

ARUNIMA SINGH THAKUR

180905218

SECTION C

ROLL NO. 31

DS LAB END SEM

8TH JUNE 2021

QUESTION 1:

server.py

```
import socket
HOST = '127.0.0.1'
PORT = 31621
s = socket.socket()
s.bind((HOST, PORT))
s.listen()
print("Waiting for incoming connections.... \n")
conn, addr = s.accept()
print("Recieved Connection from ", addr[0], "(", addr[1], ")\n")
s_num = conn.recv(1024)
s_num = s_num.decode()
print("Number: ", s_num, " recieved from client \n")
rev_num = s_num[::-1]
conn.send(rev_num.encode())
```

client.py

```
import socket

HOST = '127.0.0.1'

PORT = 31621

s = socket.socket()

num = input(str("Enter your Number to send to Server: \n"))

print("\nTrying to connect to ", HOST, "(", PORT, ")\n")

s.connect((HOST, PORT))

print("Connected...\n")

s.send(num.encode())

print("\nSent Server", num, "\n")

rev_num = s.recv(1024)

rev_num = rev_num.decode()

print("Server sent reversed number: ", rev_num, "\n")
```

OUTPUT:

```
PS C:\Users\99ast\AppData\Local\Programs\Python\Python38\Scripts> python server.py
Waiting for incoming connections....

Recieved Connection from 127.0.0.1 ( 58367 )

Number: 296410462736584 recieved from client

PS C:\Users\99ast\AppData\Local\Programs\Python\Python38\Scripts> █
```

```
PS C:\Users\99ast\AppData\Local\Programs\Python\Python38\Scripts> python client.py
Enter your Number to send to Server:
296410462736584

Trying to connect to 127.0.0.1 ( 31621 )

Connected...

Sent Server 296410462736584

Server sent reversed number: 485637264014692

PS C:\Users\99ast\AppData\Local\Programs\Python\Python38\Scripts>
```

QUESTION 2:

itemmap_expensive.py

```
import fileinput
```

```
for line in fileinput.input():
```

```
    data = line.strip().split(",")
```

```
    if len(data) == 6:
```

```
        country, continent, year, lifeExpectancy, population, gdpPerCapita = data
```

```
        if country != "country":
```

```
            print ("{0}\t{1}".format(country, int(population)))
```

itemred_expensive.py

```
import fileinput
```

```
max_value = 0
```

```
old_key = None
```

```
for line in fileinput.input():
```

```
    data = line.strip().split("\t")
```

```
    if len(data) != 2:
```

```
        # Something has gone wrong. Skip this line.
```

```
        continue
```

```
    current_key, current_value = data
```

```
    # Refresh for new keys (i.e. locations in the example context)
```

```
    if old_key and old_key != current_key:
```

```
        print (old_key, "\t", max_value)
```

```
        old_key = current_key
```

```
        max_value = 0
```

```
    old_key = current_key
```

```
    if float(current_value) > float(max_value):
```

```
        max_value = float(current_value)
```

```
if old_key != None:
```

```
    print (old_key, "\t", max_value)
```

OUTPUT:

```
PS C:\Users\99ast\AppData\Local\Programs\Python\Python38\Scripts> cat countries.csv | python itemmap_expensive.py | python itemred_expensive.py
Afghanistan 31889923.0
Albania 3600523.0
Algeria 33333216.0
Angola 12420476.0
Argentina 40301927.0
Australia 20434176.0
Austria 8199783.0
Bahrain 708573.0
Bangladesh 150448339.0
Belgium 10392226.0
Benin 8078314.0
Bolivia 9119152.0
Bosnia and Herzegovina 4552198.0
Botswana 1639131.0
Brazil 190010647.0
Bulgaria 8971958.0
Burkina Faso 14326203.0
Burundi 8390505.0
Cambodia 14131858.0
Cameroon 17696293.0
Canada 33390141.0
Central African Republic 4369038.0
Chad 10238807.0
Chile 16284741.0
China 1318683096.0
Colombia 44227550.0
Comoros 710960.0
Costa Rica 4133884.0
Cote d'Ivoire 18013409.0
Croatia 4494013.0
Cuba 11416987.0
Czech Republic 10315702.0
Denmark 5468120.0
Djibouti 496374.0
Dominican Republic 9319622.0
Ecuador 12755680.0
Egypt 80264543.0
El Salvador 6939688.0
Equatorial Guinea 551201.0
Eritrea 4906585.0
Ethiopia 76511887.0
Finland 5238460.0
France 61083916.0
```

Eritrea	4906585.0
Ethiopia	76511887.0
Finland	5238460.0
France	61083916.0
Gabon	1454867.0
Gambia	1688359.0
Germany	82400996.0
Ghana	22873338.0
Greece	10706290.0
Guatemala	12572928.0
Guinea	9947814.0
Guinea-Bissau	1472041.0
Haiti	8502814.0
Honduras	7483763.0
Hungary	10705535.0
Iceland	301931.0
India	1110396331.0
Indonesia	223547000.0
Iran	69453570.0
Iraq	27499638.0
Ireland	4109086.0
Israel	6426679.0
Italy	58147733.0
Jamaica	2780132.0
Japan	127467972.0
Jordan	6053193.0
Kenya	35610177.0
Kuwait	2505559.0
Lebanon	3921278.0
Lesotho	2046772.0
Liberia	3193942.0
Libya	6036914.0
Madagascar	19167654.0
Malawi	13327079.0
Malaysia	24821286.0
Mali	12031795.0
Mauritania	3270065.0
Mauritius	1250882.0
Mexico	108700891.0
Mongolia	2874127.0
Montenegro	720230.0
Morocco	33757175.0
Mozambique	19951656.0
Myanmar	47761980.0

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Mozambique	19951656.0
Myanmar	47761980.0
Namibia	2055080.0
Nepal	28901790.0
Netherlands	16570613.0
New Zealand	4115771.0
Nicaragua	5675356.0
Niger	12894865.0
Nigeria	135031164.0
Norway	4627926.0
Oman	3204897.0
Pakistan	169270617.0
Panama	3242173.0
Paraguay	6667147.0
Peru	28674757.0
Philippines	91077287.0
Poland	38654957.0
Portugal	10642836.0
Puerto Rico	3942491.0
Reunion	798094.0
Romania	22797027.0
Rwanda	8860588.0
Sao Tome and Principe	199579.0
Saudi Arabia	27601038.0
Senegal	12267493.0
Serbia	10336594.0
Sierra Leone	6144562.0
Singapore	4553009.0
Slovak Republic	5447502.0
Slovenia	2011612.0
Somalia	9118773.0
South Africa	44433622.0
Spain	40448191.0
Sri Lanka	20378239.0
Sudan	42292929.0
Swaziland	1133066.0
Sweden	9031088.0
Switzerland	7554661.0
Syria	19314747.0
Taiwan	23174294.0
Tanzania	38139640.0
Thailand	65068149.0
Togo	5701579.0

```
Saudi Arabia      27601038.0
Senegal           12267493.0
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Syria    19314747.0
Taiwan   23174294.0
Tanzania         38139640.0
Thailand         65068149.0
Togo    5701579.0
Trinidad and Tobago 1191336.0
Tunisia    10276158.0
Turkey    71158647.0
Uganda    29170398.0
United Kingdom    60776238.0
United States     301139947.0
Uruguay          3447496.0
Venezuela        26084662.0
Vietnam          85262356.0
West Bank and Gaza 4018332.0
Zambia    11746035.0
Zimbabwe         12311143.0
PS C:\Users\99ast\AppData\Local\Programs\Python\Python38\Scripts> ■
```