wifianalize

May 25, 2022

[1]:
```
import random
from math import log
from math import sqrt
import seaborn as sns

mas = [ [1.0 for j in range(5)] for i in range(10)]

f1 = 2.4
f2 = 5

tx = 23
ag = 15
im = 3
bp = 15

ai = 1
aj = 1
print("Router in point (1, 1)")
```

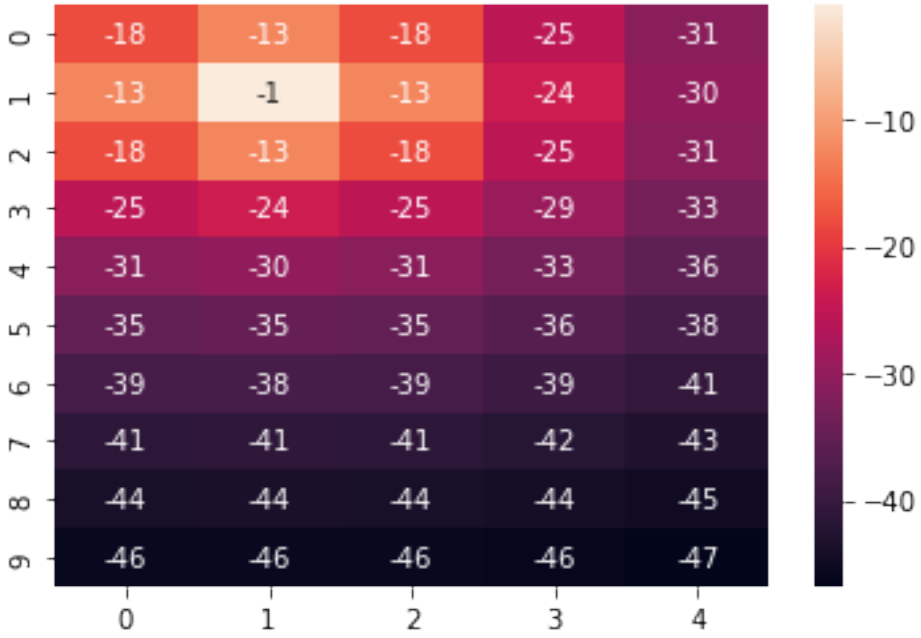
```
Router in point (1, 1)
```

[2]:
```
print("2.4 GHz")
for i in range(10):
    for j in range(5):
        r = sqrt((ai - i)**2 + (aj-j)**2)
        if (r!=0):
            pl = 26 * log(f1, 10) + 22.7 + 36.7 * log(r, 10)
            mas[i][j] = tx + ag - im - bp - pl
        else:
            mas[i][j] = -1
    print([round(x,2) for x in mas[i]])
sns.heatmap(mas, annot = True)
```

```
2.4 GHz
[-18.11, -12.59, -18.11, -25.41, -30.94]
[-12.59, -1, -12.59, -23.63, -30.1]
[-18.11, -12.59, -18.11, -25.41, -30.94]
[-25.41, -23.63, -25.41, -29.16, -33.03]
```

```
[-30.94, -30.1, -30.94, -33.03, -35.62]
[-35.16, -34.68, -35.16, -36.46, -38.24]
[-38.55, -38.24, -38.55, -39.42, -40.69]
[-41.36, -41.14, -41.36, -41.98, -42.92]
[-43.76, -43.6, -43.76, -44.23, -44.94]
[-45.85, -45.73, -45.85, -46.21, -46.78]
```

[2]: <AxesSubplot:>



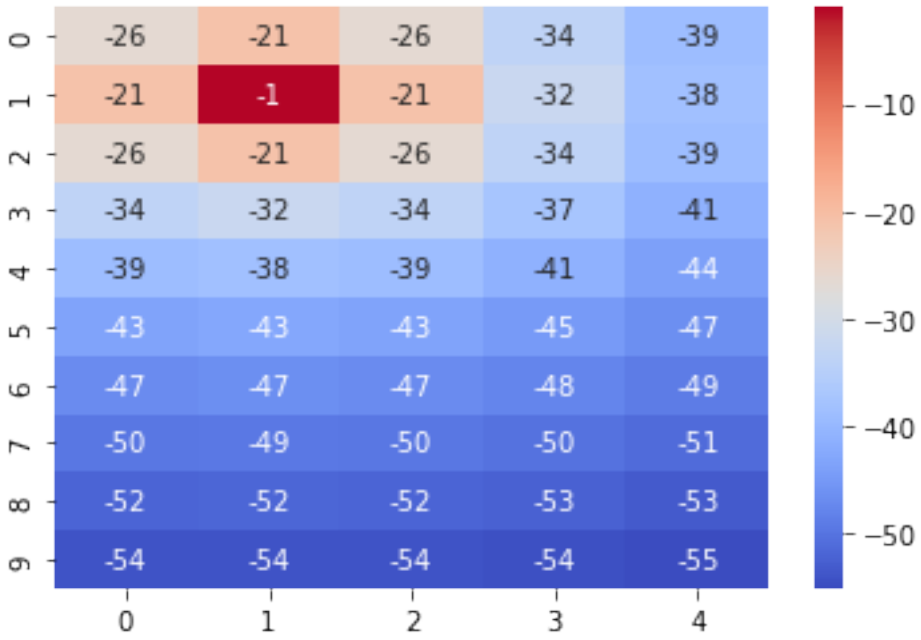
[3]:
```
print("5 GHz")
for i in range(10):
    for j in range(5):
        r = sqrt((ai - i)**2 + (aj-j)**2)
        if (r!=0):
            pl = 26 * log(f2, 10) + 22.7 + 36.7 * log(r, 10)
            mas[i][j] = tx + ag - im - bp - pl
        else:
            mas[i][j] = -1
    print([round(x,2) for x in mas[i]])

sns.heatmap(mas, annot = True, cmap= 'coolwarm')
```

```
5 GHz
[-26.4, -20.87, -26.4, -33.7, -39.22]
[-20.87, -1, -20.87, -31.92, -38.38]
[-26.4, -20.87, -26.4, -33.7, -39.22]
```

```
[-33.7, -31.92, -33.7, -37.44, -41.31]
[-39.22, -38.38, -39.22, -41.31, -43.91]
[-43.45, -42.97, -43.45, -44.75, -46.53]
[-46.84, -46.53, -46.84, -47.71, -48.98]
[-49.65, -49.43, -49.65, -50.27, -51.21]
[-52.05, -51.89, -52.05, -52.51, -53.23]
[-54.14, -54.02, -54.14, -54.5, -55.07]
```

[3]: <AxesSubplot:>



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