

LAPORAN UTS KECERDASAN BUATAN



OLEH

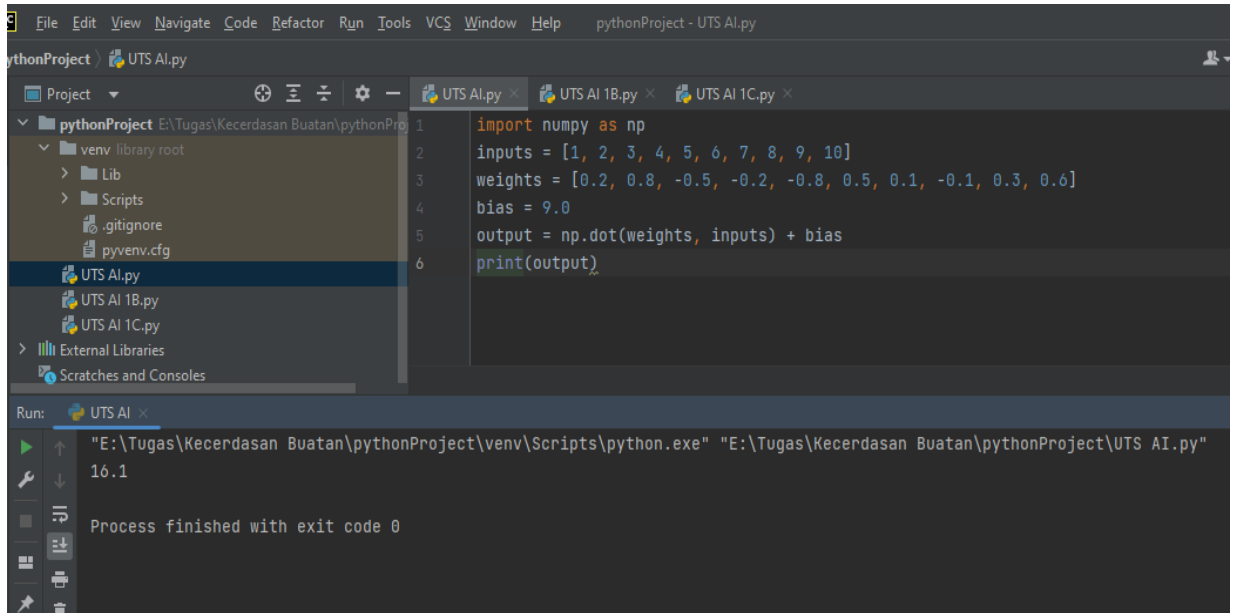
ACHMAD NURS SYURURI ARIFIN

21091397024

2021B

D4 MANAJEMEN INFORMATIKA

1. Single Neuron



```
File Edit View Navigate Code Refactor Run Tools VCS Window Help pythonProject - UTS AI.py

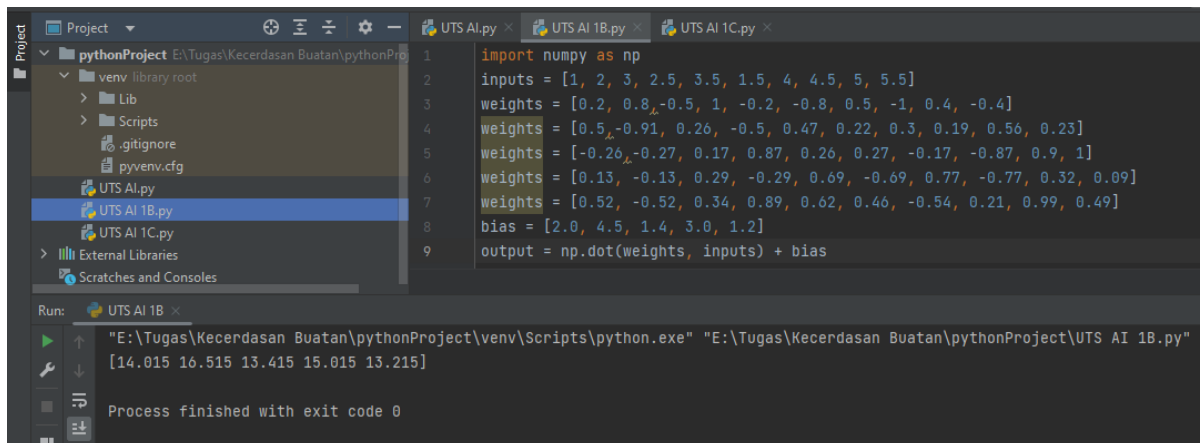
pythonProject E:\Tugas\Kecerdasan Buatan\pythonPro
  venv library root
  > Lib
  > Scripts
  .gitignore
  pyvenv.cfg
  UTS AI.py
  UTS AI 1B.py
  UTS AI 1C.py
  External Libraries
  Scratches and Consoles

Run: UTS AI
  "E:\Tugas\Kecerdasan Buatan\pythonProject\venv\Scripts\python.exe" "E:\Tugas\Kecerdasan Buatan\pythonProject\UTS AI.py"
  16.1
  Process finished with exit code 0
```

```
1 import numpy as np
2 inputs = [1, 2, 3, 4, 5, 6, 7, 8, 9, 10]
3 weights = [0.2, 0.8, -0.5, -0.2, -0.8, 0.5, 0.1, -0.1, 0.3, 0.6]
4 bias = 9.0
5 output = np.dot(weights, inputs) + bias
6 print(output)
```

Pada *source code* ini, input data masuk ke dalam neuron lalu melakukan operasi dot dengan weight kemudian menambahkan bias. Kemudian, hasilnya akan dicetak melalui *command print*.

2. Multi Neuron



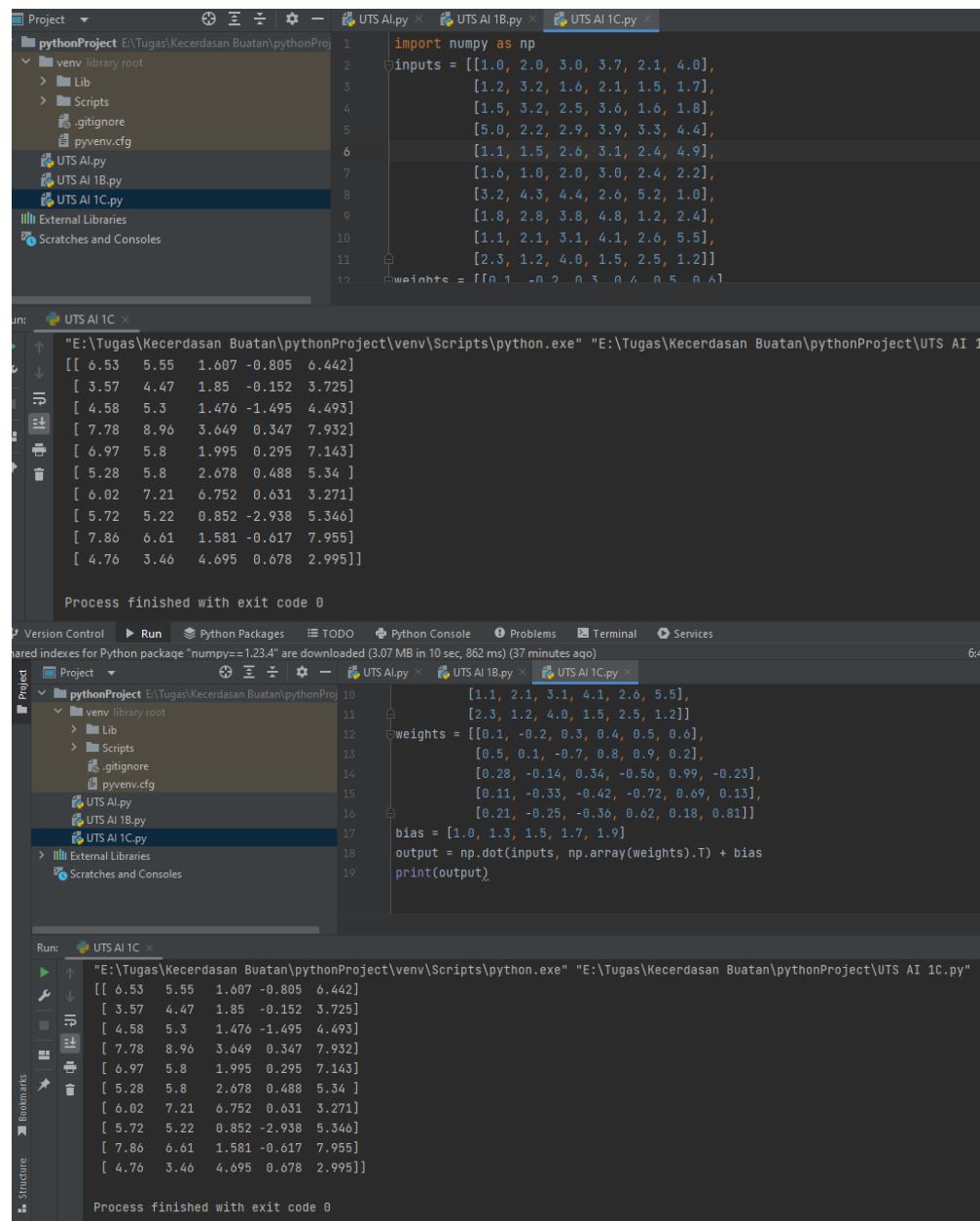
```
Project pythonProject E:\Tugas\Kecerdasan Buatan\pythonPro
  venv library root
  > Lib
  > Scripts
  .gitignore
  pyvenv.cfg
  UTS AI.py
  UTS AI 1B.py
  UTS AI 1C.py
  External Libraries
  Scratches and Consoles

Run: UTS AI 1B
  "E:\Tugas\Kecerdasan Buatan\pythonProject\venv\Scripts\python.exe" "E:\Tugas\Kecerdasan Buatan\pythonProject\UTS AI 1B.py"
  [14.015 16.515 13.415 15.015 13.215]
  Process finished with exit code 0
```

```
1 import numpy as np
2 inputs = [1, 2, 3, 2.5, 3.5, 1.5, 4, 4.5, 5, 5.5]
3 weights = [0.2, 0.8, -0.5, 1, -0.2, -0.8, 0.5, -1, 0.4, -0.4]
4 weights = [0.5, -0.91, 0.26, -0.5, 0.47, 0.22, 0.3, 0.19, 0.56, 0.23]
5 weights = [-0.26, -0.27, 0.17, 0.87, 0.26, 0.27, -0.17, -0.87, 0.9, 1]
6 weights = [0.13, -0.13, 0.29, -0.29, 0.69, -0.69, 0.77, -0.77, 0.32, 0.09]
7 weights = [0.52, -0.52, 0.34, 0.89, 0.62, 0.46, -0.54, 0.21, 0.99, 0.49]
8 bias = [2.0, 4.5, 1.4, 3.0, 1.2]
9 output = np.dot(weights, inputs) + bias
```

Pada *source code* ini, input melakukan operasi dot dengan 5 weights yang terhubung dengan masing-masing node kemudian ditambah dengan bias yang ada. Kemudian, hasilnya akan dicetak melalui *command print*.

3. Multi Neuron Batch Input



```
1 import numpy as np
2 inputs = [[1.0, 2.0, 3.0, 3.7, 2.1, 4.0],
3           [1.2, 3.2, 1.6, 2.1, 1.5, 1.7],
4           [1.5, 3.2, 2.5, 3.6, 1.6, 1.8],
5           [5.0, 2.2, 2.9, 3.9, 3.3, 4.4],
6           [1.1, 1.5, 2.6, 3.1, 2.4, 4.9],
7           [1.6, 1.0, 2.0, 3.0, 2.4, 2.2],
8           [3.2, 4.3, 4.4, 2.6, 5.2, 1.0],
9           [1.8, 2.8, 3.8, 4.8, 1.2, 2.4],
10          [1.1, 2.1, 3.1, 4.1, 2.6, 5.5],
11          [2.3, 1.2, 4.0, 1.5, 2.5, 1.2]]
12 weights = [[0.1, -0.2, 0.3, 0.4, 0.5, 0.6],
13            [0.5, 0.1, -0.7, 0.8, 0.9, 0.2],
14            [0.28, -0.14, 0.34, -0.56, 0.99, -0.23],
15            [0.11, -0.33, -0.42, -0.72, 0.69, 0.13],
16            [0.21, -0.25, -0.36, 0.62, 0.18, 0.81]]
17 bias = [1.0, 1.3, 1.5, 1.7, 1.9]
18 output = np.dot(inputs, np.array(weights).T) + bias
19 print(output)
```

Run: "E:\Tugas\Kecerdasan Buatan\pythonProject\venv\Scripts\python.exe" "E:\Tugas\Kecerdasan Buatan\pythonProject\UTS AI 1C.py"

```
[[ 6.53  5.55  1.607 -0.805  6.442]
 [ 3.57  4.47  1.85 -0.152  3.725]
 [ 4.58  5.3  1.476 -1.495  4.493]
 [ 7.78  8.96  3.649  0.347  7.932]
 [ 6.97  5.8  1.995  0.295  7.143]
 [ 5.28  5.8  2.678  0.488  5.34 ]
 [ 6.02  7.21  6.752  0.631  3.271]
 [ 5.72  5.22  0.852 -2.938  5.346]
 [ 7.86  6.61  1.581 -0.617  7.955]
 [ 4.76  3.46  4.695  0.678  2.995]]
```

Process finished with exit code 0

Pada *source code* ini, input dioperasikan menggunakan operasi dot dan dikalikan dengan weight menggunakan array kemudian ditambahkan dengan bias. Lalu hasilnya akan dicetak melalui *command print*.