Artificial Intelligence

Lab 06 Tasks

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Task1.

Solution:

```
import numpy as np

array = np.array([[0.1, 0.0, 3.5], [2.3, 0.0, 1.2]])
print(f'Array float:',array)
print(f'Array Boolean:',array.astype(bool))
```

```
Array float: [[0.1 0.  3.5]
 [2.3 0.  1.2]]
Array Boolean: [[ True False  True]
 [ True False  True]]
```

Task2.

Solution:

```
import numpy as np

array = np.array([10, 20, 30, 40, 50])
print(f'Array:',array)
print(f'Array after inserting 55 at index 2:',np.insert(array, obj: 2, values: 55))
```

```
Array: [10 20 30 40 50]
Array after inserting 55 at index 2: [10 20 55 30 40 50]
```

Task3.

Solution:

```
import numpy as np

print(f'Sequence from 0 to 100 with step2:',np.arange(0, 102, 2))
```

```
Sequence from 0 to 100 with step2: [  0   2   4   6   8  10  12  14  16  18  20  22  24  26  28  30  32  34
  36  38  40  42  44  46  48  50  52  54  56  58  60  62  64  66  68  70
  72  74  76  78  80  82  84  86  88  90  92  94  96  98 100]
```

Task4.
Solution:

```
import numpy as np

arr1 = np.array([[1, 2], [3, 4]])
arr2 = np.array([[5, 6], [7, 8]])
print(f'Array1:',arr1)
print(f'Array2:',arr2)
print(f'Multiplication of Array1 and Array2:',arr1 @ arr2)
```

```
Array1: [[1 2]
 [3 4]]
Array2: [[5 6]
 [7 8]]
Multiplication of Array1 and Array2: [[19 22]
 [43 50]]
```

Task5.
Solution:

```
import numpy as np

array = np.array([5, 10, 15, 20, 25])
print(f'Array:', array)
print(f'Is 15 in array?',15 in array)
```

```
Array: [ 5 10 15 20 25]
Is 15 in array? True
```