

**Name: Shivam Pokharkar**

**Roll no: 546**

**Sub: EDS Assignment 3**

**PRN: 202201040078**

**Div: E-3**

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**Code:**

```
import csv
import numpy as np
ar=np.loadtxt("D:\python progs\LAB\Assig
3\marks1.csv",delimiter=",",dtype=float,skiprows=1) #"dtype=float" can also be
used
print(ar)

Roll=ar[:,0]
EDS=ar[:,1]
SON=ar[:,2]
DT=ar[:,3]
ET=ar[:,4]

print("\n\nRoll",Roll)
print("EDS=", EDS)
print("SON=",SON)
print("DT=", DT)
print("ET=",ET)
print(type(ET))

print("\n\n.....ALL ARITHMATIC
OPERATIONS.....\n ")
print("\nOP1) Roll with highets marks in EDS is: ",Roll[np.argmax(EDS)])
print("\nOP2) With highest marks in EDS: ",np.max(EDS))
print("\nOP3) Minimum marks in EDS: ",np.min(EDS))
print("\nOP4) Mean marks in EDS: ", np.mean(EDS))
print("\nOP5) Median of EDS:",np.median(EDS))
print("\nOP6) Dividing ET array with DT:\n",np.divide(ET,DT))
print("\nOP7) Multiplying ET array with DT:\n",np.multiply(ET,DT))
print("\nOP8) Adding ET array with DT:\n",np.add(ET,DT))
print("\nOP9) Subtracting ET marks with DT:\n",np.subtract(ET,DT))
print("\nOP10) Dot product of ET and DT:\n",np.dot(ET,DT))
print("\nOP11) Inner product of ET and DT : \n",np.inner(ET,DT))
```

```

print("\n.....Copying and viewing
arrays.....\n")

a1=EDS.view()
print("\nOP12) Viewing ET array into another array a1:\n",a1)

a2=EDS.copy()

print("\nOP13) Copying EDS array into array a2: \n",a2)

print("\n\n.....ALL MATRIX
OPERATIONS.....\n ")

print("\nOP14) Sorting array a1:\n",np.sort(a1))

ar3=np.array(EDS,dtype=np.uint8)
print("\nOP15) using np.uint8 on new array ar3\n",ar3)

print("\nOP16) shape of array ar:\n",ar.shape)

print("\n\n.....Custum sequence
generqation.....\n\n")

ar4= np.arange(0, 20, 3)
print ("\nOP17) A sequential array with steps of 3:\n", ar4)

ar5= np.linspace(0, 3, 5)
print ("\nOP18) A sequential array with 5 values between 0 and 5:\n", ar5)

print("\n\n.....Stacking.....\n
")

print("\nOP19) H stack array ET:\n", np.hstack(ET))

print("\nOP20) V stack array ET:\n",np.vstack(ET))

print("\n\n.....Data Stacking, Searching, Sorting, Counting,
Broadcasting.....\n")

print("\nOP21) at what index a1>45:\n",np.where(a1>45))

unique_elements, counts = np.unique(EDS, return_counts=True)

```

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print("\nOP22) Unique elements in EDS: \n",unique_elements)

print("\nOP23) Counts of all in EDS :\n",counts)

print("\nOP24) Broadcasting 2 in EDS:\n", EDS+2)

print("\nOP25) searching Location of Elements value more than 40 in array
a1:\n",np.nonzero(a1>40))

```

## Screenshot:

```

PS C:\Users\shiva> & C:/Users/shiva/AppData/Local/Programs/Python/Python311/python.exe "d:\python progs\LAB\Assig 3\assig 3v2.py"
[[801. 43.05 27.79 28.7 27.79]
 [802. 43.47 28.52 28.98 27.89]
 [803. 42.24 28.16 28.16 25.63]
 [804. 39.24 26.16 26.16 26.16]
 [805. 40.9 26.03 27.27 25.65]
 [806. 39.47 26.31 26.31 25.21]
 [807. 41.68 25.63 27.79 25.46]
 [808. 42.19 27.61 28.13 26.21]
 [809. 44.75 28.35 29.83 28.21]
 [810. 46.95 28.88 31.3 28.53]]

Roll [801. 802. 803. 804. 805. 806. 807. 808. 809. 810.]
EDS= [43.05 43.47 42.24 39.24 40.9 39.47 41.68 42.19 44.75 46.95]
SQM= [27.79 28.52 28.16 26.16 26.03 26.31 25.63 27.61 28.35 28.88]
DT= [28.27 28.98 28.16 26.16 27.27 26.31 27.79 28.13 29.83 31.3 ]
ET= [27.79 27.89 25.63 26.16 25.65 25.21 25.46 26.21 28.21 28.53]
<class 'numpy.ndarray'>

.....ALL ARITHMATIC OPERATIONS.....

OP1) Roll with highets marks in EDS is: 810.0
OP2) With highest marks in EDS: 46.95
OP3) Minimum marks in EDS: 39.24
OP4) Mean marks in EDS: 42.394
OP5) Median of EDS: 42.215
OP6) Dividing ET array with DT:
[0.96829268 0.96238785 0.91015625 1. 0.94059406 0.9581908
 0.91615689 0.93174547 0.94569226 0.9115016 ]
OP7) Multiplying ET array with DT:
[797.573 808.2522 721.7408 684.3456 699.4755 663.2751 707.5334 737.2873
 841.5043 892.989 ]
OP8) Adding ET array with DT:
[56.49 56.87 53.79 52.32 52.92 51.52 53.25 54.34 58.04 59.83]

```

