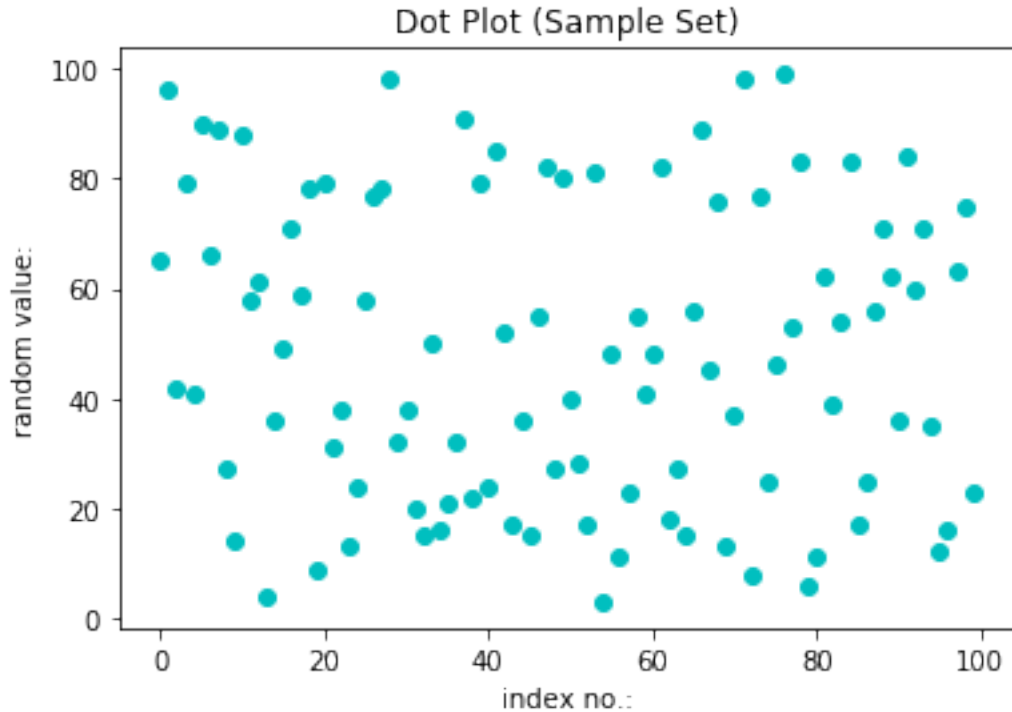


HW7C

October 30, 2019

```
[1]: import random
x = list(range(0,100))
y = []
for i in range(0,100):
    y.append(random.randint(1,100))
```

```
[12]: %matplotlib inline
import matplotlib.pyplot as plt
plt.plot(x,y, 'co')
plt.xlabel('index no.:')
plt.ylabel('random value:')
plt.title('Dot Plot (Sample Set)')
plt.show()
```



```
[4]: import math

def density(x,y,x0,y0,dist0):
    c = 0
    for k in x:
        dist= math.sqrt((x[k]-x0)**2+(y[k]-y0)**2)
        #print(int(dist))
        if ((dist0) >= (dist) and dist != 0):
            c += 1
    return c
```

```
[5]: import numpy as np
dens = np.zeros([2,2])
dist0 = 0
d=density(x,y,5,y[5],25)
print(d)
```

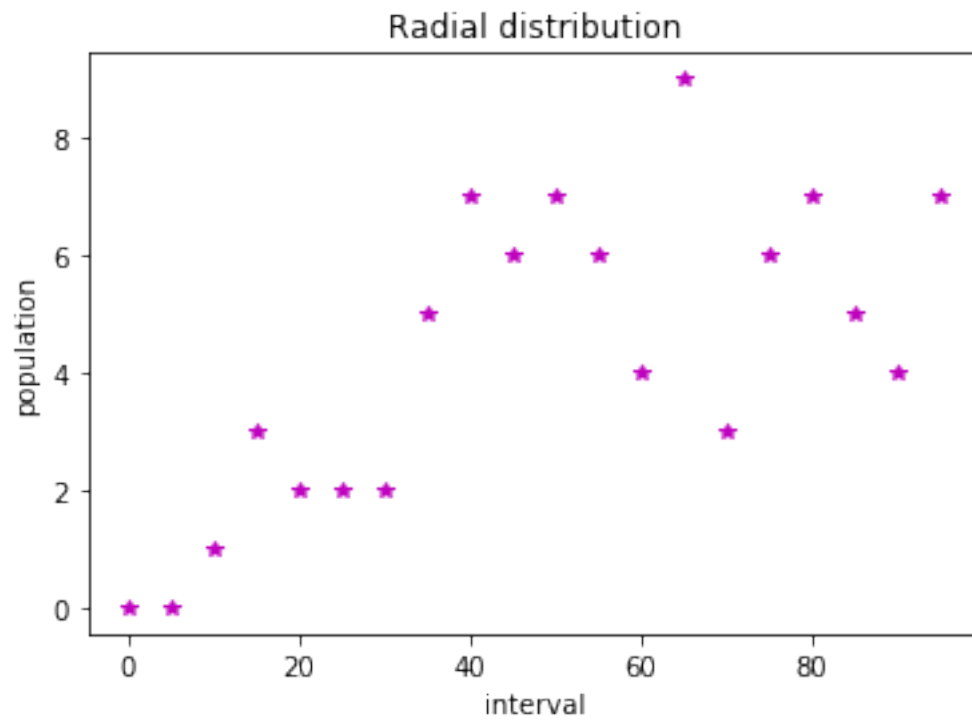
10

```
[8]: interval = list(range(0,100,5))
import numpy as np
population = np.zeros(20)
temp = 0

for i in x:
    temp = 0
    for j in range(0,20):
        #print(temp)
        population[j]=density(x,y,x[i],y[i],interval[j]) - temp
        temp += population[j]
        #temp = density(x,y,x[i],y[i],interval[j])
print(population)
```

[0. 0. 1. 3. 2. 2. 2. 5. 7. 6. 7. 6. 4. 9. 3. 6. 7. 5. 4. 7.]

```
[13]: plt.plot(interval,population,'*m')
plt.xlabel('interval')
plt.ylabel('population')
plt.title('Radial distribution')
plt.show()
```



[]: