PRACTICAL – 10

PROGRAM -1

AIM - WAPP TO CREATE ARRAYS USING DIFFERENT FUNCTIONS OF NUMPY

CODE

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| A) | import numpy as np  arr1 = np.array([[0,1,2], [3,4,5], [6,7,8]], dtype=int)  print(arr1, end=" [+] - normal initialization\n\n") |
| B) | import numpy as np  arr2 = np.empty((3,3),dtype=int)  print(arr2, end=" [+] - empty initialization\n\n") |
| C) | import numpy as np  arr3 = np.zeros((3,3),dtype=int)  print(arr3, end=" [+] - zero initialization\n\n") |
| D) | import numpy as np  arr4 = np.ones((3,3),dtype=int)  print(arr4, end=" [+] - ones initialization\n\n") |
| E) | import numpy as np  arr5 = np.identity(3,dtype=int)  print(arr5, end=" [+] - identity initialization\n\n") |
| F) | import numpy as np  arr6 = np.full((3,3),5,dtype=int)  print(arr6, end=" [+] - full initialization\n\n") |
| G) | import numpy as np  arr7 = np.linspace(1,20, dtype=int, num=10)  print(arr7, end=" [+] - linespace initialization\n\n") |
| H) | import numpy as np  arr8 = np.arange(5, dtype=int)  print(arr8, end=" [+] - A-range initialization\n\n") |

OUTPUT

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| A) |  |
| B) |  |
| C) |  |
| D) |  |
| E) |  |
| F) |  |
| G) |  |
| H) |  |

PROGRAM - 2

AIM: WAPP TO PERFORM FLATTEN(), RAVEL(), RESHAPE().

CODE:

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| import numpy as np  a=[  [ [1,2,3],[4,5,6],[7,8,9] ],  [ [1,2,3],[4,5,6],[7,8,9] ],  [ [1,2,3],[4,5,6],[7,8,9] ],  ]  arr1 = np.array(a, dtype=int)  print(arr1, end=" [+] - normal initialization of a 3d array\n\n")  flatArr1 = np.ravel(arr1)  print(flatArr1, end=" [+] - revel initialization\n\n") |
| import numpy as np  a=[  [ [1,2,3],[4,5,6],[7,8,9] ],  [ [1,2,3],[4,5,6],[7,8,9] ],  [ [1,2,3],[4,5,6],[7,8,9] ],  ]  arr1 = np.array(a, dtype=int)  print(arr1, end=" [+] - normal initialization of a 3d array\n\n")  flat\_arr1 = arr1.flatten('F')  print(flat\_arr1, end=" [+] - flatten initialization with 'F' order\n\n") |
| import numpy as np  arr2 = np.array([[1,2,3],[4,5,6]], dtype=int)  reshapedArr2 = np.reshape(arr2,(3,2))  print(reshapedArr2, end=" [+] - re-shapping initialization with 3,2 matrix\n\n") |

OUTPUT

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PROGRAM: 3

AIM: WAPP TO PERFORM SLICING ON ARRAYS OF DIFFERENT SIZES.

CODE: