Q2) Part A

Python program:

```
#Q2.A) Make all values <15 to 15, >45 to 45
import numpy as np

#getting cutoff as 15 and 45 as per question
x=101
y=101
while (x and y >100):
    x=int(input("Enter your cutoff minumum: "))
    y=int(input("Enter your cutoff maximum: "))

#making the array and clipping it
np.random.seed(100)
a=np.random.uniform(1,50,20)
a=np.clip(a,x,y)

#printing array elements
a=str(a).replace('[', '').replace(']', '')
a=a.split()
for i in a:
    print(i)
```

Screenshot:

```python
#Q2.A) Make all values <15 to 15, >45 to 45
import numpy as np

#getting cutoff as 15 and 45 as per question
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a=np.clip(a,x,y)

#printing array elements
a=str(a).replace('[', '').replace(']', '')
a=a.split()
for i in a:
    print(i)
```

Output screenshot:

```
Enter your cutoff minumum: 15
Enter your cutoff maximum: 45
27.62684215
15.
21.80136195
42.39403048
15.
15.
33.86670515
41.466785
15.
29.17957314
44.67477576
15.
15.
15.
15.
45.
40.77247431
15.
40.99501269
15.
```

Q2) Part B

Python program:

#Q2.B) Split a text column into 2 columns using pandas

import pandas as pd

#input

df=pd.DataFrame({'STD':[33,44,40,80],

'City':['Mumbai Maharashtra','Chennai TamilNadu','Vishakapatnam Telangana','Bangalore Karnataka']})

print("Given dataframe is: \n",df)

#splitting

df[['City','State']]=df.City.apply(lambda x: pd.Series(str(x).split(" ")))

print("\nDataframe after splitting is: \n",df)

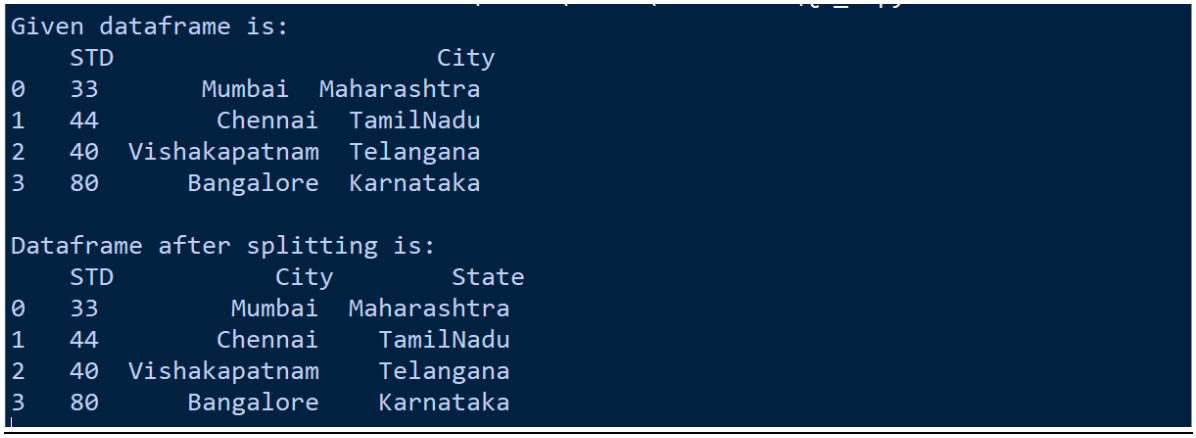
Screenshot:

```
#Q2.B) Split a text column into 2 columns using pandas
import pandas as pd

#input
df=pd.DataFrame({'STD':[33,44,40,80],
                 'City':['Mumbai  Maharashtra',
                         'Chennai  TamilNadu',
                         'Vishakapatnam  Telangana',
                         'Bangalore  Karnataka']})
print("Given dataframe is: \n",df)

#splitting
df[['City','State']]=df.City.apply(lambda x: pd.Series(str(x).split("  ")))
print("\nDataframe after splitting is: \n",df)
```

Output screenshot:



```
Given dataframe is:
    STD                     City
0   33       Mumbai  Maharashtra
1   44        Chennai  TamilNadu
2   40  Vishakapatnam  Telangana
3   80      Bangalore  Karnataka

Dataframe after splitting is:
    STD           City        State
0   33         Mumbai  Maharashtra
1   44        Chennai    TamilNadu
2   40  Vishakapatnam    Telangana
3   80      Bangalore    Karnataka
```

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