

+ Code + Text

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```
[ ] 1 # Latihan 1
2
3 import numpy as np
4
5 A = np.loadtxt("https://docs.google.com/spreadsheets/d/e/2PACX-1vTs01o2fddVbz8ZwdIZ00YYhie4trT30AMtg7Uyv8SsyUkGf1HaONRVaID1S-4K0kHhwwKJ2PaUWKya/pub?gid=0&single=true&output=csv", delimiter=",")
6 print("Matriks A:\n", A)
7 [row, col] = np.shape(A)
8 print("1. Ukuran Matriks A:", row, "x", col)
9 print("2. Elemen pada baris ke-89 dan kolom ke-123:", A[89][123])
10
11 square_a = A@A
12 print("3. Elemen pada baris ke-121 dan kolom ke-75 dari A^2: ", square_a[121][75])
13 print("4. 5 elemen pertama dari baris terakhir matriks A:", A[499: , 0:5])
14 print("5. 10 elemen terakhir dari kolom ke 163 dari matriks A:\n", A[490:500 , 162:163])
15
16 new_matrix = (A[0:500:3])
17 np.savetxt('MatKelp3.csv', new_matrix, delimiter=",")
18
19 print("6. Code program untuk menjalankan:\nnew_matrix = (A[0:500:3])\nnp.savetxt('MatKelp3.csv', new_matrix, delimiter=',')")
```

```
Matriks A:
[[10. 34. 63. ... 50. 34. 27.]
 [ 1. 87. 64. ... 24. 52. 54.]
 [73. 41. 53. ... 37. 60. 46.]
 ...
 [88.  4. 51. ... 40.  5.  8.]
 [64.  6. 80. ... 16. 57. 39.]
 [45. 91. 41. ...  3. 71. 31.]]
1. Ukuran Matriks A: 500 x 500
2. Elemen pada baris ke-89 dan kolom ke-123: 50.0
3. Elemen pada baris ke-121 dan kolom ke-75 dari A^2: 1155341.0
4. 5 elemen pertama dari baris terakhir matriks A: [[45. 91. 41.  5. 21.]]
5. 10 elemen terakhir dari kolom ke 163 dari matriks A:
[[33.]
 [32.]
 [91.]
 [69.]
 [14.]
 [52.]
 [90.]
 [47.]
 [91.]
 [ 9.]]
6. Code program untuk menjalankan:
new_matrix = (A[0:500:3])
np.savetxt('MatKelp3.csv', new_matrix, delimiter=',')
```

```
[ ] 1 # Latihan 2
    2
    3 import numpy as np
    4
    5 C = np.zeros((100, 100))
    6 C[1:-1,1:-1] = 1
    7 [row, col] = np.shape(C)
    8 print("Matriks C berukuran", row, "x", col, "yang memiliki elemen 0 di pinggir dan elemen 1 di bagian tengahnya:\n", C)
```

Matriks C berukuran 100 x 100 yang memiliki elemen 0 di pinggir dan elemen 1 di bagian tengahnya:

```
[[0. 0. 0. ... 0. 0. 0.]
 [0. 1. 1. ... 1. 1. 0.]
 [0. 1. 1. ... 1. 1. 0.]
 ...
 [0. 1. 1. ... 1. 1. 0.]
 [0. 1. 1. ... 1. 1. 0.]
 [0. 0. 0. ... 0. 0. 0.]]
```

```
1 import numpy as np
2
3 A = np.loadtxt("https://docs.google.com/spreadsheets/d/e/2PACX-1vTs01o2fddVbz8ZuJZ08YYhie4trT38AMtg7Uyv8SsyUkGF1HaONRvaID1S-4KOKHhwKJ2PalWkya/pub?gid=0&single=true&output=csv", delimiter=",")
4 print("Matriks A:\n", A)
5 print()
6 X = A[0: :2]
7 print("Matriks X berisi baris-baris indeks genap saja:\n", X)
8 print()
9 Y = A[1: :2]
10 print("Matriks Y berisi baris-baris indeks ganjil saja:\n", Y)
11
12 Z = np.block([
13     [X],
14     [Y]
15 ])
16
17 print()
18 print("Matrix Z gabungan Matriks X dan Y:\n", Z)
19
20 m_block = np.block([
21     [X],
22     [Z],
23     [Y]
24 ])
25 print()
26 print("Matrix XYZ:\n", m_block)
27
28 np.savetxt('XYZmatrix.csv', m_block, delimiter=",")
29
```

Matriks A:
[[10. 34. 63. ... 50. 34. 27.]
[1. 87. 64. ... 24. 52. 54.]
[73. 41. 53. ... 37. 60. 46.]
...
[88. 4. 51. ... 40. 5. 8.]
[64. 6. 80. ... 16. 57. 39.]
[45. 91. 41. ... 3. 71. 31.]]

Matriks X berisi baris-baris indeks genap saja:
[[10. 34. 63. ... 50. 34. 27.]
[73. 41. 53. ... 37. 60. 46.]
[51. 51. 96. ... 24. 34. 51.]
...
[79. 81. 81. ... 2. 23. 76.]
[39. 11. 64. ... 10. 78. 3.]
[64. 6. 80. ... 16. 57. 39.]]

Matriks Y berisi baris-baris indeks ganjil saja:
[[1. 87. 64. ... 24. 52. 54.]
[33. 8. 67. ... 55. 60. 18.]
[18. 84. 46. ... 31. 55. 30.]
...
[33. 21. 15. ... 57. 95. 43.]
[88. 4. 51. ... 40. 5. 8.]
[45. 91. 41. ... 3. 71. 31.]]

Matrix Z gabungan Matriks X dan Y:
[[10. 34. 63. ... 50. 34. 27.]
[73. 41. 53. ... 37. 60. 46.]
[51. 51. 96. ... 24. 34. 51.]
...
[33. 21. 15. ... 57. 95. 43.]
[88. 4. 51. ... 40. 5. 8.]
[45. 91. 41. ... 3. 71. 31.]]

Matrix XYZ:
[[10. 34. 63. ... 50. 34. 27.]
[73. 41. 53. ... 37. 60. 46.]
[51. 51. 96. ... 24. 34. 51.]
...
[33. 21. 15. ... 57. 95. 43.]
[88. 4. 51. ... 40. 5. 8.]
[45. 91. 41. ... 3. 71. 31.]]