

Worksheet

Part 1. Arrays and shapes

Let A be a numpy array of shape $(4,5)$. What is the shape of `a.transpose()[:, 1]`?

- (A) $(5,)$
- (B) $()$
- (C) $(5,1)$
- (D) $(4,1)$
- (E) $(4,)$

Part 2. Numpy indexing

Write a piece of code that produces a 10×10 version of the following array having a `dtype` of `float32` in the variable `a`

```
0 1 2 3
0 1 2 3
0 0 0 0
0 1 2 3
```

(The row of zeros stays in the third row.)

Do not use any for loops.

```
import numpy as np
```

Part 3. Numpy indexing

Write a piece of code that produces a 10×10 multiplication table in the variable `mult_table`:

```
0 0 0 0
0 1 2 3
0 2 4 6
0 3 6 9
```

Do not use any for loops.

```
import numpy as np
```