numpy-assignment-1

November 8, 2024

1 *Numpy Assignment 1*

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

[2]:
```
tip_data=np.genfromtxt("/media/tipsf.csv",delimiter=",",skip_header=1)
```

[3]:
```
tip_data
```

[3]:
```
array([[  0.  ,  16.99,   1.01, …,   1.  ,   0.  ,   2.  ],
       [  1.  ,  10.34,   1.66, …,   1.  ,   0.  ,   3.  ],
       [  2.  ,  21.01,   3.5 , …,   1.  ,   0.  ,   3.  ],
       …,
       [241.  ,  22.67,   2.  , …,   0.  ,   0.  ,   2.  ],
       [242.  ,  17.82,   1.75, …,   0.  ,   0.  ,   2.  ],
       [243.  ,  18.78,   3.  , …,   2.  ,   0.  ,   2.  ]])
```

[4]:
```
tip_data.shape
```

[4]:
```
(244, 8)
```

[17]:
```
#1.What is the total bill value?

total_bill_sum=np.sum(tip_data[:,1])
print("the total bill value is :",total_bill_sum)
```

```
the total bill value is : 4827.77
```

[18]:
```
#2.What is the total tip value?

total_tip_sum=np.sum(tip_data[:,2])
print("the total tip value is :",total_tip_sum)
```

```
the total tip value is : 731.5799999999999
```

[7]:
```
#3.Count how many Sunday, Saturday, Thursday,friday,are there.(0 is sunday,1 is␣
↪saturday,2 is friday,3 is thursday)
```

```
no_of_thursday=np.count_nonzero(tip_data[:,5]==3)
no_of_friday=np.count_nonzero(tip_data[:,5]==2)
no_of_saturday=np.count_nonzero(tip_data[:,5]==1)
no_of_sunday=np.count_nonzero(tip_data[:,5]==0)
print("count of sunday :",no_of_sunday)
print("count of saturday :",no_of_saturday)
print("count of friday :",no_of_friday)
print("count of thursday :",no_of_thursday)
```

```
count of sunday : 87
count of saturday : 76
count of friday : 62
count of thursday : 19
```

[20]:
```
#4.How many smokers are there?

no_of_smokers=np.count_nonzero(tip_data[:,4]==1)
print("The number of smokers are :",no_of_smokers)
```

```
The number of smokers are : 93
```

[44]:
```
#5.What is the average tip given by females and males?
#here we are considering male ="1" and female ="0"
avg_tip_given_by_male=np.mean(tip_data[:,2][tip_data[:,3]==1])
avg_tip_given_by_female=np.mean(tip_data[:,2][tip_data[:,3]==0])
print("the average tip given by male is:",avg_tip_given_by_male)
print("the average tip given by female is :",avg_tip_given_by_female)
```

```
the average tip given by male is: 3.0896178343949043
the average tip given by female is : 2.8334482758620685
```

[43]:
```
#6.How many males and females are going for dinner and lunch?
#here we are considering lunch as"0",and dinner as "1"
no_males_going_for_lunch=   np.count_nonzero(tip_data[:,3]==1) & np.
 ↪count_nonzero(tip_data[:,6]==0)
no_males_going_for_dinner=  np.count_nonzero(tip_data[:,3]==1) & np.
 ↪count_nonzero(tip_data[:,6]==1)
no_females_going_for_lunch= np.count_nonzero(tip_data[:,3]==0) & np.
 ↪count_nonzero(tip_data[:,6]==0)
no_females_going_for_dinner=np.count_nonzero(tip_data[:,3]==1) & np.
 ↪count_nonzero(tip_data[:,6]==1)
print("the number of males going for lunch:",no_males_going_for_lunch)
print("the number of males going for dinner:",no_males_going_for_dinner )
print("the number of females going for lunch:",no_females_going_for_lunch)
print("the number of females going for dinner:",no_females_going_for_dinner)
```

```
the number of males going for lunch: 144
the number of males going for dinner: 4
```

```
the number of females going for lunch: 16
the number of females going for dinner: 4
```

[ ]:

[24]:
```
#7.What is the min and max tip given?
minimum_tip=np.min(tip_data[:,2])
maximum_tip=np.max(tip_data[:,2])
print("the minimum tip given is :",minimum_tip)
print("the maximum tip given is :",maximum_tip)
```

```
the minimum tip given is : 1.0
the maximum tip given is : 10.0
```

[27]:
```
#8.How much amount has been spent by female and male.
total_amount_spent_by_male=np.sum(tip_data[:,1][tip_data[:,3]==1])
total_amount_spent_by_female=np.sum(tip_data[:,1][tip_data[:,3]==0])
print("the total amount spent by male :",total_amount_spent_by_male)
print('the total aamount spent by female:',total_amount_spent_by_female)
```

```
the total amount spent by male : 3256.8199999999997
the total aamount spent by female: 1570.9499999999996
```

[29]:
```
#9.Find out the AVG size.
avg_size=np.mean(tip_data[:,7])
print("the average size is:",avg_size)
```

```
the average size is: 2.569672131147541
```

[41]:
```
#10.Find out how many male,female smokers are there.
no_of_male_smokers=np.count_nonzero((tip_data[:,3]==1) & (tip_data[:,4]==1))
print("the number of male smokers are :",no_of_male_smokers)
no_of_female_smokers=np.count_nonzero((tip_data[:,3]==0) & (tip_data[:,4]==1))
print("the number of female smokers are :",no_of_female_smokers)
```

```
the number of male smokers are : 60
the number of female smokers are : 33
```

[ ]: