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Assignment-3

In [1]:
```
import numpy as np
```

In [4]:
```
#q1

arr=np.arange(1,10)
arr1=arr[arr%2==0]
arr2=arr[arr%2==1]
arr[arr%2==0]=0
print(arr)
print(arr1)
print(arr2)
```

```
[1 0 3 0 5 0 7 0 9]
[2 4 6 8]
[1 3 5 7 9]
```

In [5]:
```
#q2

arr=np.arange(1,10 ,dtype=object)
arr[arr%2==1]='odd'
print(arr)
```

```
['odd' 2 'odd' 4 'odd' 6 'odd' 8 'odd']
```

In [9]:
```
#q3
```

```
arr=np.array(['How','Are','You'])
arr1=np.repeat(arr,3)
print(arr1)
arr2=np.tile(arr,3)
print(arr2)
print(np.concatenate((arr1,arr2)))
```

```
['How' 'How' 'How' 'Are' 'Are' 'Are' 'You' 'You' 'You']
['How' 'Are' 'You' 'How' 'Are' 'You' 'How' 'Are' 'You']
['How' 'How' 'How' 'Are' 'Are' 'Are' 'You' 'You' 'You' 'How' 'Are' 'You'
 'How' 'Are' 'You' 'How' 'Are' 'You']
```

In [10]:

```
#q4

arr1=np.array(['a','s','u','o','z','h'])
arr2=np.array(['a','s','t','p','h'])
print(np.intersect1d(arr1,arr2))
```

```
['a' 'h' 's']
```

In [11]:

```
#q5
```

In [13]:

```
# q6

ran=np.random.randint(low=6,high=12,size=(5,3))+np.random.random((5,3))
print(ran)
```

```
[[ 8.48580606 11.03315375 10.62570744]
 [10.81993376  9.5088083   9.18253504]
 [ 8.84915     8.63359037  6.41525817]
 [ 8.69205248  8.52907611  8.74804117]
 [ 9.29705045 10.88431619 10.55449433]]
```

In [14]:

```
# q7

round_off=np.around(ran,decimals=2)
print(round_off)
```

```
[[ 8.49 11.03 10.63]
```

```
[10.82  9.51  9.18]
[ 8.85  8.63  6.42]
[ 8.69  8.53  8.75]
[ 9.3  10.88 10.55]]
```

In [15]:

```python
# q8

url = 'https://archive.ics.uci.edu/ml/machine-learning-databases/iris/iris.data'
iris1_D=np.genfromtxt(url,delimiter=',',dtype=None)
# print(iris1_D[:5][:])
# iris_2d = np.array([row.tolist()[:4] for row in iris1_D])
iris_2d = np.genfromtxt(url, delimiter=',', dtype='float', usecols=[0,1,2,3])
print(iris_2d)
```

```
[[5.1 3.5 1.4 0.2]
 [4.9 3.  1.4 0.2]
 [4.7 3.2 1.3 0.2]
 [4.6 3.1 1.5 0.2]
 [5.  3.6 1.4 0.2]
 [5.4 3.9 1.7 0.4]
 [4.6 3.4 1.4 0.3]
 [5.  3.4 1.5 0.2]
 [4.4 2.9 1.4 0.2]
 [4.9 3.1 1.5 0.1]
 [5.4 3.7 1.5 0.2]
 [4.8 3.4 1.6 0.2]
 [4.8 3.  1.4 0.1]
 [4.3 3.  1.1 0.1]
 [5.8 4.  1.2 0.2]
 [5.7 4.4 1.5 0.4]
 [5.4 3.9 1.3 0.4]
 [5.1 3.5 1.4 0.3]
 [5.7 3.8 1.7 0.3]
 [5.1 3.8 1.5 0.3]
 [5.4 3.4 1.7 0.2]
 [5.1 3.7 1.5 0.4]
 [4.6 3.6 1.  0.2]
 [5.1 3.3 1.7 0.5]
 [4.8 3.4 1.9 0.2]
 [5.  3.  1.6 0.2]
 [5.  3.4 1.6 0.4]
 [5.2 3.5 1.5 0.2]
 [5.2 3.4 1.4 0.2]
```

```
[4.7 3.2 1.6 0.2]
[4.8 3.1 1.6 0.2]
[5.4 3.4 1.5 0.4]
[5.2 4.1 1.5 0.1]
[5.5 4.2 1.4 0.2]
[4.9 3.1 1.5 0.1]
[5.  3.2 1.2 0.2]
[5.5 3.5 1.3 0.2]
[4.9 3.1 1.5 0.1]
[4.4 3.  1.3 0.2]
[5.1 3.4 1.5 0.2]
[5.  3.5 1.3 0.3]
[4.5 2.3 1.3 0.3]
[4.4 3.2 1.3 0.2]
[5.  3.5 1.6 0.6]
[5.1 3.8 1.9 0.4]
[4.8 3.  1.4 0.3]
[5.1 3.8 1.6 0.2]
[4.6 3.2 1.4 0.2]
[5.3 3.7 1.5 0.2]
[5.  3.3 1.4 0.2]
[7.  3.2 4.7 1.4]
[6.4 3.2 4.5 1.5]
[6.9 3.1 4.9 1.5]
[5.5 2.3 4.  1.3]
[6.5 2.8 4.6 1.5]
[5.7 2.8 4.5 1.3]
[6.3 3.3 4.7 1.6]
[4.9 2.4 3.3 1. ]
[6.6 2.9 4.6 1.3]
[5.2 2.7 3.9 1.4]
[5.  2.  3.5 1. ]
[5.9 3.  4.2 1.5]
[6.  2.2 4.  1. ]
[6.1 2.9 4.7 1.4]
[5.6 2.9 3.6 1.3]
[6.7 3.1 4.4 1.4]
[5.6 3.  4.5 1.5]
[5.8 2.7 4.1 1. ]
[6.2 2.2 4.5 1.5]
[5.6 2.5 3.9 1.1]
[5.9 3.2 4.8 1.8]
[6.1 2.8 4.  1.3]
[6.3 2.5 4.9 1.5]
[6.1 2.8 4.7 1.2]
```

```
[6.4 2.9 4.3 1.3]
[6.6 3.  4.4 1.4]
[6.8 2.8 4.8 1.4]
[6.7 3.  5.  1.7]
[6.  2.9 4.5 1.5]
[5.7 2.6 3.5 1. ]
[5.5 2.4 3.8 1.1]
[5.5 2.4 3.7 1. ]
[5.8 2.7 3.9 1.2]
[6.  2.7 5.1 1.6]
[5.4 3.  4.5 1.5]
[6.  3.4 4.5 1.6]
[6.7 3.1 4.7 1.5]
[6.3 2.3 4.4 1.3]
[5.6 3.  4.1 1.3]
[5.5 2.5 4.  1.3]
[5.5 2.6 4.4 1.2]
[6.1 3.  4.6 1.4]
[5.8 2.6 4.  1.2]
[5.  2.3 3.3 1. ]
[5.6 2.7 4.2 1.3]
[5.7 3.  4.2 1.2]
[5.7 2.9 4.2 1.3]
[6.2 2.9 4.3 1.3]
[5.1 2.5 3.  1.1]
[5.7 2.8 4.1 1.3]
[6.3 3.3 6.  2.5]
[5.8 2.7 5.1 1.9]
[7.1 3.  5.9 2.1]
[6.3 2.9 5.6 1.8]
[6.5 3.  5.8 2.2]
[7.6 3.  6.6 2.1]
[4.9 2.5 4.5 1.7]
[7.3 2.9 6.3 1.8]
[6.7 2.5 5.8 1.8]
[7.2 3.6 6.1 2.5]
[6.5 3.2 5.1 2. ]
[6.4 2.7 5.3 1.9]
[6.8 3.  5.5 2.1]
[5.7 2.5 5.  2. ]
[5.8 2.8 5.1 2.4]
[6.4 3.2 5.3 2.3]
[6.5 3.  5.5 1.8]
[7.7 3.8 6.7 2.2]
[7.7 2.6 6.9 2.3]
```

```
[6.  2.2 5.  1.5]
[6.9 3.2 5.7 2.3]
[5.6 2.8 4.9 2. ]
[7.7 2.8 6.7 2. ]
[6.3 2.7 4.9 1.8]
[6.7 3.3 5.7 2.1]
[7.2 3.2 6.  1.8]
[6.2 2.8 4.8 1.8]
[6.1 3.  4.9 1.8]
[6.4 2.8 5.6 2.1]
[7.2 3.  5.8 1.6]
[7.4 2.8 6.1 1.9]
[7.9 3.8 6.4 2. ]
[6.4 2.8 5.6 2.2]
[6.3 2.8 5.1 1.5]
[6.1 2.6 5.6 1.4]
[7.7 3.  6.1 2.3]
[6.3 3.4 5.6 2.4]
[6.4 3.1 5.5 1.8]
[6.  3.  4.8 1.8]
[6.9 3.1 5.4 2.1]
[6.7 3.1 5.6 2.4]
[6.9 3.1 5.1 2.3]
[5.8 2.7 5.1 1.9]
[6.8 3.2 5.9 2.3]
[6.7 3.3 5.7 2.5]
[6.7 3.  5.2 2.3]
[6.3 2.5 5.  1.9]
[6.5 3.  5.2 2. ]
[6.2 3.4 5.4 2.3]
[5.9 3.  5.1 1.8]]
```

```
<ipython-input-15-740b86585b74>:4: VisibleDeprecationWarning: Reading unicode strings without specifying the encoding
argument is deprecated. Set the encoding, use None for the system default.
  iris1_D=np.genfromtxt(url,delimiter=',',dtype=None)
```

In [16]:

```
# q9

sepallength = np.genfromtxt(url, delimiter=',', dtype='float', usecols=[0])
mu, med, sd = np.mean(sepallength), np.median(sepallength), np.std(sepallength)
print(mu, med, sd)
```

```
5.843333333333334 5.8 0.8253012917851409
```

In [ ]: