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IT25C03

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import numpy as np


# Q1
print(np.array([1, 2, 3, 4, 5]))
# Output: [1 2 3 4 5]

# Q2
print(np.arange(10, 101, 10))
 Output: [ 10  20  30  40  50  60  70  80  90 100]

# Q3
print(np.array(list(string.ascii_uppercase)))
 Output: ['A' 'B' 'C' 'D' 'E' 'F' 'G' 'H' 'I' 'J' 'K' 'L' 'M'
          'N' 'O' 'P' 'Q' 'R' 'S' 'T' 'U' 'V' 'W' 'X' 'Y' 'Z']

# Q4
print(np.zeros(10))
 Output: [0. 0. 0. 0. 0. 0. 0. 0. 0. 0.]

# Q5
print(np.ones(10))
 Output: [1. 1. 1. 1. 1. 1. 1. 1. 1. 1.]

# Q6
print(np.array(list(string.ascii_uppercase)).dtype)
 Output: <U1

# Q7
print(np.random.randint(1, 6, 10))
 Output: [2 5 1 1 4 2 4 2 5 2]

# Q8
print(np.arange(10))
 Output: [0 1 2 3 4 5 6 7 8 9]

# Q9
arr = np.array([0,1,2,3,4,5,6,7,8,9])
print(arr[arr % 2 == 1])
 Output: [1 3 5 7 9]

# Q10
print(np.where(arr % 2 == 1, -1, arr))
 Output: [ 0 -1  2 -1  4 -1  6 -1  8 -1]

# Q11
print(np.arange(2, 21, 2))
 Output: [ 2  4  6  8 10 12 14 16 18 20]

# Q12
print(np.linspace(0, 1, 5))
 Output: [0.   0.25 0.5  0.75 1.  ]

# Q13
print(np.full((3,3), 7))
 Output:
 [[7 7 7]
  [7 7 7]
  [7 7 7]]

# Q14
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print(np.eye(4))
 Output:
 [[1. 0. 0. 0.]
  [0. 1. 0. 0.]
  [0. 0. 1. 0.]
  [0. 0. 0. 1.]]

# Q15
print(np.random.rand(10))
 Output: [0.417022   0.72032449 0.00011437 0.30233257 0.14675589
          0.09233859 0.18626021 0.34556073 0.39676747 0.53881673]

# Q16
arr16 = np.arange(1, 13).reshape(3,4)
print(arr16)
 Output:
 [[ 1  2  3  4]
  [ 5  6  7  8]
  [ 9 10 11 12]]

# Q17
print(arr16.shape, arr16.ndim)
 Output: (3, 4) 2

# Q18
arr18 = np.arange(1,26).reshape(5,5)
print(arr18)
 Output:
 [[ 1  2  3  4  5]
  [ 6  7  8  9 10]
  [11 12 13 14 15]
  [16 17 18 19 20]
  [21 22 23 24 25]]

# Q19
print(arr18[0])
 Output: [1 2 3 4 5]

# Q20
print(arr18[:, -1])
 Output: [ 5 10 15 20 25]

# Q21
arr18[arr18 > 15] = 0
print(arr18)
 Output:
 [[ 1  2  3  4  5]
 [ 6  7  8  9 10]
 [11 12 13 14 15]
 [ 0  0  0  0  0]
 [ 0  0  0  0  0]]
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