LAPORAN UTS KEDUA
KECERDASAN BUATAN

Cinderella Ih Hsin Chiang

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MANAJEMEN INFORMATIKA

FAKULTAS VOKASI

UNIVERSITAS NEGERI SURABAYA

UTS – 2

```
import numpy as np

inputs = [[0, 1, 2, 3, 4, 5, 6, 7, 8, 9],
                [9, 2, 2, 3, 4, 5, 7, 7, 8, 1],
                [0, 9, 2, 8, 4, 7, 6, 5, 3, 1],
                     [9, 8, 7, 6, 5, 4, 3, 2, 1, 0],
                     [1, 1, 2, 2, 4, 4, 6, 7, 7, 9],
                     [5, 1, 5, 3, 4, 5, 7, 7, 8, 9]]

weights = [[0.2, 0.4, 0.6, 0.8, 0.3, 0.5, 0.7, 0.1,
0.9, 0.1],
           [0.1, 0.2, 0.2, 0.4, 0.5, 0.6, 0.7, 0.8,
0.9, 0.1],
           [0.9, 0.1, 0.2, 0.3, 0.4, 0.5, 0.6, 0.6,
0.7, 0.8],
           [0.2, 0.2, 0.2, 0.2, 0.2, 0.2, 0.2, 0.2,
0.2, 0.2],
           [0.1, 0.1, 0.1, 0.1, 0.1, 0.1, 0.1, 0.1,
0.1, 0.1]]

biases1 = [5, 3, 2, 1, 4]

weights2 = [[0.9, 0.1, 0.2, 0.3, 0.4],
                    [0.1, 0.2, 0.2, 0.4, 0.5],
                    [0.2, 0.4, 0.6, 0.8, 0.3]]

biases2 = [4, 6, 3]

layer1_outputs = np.dot(inputs, np.array(weights).T) +
biases1

layer2_outputs = np.dot(layer1_outputs,
np.array(weights2).T) + biases2
print(layer2_outputs)

>>>>
[[41.92 27.98 46.63]
 [44.69 29.26 49.46]
 [42.58 26.27 41.65]
```

```
 [39.77 24.94 39.29]
 [39.62 27.04 44.77]
 [47.29 31.   53.18]]
```

Transpose :

[41.92	27.98	46.63]			[41.92	44.69	42.58	39.77	39.62	47.29]
[44.69	29.26	49.46]			[27.98	29.26	26.27	24.94	27.04	31.]
[42.58	26.27	41.65]	=		[46.63	49.46	41.65	39.29	44.77	53.18]
[39.77	24.94	39.29]								
[39.62	27.04	44.77]								
[47.29	31.	53.18]								

Penambahan Bias :

```
import numpy as np
inputs = [[0, 1, 2, 3, 4, 5, 6, 7, 8, 9],
                [9, 2, 2, 3, 4, 5, 7, 7, 8, 1],
                [0, 9, 2, 8, 4, 7, 6, 5, 3, 1],
                     [9, 8, 7, 6, 5, 4, 3, 2, 1, 0],
                     [1, 1, 2, 2, 4, 4, 6, 7, 7, 9],
                     [5, 1, 5, 3, 4, 5, 7, 7, 8, 9]]

weights = [[0.2, 0.4, 0.6, 0.8, 0.3, 0.5, 0.7, 0.1,
0.9, 0.1],
           [0.1, 0.2, 0.2, 0.4, 0.5, 0.6, 0.7, 0.8,
0.9, 0.1],
           [0.9, 0.1, 0.2, 0.3, 0.4, 0.5, 0.6, 0.6,
0.7, 0.8],
           [0.2, 0.2, 0.2, 0.2, 0.2, 0.2, 0.2, 0.2,
0.2, 0.2],
           [0.1, 0.1, 0.1, 0.1, 0.1, 0.1, 0.1, 0.1,
0.1, 0.1]]

biases1 = [5, 3, 2, 1, 4]

weights2 = [[0.9, 0.1, 0.2, 0.3, 0.4],
                    [0.1, 0.2, 0.2, 0.4, 0.5],
```

```
                    [0.2, 0.4, 0.6, 0.8, 0.3]]

biases2 = [4, 6, 3]

weights3 = [[0.2, 0.4, 0.6],
                    [0.1, 0.2, 0.2],
                    [0.9, 0.1, 0.2],
                    [0.2, 0.2, 0.2],
                    [0.1, 0.1, 0.1],
                    [0.3, 0.3, 0.3]]

biases3 = [9, 3, 2, 6, 7, 1]

layer1_outputs = np.dot(inputs, np.array(weights).T) +
biases1

layer2_outputs = np.dot(layer1_outputs,
np.array(weights2).T) + biases2

layer3_outputs = np.dot(layer2_outputs,
np.array(weights3).T) + biases3

print(layer3_outputs)

>>>>
[59.318 23.213 55.039 30.682 19.341 38.023]
 [53.014 20.842 51.279 28.1   18.05  34.15 ]
 [50.504 19.823 48.145 26.8   17.4   32.2  ]
 [54.602 21.324 49.316 28.286 18.143 34.429]
 [62.766 24.565 58.297 32.294 20.147 40.441]]
```