Avinash Mhase(Array Assignment)

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Q1)# WAP to convert a 1D array into 2D array
import numpy
arr1=numpy.array([1,2,3,4,5,6,7,8,9,10])
arr2=arr1.reshape(2,5)
print(arr2)

Q2)# WAP to convert a 2D array into 1D array
import numpy
arr1=numpy.array([[1,2,3,4,5],[6,7,8,9,10]])
arr2=arr1.flatten()
print(arr2)

Q3)# WAP to take input from the user into an array and remove duplicate
# numbers.
# Input: [1 2 2 3 3 3 4 4 5]
# Output: 1 2 3 4 5
import array
size=int(input("Enter the size of an array: "))
arr1=array.array("i",[])
arr2=array.array("i",[])
# print(arr1)
for x in range(size):
    num=int(input("Enter the elements of an array: "))
    arr1.append(num)
for x in range(len(arr1)):
    if arr1[x] not in arr2:
        arr2.append(arr1[x])
print(arr2)

Q4)# Write a  program to take a 2-D array of order 3 X 3 and check
# whether that matrix is an identity matrix or not.
# Input:
# 1 0 0
# 0 1 0
# 0 0 1
import numpy
arr1=numpy.zeros((3,3),int)
for x in range(3):
    for y in range(3):
        num=int(input("Enter the elements of an array: "))
        arr1[x][y]=num
if x==y and (arr1[x][y]==1):
    print("identity matrix")
else:
    print("not identity matrix")


Q5)# Write a program to take a 2-D array of order 3 X 3 and swap 1st
# row with 3rd row and print it as before and after operation.
import numpy
arr1=numpy.zeros((3,3),int)
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for x in range(3):
    for y in range(3):
        num=int(input("Enter the array elements: "))
        arr1[x][y]=num
print(arr1)
print()
arr1[[0, 2]] = arr1[[2, 0]]
print(arr1)
```

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Q6)# WAP to find the third largest element from an array
# Ip: [ [1,2,4]
# [5,3,9]
# [8,6,11]]
# Op: third largest element is 8
import numpy
arr1=numpy.zeros((3,3),int)
for x in range(3):
    for y in range(3):
        num=int(input("Enter the elements of an array: "))
        arr1[x][y]=num
print(arr1)
arr2=arr1.flatten()
arr3=numpy.sort(arr2)
print(arr3[-3],"is the third last elements")
```

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Q7)# Write a java program to take a 2-D array of order 3 X 3 and Sort
# that array in ascending order and print it as before and after operation.

import numpy
arr1=numpy.zeros((3,3,),int)
for x in range(3):
    for y in range(3):
        num=int(input("Enter the array elements: "))
        arr1[x][y]=num
print("Original array")
print(arr1)
arr2=arr1.flatten()
arr3=numpy.sort(arr2)
print(arr3.reshape(3,3))
```

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Q8)# Write a program to create a 2d array of integer elements.
# Take the number of rows and columns values from the user.
# And print a 2d array of numbers whose first digit is N,
# take the N value from the user.
# Input:
# Enter number of Rows = 2
# Enter number of Column = 2
# Enter value of N = 3
# Output:
# 3 30
# 31 32
import numpy
i=int(input("Enter number of Rows = "))
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j=int(input("Enter number of columns = "))
n=int(input("Enter value of N = "))
arr1=numpy.zeros((i,j),int)
k=(n*9)+n
for x in range(i):
    for y in range(j):
        if x==0 and y==0:
            arr1[0][0]=n
        else:
            arr1[x][y]=k
            k=k+1
print(arr1)
```

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Q9)# WAP to move the all the 0's at end of the array
import numpy
arr1=numpy.array([1,2,3,0,0,5])
count=0
for x in range(len(arr1)):
    if arr1[x]!=0:
        arr1[count]=arr1[x]
        count+=1
while count<len(arr1):
    arr1[count]=0
    count+=1
print(arr1)
```

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Q10)# WAP to convert all the zeros to ones and news to zeros in given array
# ip: [ [1,0,1]
# [0,1,1]
# [1,0,0] ]
# Op: [ [0,1,0]
# [1,0,0]
# [0,1,1]]
import numpy
arr1=numpy.zeros((3,3),int)
for x in range(3):
    for y in range(3):
        num=int(input("Enter the elements of an array: "))
        arr1[x][y]=num
print(arr1)
for x in range(3):
    for y in range(3):
        if arr1[x][y]==1:
            arr1[x][y]=0
        else:
            arr1[x][y]=1
print(arr1)
```