

⑦ KNN

Floor Area [m^2]	Lease Price	Euclidean distance (Floor area)	Rank
45	10K	9	7
52	13K	2	3
52	11K	2	2
54	?	?	
55	18K	1	1
57	16K	3	4
62	13K	8	5
62	12K	8	6

The missing value (?) is

① If $K=1$, 18K

② If $K=2$, lease price can be b/w

11K - 18K. let us

take the mid point = $14.5K$

③ If $K=3$, lease price can be b/w.

11K - 18K.

$$\text{Take the midpoint} = \frac{11K + 13K + 18K}{3}$$

$$= 14K$$

mlearn301_hw2_7

Load Data

```
lease = read.csv('/Users/ravirajmulasa/Documents/Certificate_in_MachineLearning/Advanced_Machine_Learning')
```

k = 1

```
lease1 = kNN(lease, variable = c("price"), k = 1)
```

```
## Warning in `[.data.table`(data, , `:=`(imp_vars[index_imp_vars], FALSE), :  
## with=FALSE ignored, it isn't needed when using :=. See ?':=' for examples.
```

```
lease1
```

```
##   area price price_imp  
## 1   45 10000      FALSE  
## 2   52 13000      FALSE  
## 3   52 11000      FALSE  
## 4   54 18000       TRUE  
## 5   55 18000      FALSE  
## 6   57 16000      FALSE  
## 7   62 13000      FALSE  
## 8   62 12000      FALSE
```

k = 2

```
lease1 = kNN(lease, variable = c("price"), k = 2)
```

```
## Warning in `[.data.table`(data, , `:=`(imp_vars[index_imp_vars], FALSE), :  
## with=FALSE ignored, it isn't needed when using :=. See ?':=' for examples.
```

```
lease1
```

```
##   area price price_imp  
## 1   45 10000      FALSE  
## 2   52 13000      FALSE  
## 3   52 11000      FALSE  
## 4   54 15500       TRUE  
## 5   55 18000      FALSE  
## 6   57 16000      FALSE  
## 7   62 13000      FALSE  
## 8   62 12000      FALSE
```

k = 3

```
lease1 = kNN(lease, variable = c("price"), k = 3)
```

```
## Warning in `[.data.table`(data, , `:=`(imp_vars[index_imp_vars], FALSE), :  
## with=FALSE ignored, it isn't needed when using :=. See ?':=' for examples.
```

```
lease1
```

```
##   area price price_imp  
## 1   45 10000      FALSE  
## 2   52 13000      FALSE  
## 3   52 11000      FALSE  
## 4   54 13000       TRUE  
## 5   55 18000      FALSE  
## 6   57 16000      FALSE  
## 7   62 13000      FALSE  
## 8   62 12000      FALSE
```