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#### 4. Jawaban No 4

- a. Berdasarkan data tersebut bagaimana perlakuan dengan kondisi Ibu hamil dengan Usia 30 Tahun, yang merupakan Kelahiran ke -1, dengan Waktu kelahiran sesuai dengan HPL, Memiliki tekanan darah Normal? Carilah KNN dengan menggunakan Key = 5

```
In [1]: import pandas as pd
import numpy as np
import matplotlib.pyplot as plt
%matplotlib inline
```

```
In [2]: pd.__version__
```

```
Out[2]: '1.0.1'
```

```
In [3]: data = pd.read_csv('E:/KULIAH/SEMESTER 6/data mining/uas/datamining-master/Uas/dataset_soal No. 4.txt', delimiter=',')
```

```
In [4]: data
```

```
Out[4]:
```

	Usia	Kelahiran_ke-	Waktu_Kelahiran	Tekanan_darah	Kelainan_jantung	Caesarian
0	22	1	0	2	0	0
1	28	2	0	1	0	1
2	28	2	1	1	0	0
3	28	1	0	2	0	0
4	22	2	0	1	0	1
...	...	...	...	...	...	...
75	27	2	1	1	0	0
76	33	4	0	1	0	1
77	29	2	1	2	0	1
78	25	1	2	0	0	1
79	24	2	2	1	0	0

80 rows x 6 columns

```
In [5]: import math
dis = []
for i in range(80):
    dis.append(math.sqrt((float(data.iloc[i]['Usia'])-30)**2+
                        (float(data.iloc[i]['Kelahiran_ke-']- 1)**2+
                        (float(data.iloc[i]['Waktu_Kelahiran'])-0)**2+
                        (float(data.iloc[i]['Tekanan_darah'])-1)**2))
```

```
In [6]: data['dis'] = dis
data
```

```
Out[6]:
```

	Usia	Kelahiran_ke-	Waktu_Kelahiran	Tekanan_darah	Kelainan_jantung	Caesarian	dis
0	22	1	0	2	0	0	8.062258
1	28	2	0	1	0	1	4.123106
2	28	2	1	1	0	0	4.242641
3	28	1	0	2	0	0	2.236068
4	22	2	0	1	0	1	8.062258
...	...	...	...	...	...	...	...
75	27	2	1	1	0	0	3.316625
76	33	4	0	1	0	1	4.242641
77	29	2	1	2	0	1	2.000000
78	25	1	2	0	0	1	5.477226
79	24	2	2	1	0	0	6.403124

80 rows x 7 columns

```
In [7]: data.sort_values('dis')
Out[7]:
```

	Usia	Kelahiran_ke-	Waktu_Kelahiran	Tekanan_darah	Kelainan_jantung	Caesarian	dis
27	30	1	0	1	0	0	0.000000
38	31	1	0	1	0	0	1.000000
67	29	2	0	1	1	0	1.414214
54	29	2	0	1	1	1	1.414214
59	30	2	1	2	1	1	1.732051
...	...	...	...	...	...	...	...
41	19	1	0	1	0	1	11.000000
61	19	1	0	1	0	1	11.000000
25	18	1	0	1	0	0	12.000000
26	18	1	1	2	1	1	12.083046
70	17	1	0	0	0	1	13.038405

80 rows x 7 columns

```
In [8]: y = data.sort_values('dis').head(5)
y
```

```
Out[8]:
```

	Usia	Kelahiran_ke-	Waktu_Kelahiran	Tekanan_darah	Kelainan_jantung	Caesarian	dis
27	30	1	0	1	0	0	0.000000
38	31	1	0	1	0	0	1.000000
67	29	2	0	1	1	0	1.414214
54	29	2	0	1	1	1	1.414214
59	30	2	1	2	1	1	1.732051

```
In [9]: z = y["Caesarian"]
z
```

```
Out[9]: 27    0
        38    0
        67    0
        54    1
        59    1
        Name: Caesarian, dtype: int64
```

```
In [10]: np.mean(z)
Out[10]: 0.4
```

```
In [12]: data.to_excel('E:/KULIAH/SEMESTER 6/data mining/uas/project uas/output_soal_no4a.xls')
```

- b. Bagaimana Apabila Ibu hamil dengan Usia 29 Tahun, yang merupakan Kelahiran ke - 2, dengan Waktu kelahiran sesuai dengan HPL, Memiliki tekanan darah Tinggi? Carilah KNN dengan menggunakan Key =5

```
In [1]: import pandas as pd
import numpy as np
import matplotlib.pyplot as plt
%matplotlib inline
```

```
In [2]: pd.__version__
Out[2]: '1.0.1'
```

```
In [3]: data = pd.read_csv('E:/KULIAH/SEMESTER 6/data mining/uas/datamining-master/Uas/dataset_soal No. 4.txt', delimiter=',')
```

```
In [4]: data
```

```
Out[4]:
```

	Usia	Kelahiran_ke-	Waktu_Kelahiran	Tekanan_darah	Kelainan_jantung	Caesarian
0	22	1	0	2	0	0
1	26	2	0	1	0	1
2	26	2	1	1	0	0
3	28	1	0	2	0	0
4	22	2	0	1	0	1
...	...	...	...	...	...	...
75	27	2	1	1	0	0
76	33	4	0	1	0	1
77	29	2	1	2	0	1
78	25	1	2	0	0	1
79	24	2	2	1	0	0

80 rows x 6 columns

```
In [5]: import math
dis = []
for i in range(80):
    dis.append(math.sqrt((float(data.iloc[i]['Usia'])-29)**2+
                        (float(data.iloc[i]['Kelahiran_ke-'])-2)**2+
                        (float(data.iloc[i]['Waktu_kelahiran'])-0)**2+
                        (float(data.iloc[i]['Tekanan_darah'])-2)**2))
```

```
In [6]: data['dis'] = dis
data
```

```
Out[6]:
```

	Usia	Kelahiran_ke-	Waktu_kelahiran	Tekanan_darah	Kelainan_jantung	Caesarian	dis
0	22	1	0	2	0	0	7.071068
1	26	2	0	1	0	1	3.162278
2	26	2	1	1	0	0	3.316625
3	28	1	0	2	0	0	1.414214
4	22	2	0	1	0	1	7.071068
...	...	...	...	...	...	...	...
75	27	2	1	1	0	0	2.449490
76	33	4	0	1	0	1	4.582576
77	29	2	1	2	0	1	1.000000
78	25	1	2	0	0	1	5.000000
79	24	2	2	1	0	0	5.477228

80 rows x 7 columns

```
In [7]: data.sort_values('dis')
```

```
Out[7]:
```

	Usia	Kelahiran_ke-	Waktu_kelahiran	Tekanan_darah	Kelainan_jantung	Caesarian	dis
54	29	2	0	1	1	1	1.000000
77	29	2	1	2	0	1	1.000000
67	29	2	0	1	1	0	1.000000
59	30	2	1	2	1	1	1.414214
3	28	1	0	2	0	0	1.414214
...	...	...	...	...	...	...	...
61	19	1	0	1	0	1	10.099505
26	18	1	1	2	1	1	11.090537
31	40	1	0	1	1	1	11.090537
25	18	1	0	1	0	0	11.090537
70	17	1	0	0	0	1	12.208556

80 rows x 7 columns

```
In [8]: y = data.sort_values('dis').head(5)
y
```

```
Out[8]:
```

	Usia	Kelahiran_ke-	Waktu_kelahiran	Tekanan_darah	Kelainan_jantung	Caesarian	dis
54	29	2	0	1	1	1	1.000000
77	29	2	1	2	0	1	1.000000
67	29	2	0	1	1	0	1.000000
59	30	2	1	2	1	1	1.414214
3	28	1	0	2	0	0	1.414214

```
In [9]: z = y["Caesarian"]
z
```

```
Out[9]: 54    1
77     1
67     0
59     1
3       0
Name: Caesarian, dtype: int64
```

```
In [10]: np.mean(z)
```

```
Out[10]: 0.6
```

```
In [11]: data.to_excel('E:/KULIAH/SEMESTER 6/data mining/uas/project uas/output_soal_no4b.xls')
```

[https://github.com/irafulbariyah/project\\_uas](https://github.com/irafulbariyah/project_uas)