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<u>Unit 0. Course Overview, Homework</u>

Project 0 Setup, Numpy Exercises,

Course > 0, Project 0 (1 week)

> <u>Tutorial on Common Packages</u>

4. Introduction to Numpy

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4. Introduction to Numpy

Here, we introduce Numpy, a mathematics framework for Python.

Fundamentals of Numpy





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Randomization

1.0/1 point (graded)

Write a function called randomization that takes as input a positive integer n, and returns A, a random n x 1 Numpy array.

Available Functions: You have access to the NumPy python library as np

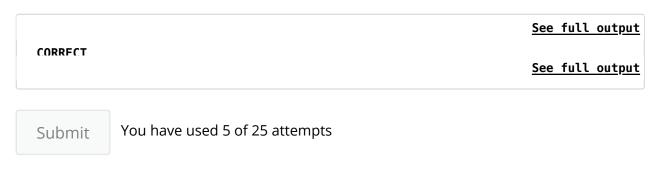
Grader note:: If the grader appears unresponsive and displays "Processing", it means (most likely) it has crashed. Please resubmit your answers, and leave a message in the forum and we will work on fixing it as soon as possible.

```
1 def randomization(n):
 2
 3
      Arg:
 4
        n - an integer
 5
      Returns:
 6
        A - a randomly-generated nx1 Numpy array.
 7
8
      #Your code here
 9
      np.random.seed(0)
10
      A = np.asarray(np.random.rand(n, 1))
11
12
      return A
13
```

Press ESC then TAB or click outside of the code editor to exit

Correct

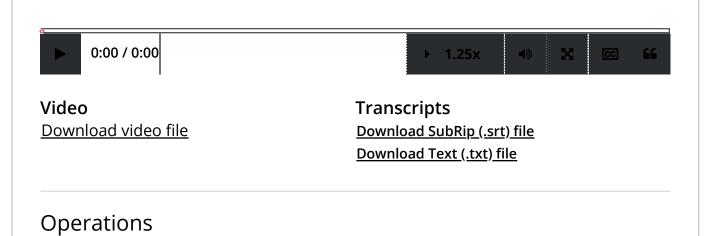
Test results



Here, we learn how to find dimensions and apply matrix multiplication using Numpy arrays.

Matrix Properties and Operations





Write a function called operations that takes as input two positive integers h

3 of 7

1.0/1 point (graded)

and w, makes two random matrices A and B, of size $h \times w$, and returns A, B, and s, the sum of A and B.

Available Functions: You have access to the NumPy python library as np

Grader note:: If the grader appears unresponsive and displays "Processing", it means (most likely) it has crashed. Please resubmit your answers, and leave a message in the forum and we will work on fixing it as soon as possible.

```
1 def operations(h, w):
2
3
      Takes two inputs, h and w, and makes two Numpy arrays A and B of si
4
      h x w, and returns A, B, and s, the sum of A and B.
5
6
      Arg:
7
        h - an integer describing the height of A and B
8
        w - an integer describing the width of A and B
      Returns (in this order):
9
10
        A - a randomly-generated h x w Numpy array.
11
        B - a randomly-generated h x w Numpy array.
        s - the sum of A and B.
12
13
14
      #Your code here
15
      A = np.random.rand(h, w)
```

Press ESC then TAB or click outside of the code editor to exit

Correct

Test results

CORRECT

See full output

See full output

Submit You have used 1 of 25 attempts

Here, we learn how to find the maximum and minimum values in a Numpy array

and obtain the norm of a vector.

Max, Min, and Norm





Video

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Transcripts

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Norm

1.0/1 point (graded)

Write a function called norm that takes as input two Numpy column arrays A and B, adds them, and returns s, the L2 norm of their sum.

Available Functions: You have access to the NumPy python library as np

Grader note:: If the grader appears unresponsive and displays "Processing", it means (most likely) it has crashed. Please resubmit your answers, and leave a message in the forum and we will work on fixing it as soon as possible.

```
def norm(A, B):
```

```
3
      Takes two Numpy column arrays, A and B, and returns the L2 norm of
 4
      sum.
 5
 6
      Arg:
 7
        A - a Numpy array
 8
         B - a Numpy array
 9
      Returns:
10
        s - the L2 norm of A+B.
11
12
      #Your code here
13
      s = np.linalg.norm(np.add(A, B))
14
15
       return s
```

Press ESC then TAB or click outside of the code editor to exit

Correct

Test results

See full output **CORRECT** See full output

You have used 2 of 25 attempts Submit

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?	Question for Q2 - ValueError: too many values to unpack (expected 3) Hi, I got an ValueError: too many values to upack(expected 3) for the code below: if h>0 and t	3
Q	Marked me incorrect even though I was right I was adding extra function to print out A+B and also the norm of A+B, but it marked me inco	2
?	<u>@TA TypeError: iteration over a 0-d array</u> <u>Hi TA and Staff What does this error mean? Getting it on all my codes. Works in PyCharm tho</u>	4
?	<u>Question3 got stuck</u> <u>Really got stuck here. Don't know what needs to be fixed. please advise. "" def norm(A, B): """"</u>	5
2	Strict grader Hey, I went and wrote "pretty" code for exercise 1, got it wrong (even though it was working o	4
?	I don't know how is this not right for Q1 & Q2 I am pretty sure I understand the concept. And while I practice in my own Python3.6, it works	6
Q	Correct answer for "Randomization" but it says incorrect WHY? there are many ways to write the code. In my conda I got the answer you asked for, and whe	4
2	[Grading Issue] Unsubmitted I tried submitting my code a few times and it still goes back to having it unanswered.	1
Q	<u>Tired of being stick on these issues</u> Mr Staff, I dont know we paid the course fee for your IT problems or to learn something or to	3
?	Error in question 2 Why am I getting an error with this answer def operations(h, w): A = np.random.random([3,5]	2
?	My correct submission for Q1 isnt getting a correct massage please help. For Q1 Randomization, why below code is incorrect? There are many ways to answer your qu	2

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