

Report on Problem 2:

Files included in assignment:

Source Code, Database csv file, Report.

Datastructures used:

Singly linked list, Arrays(to store data in nodes).

Program outputs:

1. Add operation:

```
C:\Users\Abdul\Desktop\programs\assignment 2>run
```

```
Enter 1 to Add a record.
Enter 2 to Delete a record.
Enter 3 to Search a Record.
Enter 4 for Displaying people belonging to particular city/State/Country.
Enter 5 to Update a record.
```

```
1
```

```
You pressed 1.
```

```
Please do not exit until current persons data is not entered completly.
```

```
Note use Camel case only. i.e. first letter capital and rest small. eg. = 'Hi' 'These' 'Are' 'Camel' 'Case'
```

```
Enter the Adhar number/Social security number of the person: 863575259733
```

```
Enter the name of person. : Vishwanathan Anand
```

```
Enter the fathers name. : Ravi Prakash Anand
```

```
Enter the mothers name. : Geeta Rani
```

```
Enter the Rank/position/occupation. : Grand Master
```

```
Enter the department of work palce/Company. : Government of India
```

```
Enter the date of joining. : 25/08/2008
```

```
Enter the house no. of the person : #782
```

```
Enter the streetname of the person. : Phase 5
```

```
Enter the city of the person. : Delhi
```

```
Enter the state of the person. : Delhi
```

```
Enter the country of residence. : India
```

```
Enter the pin code of the area. : 672352
```

```
Thank you the data base has been updated.
```

```
Open the database at C:\Users\Abdul\Desktop\programs\assignment 2\db.csv
```

*Before Add:

[illegible]

*After Add

[illegible]

2.Delete operation:

Initial database: // Deleting Mr. Jack Dawson

[illegible]

Program:

```
Microsoft Windows [Version 10.0.19042.1348]
(c) Microsoft Corporation. All rights reserved.

C:\Users\Abdul\Desktop\programs\assignment 2>run

Enter 1 to Add a record.
Enter 2 to Delete a record.
Enter 3 to Search a Record.
Enter 4 for Displaying people belonging to particular city/State/Country.
Enter 5 to Update a record.

2

You pressed 2.

Enter the Adhar number/Social security number of person to be deleted.
4684369429

Record deleted successfully. Check on database location: C:\Users\Abdul\Desktop\programs\assignment 2\db.csv

C:\Users\Abdul\Desktop\programs\assignment 2>
```

Final Database:

[illegible]

3.Search Operation:

```
C:\Users\Abdul\Desktop\programs\assignment 2>run
```

```
Enter 1 to  Add a record.  
Enter 2 to  Delete a record.  
Enter 3 to  Search a Record.  
Enter 4 for Displaying people belonging to particular city/State/Country.  
Enter 5 to  Update a record.
```

```
3
```

```
You pressed 3.
```

```
Enter the adhar no./Social security no.  of person: 6064081606
```

```
Adhar no./Social Security no. : 6064081606  
Name: Xavi Harnandez  
Fathers name: Raul Garcia  
Mothers name: Emma W.  
Rank/Position/Occupation: Center Mid Fielder  
Department/Company: Football Club Barcelona  
Date of joining : 18-07-2008  
House no. : #4323  
Street name: Camp Nou  
City: Barcelona  
State: Catalonia  
Country: Spain  
Pin : 948221
```

```
C:\Users\Abdul\Desktop\programs\assignment 2>
```

4.Display Citizens

From a particular city

```
C:\Users\Abdul\Desktop\programs\assignment 2>run
```

```
Enter 1 to  Add a record.  
Enter 2 to  Delete a record.  
Enter 3 to  Search a Record.  
Enter 4 for Displaying people belonging to particular city/State/Country.  
Enter 5 to  Update a record.
```

```
4
```

You pressed 4.

Press 'c' to search by city, 's' to search by state, 'x' to search by country: c
You entered c

Enter the city(people of that city will be displayed)
Note: use Camel case letters only
i.e. first letter capital, rest small. eg.=Yokohama

-> Yokohama

Adhar no./Social Security no. : 1684264648
Name: Smokey Nagata
Fathers name: Goku Han
Mothers name: Sakuro Haruno
Rank/Position/Occupation: Mechanic
Department/Company: Top Speed Corporation
Date of joining : 29-05-2002
House no. : #628
Street name: Yamashita
City: Yokohama
State: Kanagawa
Country: Japan
Pin : 414532

Adhar no./Social Security no. : 6832658732
Name: Karoshi Nagasaki
Fathers name: Itachi Uchicha
Mothers name: Umiko masaka
Rank/Position/Occupation: Programmer
Department/Company: Forza Inc.
Date of joining : 10-06-2015
House no. : #4678
Street name: Mount Fuji Area
City: Yokohama
State: Kanagawa
Country: Japan
Pin : 463728

```
C:\Users\Abdul\Desktop\programs\assignment 2>
```

Displaying by state:

```
C:\Users\Abdul\Desktop\programs\assignment 2>run
```

```
Enter 1 to  Add a record.  
Enter 2 to  Delete a record.  
Enter 3 to  Search a Record.  
Enter 4 for Displaying people belonging to particular city/State/Country.  
Enter 5 to  Update a record.
```

```
4
```

You pressed 4.

Press 'c' to search by city, 's' to search by state, 'x' to search by country: s
You entered s

Enter the State (People of that state will be displayed)
Note: use Camel case letters only
i.e. first letter capital, rest small. eg.= Kanagawa

-> Catalonia

Adhar no./Social Security no. : 6064081606
Name: Xavi Harnandez
Fathers name: Raul Garcia
Mothers name: Emma W.
Rank/Position/Occupation: Center Mid Fielder
Department/Company: Football Club Barcelona
Date of joining : 18-07-2008
House no. : #4323
Street name: Camp Nou
City: Barcelona
State: Catalonia
Country: Spain
Pin : 948221

Adhar no./Social Security no. : 8194832500
Name: Andres Iniesta
Fathers name: Johann Cruyf
Mothers name: Margot Triumph
Rank/Position/Occupation: Central Attacking Midfielder
Department/Company: Football Club Barcelona
Date of joining : 15-02-2009
House no. : #543
Street name: Malasana
City: Castella
State: Catalonia
Country: Spain
Pin : 951648

```
C:\Users\Abdul\Desktop\programs\assignment 2>
```

Displaying by country:

```
C:\Users\Abdul\Desktop\programs\assignment 2>run
```

```
Enter 1 to Add a record.  
Enter 2 to Delete a record.  
Enter 3 to Search a Record.  
Enter 4 for Displaying people belonging to particular city/State/Country.  
Enter 5 to Update a record.
```

```
4
```

You pressed 4.

Press 'c' to search by city, 's' to search by state, 'x' to search by country: x
You entered x

Enter the Country (People of that country will be displayed)
Note: use Camel case letters only
i.e. first letter capital, rest small. eg.= India

-> India

Adhar no./Social Security no. : 1361616211
Name: Ritik Sharma
Fathers name: Akash Sharma
Mothers name: Naina Devi
Rank/Position/Occupation: Student
Department/Company: C.C.E.T.
Date of joining : 15-09-2006
House no. : #435
Street name: Sector 15-D
City: Chandigarh
State: Chandigarh
Country: India
Pin : 160036

Adhar no./Social Security no. : 6473438438
Name: Dilip Kumar
Fathers name: Kishor Kumar
Mothers name: Zeenat Aman
Rank/Position/Occupation: Actor
Department/Company: Bollywood
Date of joining : 11-11-1962
House no. : #325

5. Update a record:

*before update

```
You pressed 3.  
  
Enter the adhar no./Social security no.  of person: 6832658732  
  
Adhar no./Social Security no. : 6832658732  
Name: Karoshi Nagasaki  
Fathers name: Itachi Uchicha  
Mothers name: Umiko masaka  
Rank/Position/Occupation: Programmer  
Department/Company: Forza Inc.  
Date of joining : 10-06-2015  
House no. : #4678  
Street name: Mount Fuji Area  
City: Yokohama  
State: Kanagawa  
Country: Japan  
Pin : 463728  
  
C:\Users\Abdul\Desktop\programs\assignment 2>
```

*After update:

```
3  
  
You pressed 3.  
  
Enter the adhar no./Social security no.  of person: 6832658732  
  
Adhar no./Social Security no. : 6832658732  
Name: Gohan  
Fathers name: Goku  
Mothers name: Bulma  
Rank/Position/Occupation: Leughtinent  
Department/Company: Indian Army  
Date of joining : 15/05/2002  
House no. : #8493  
Street name: Sector 25-A  
City: Chandigarh  
State: Chandigarh  
Country: India  
Pin : 162266  
  
C:\Users\Abdul\Desktop\programs\assignment 2>
```


Program:

```
C:\Users\Abdul\Desktop\programs\assignment 2>run
```

```
Enter 1 to Add a record.  
Enter 2 to Delete a record.  
Enter 3 to Search a Record.  
Enter 4 for Displaying people belonging to particular city/State/Country.  
Enter 5 to Update a record.
```

```
5
```

```
You pressed 5.
```

```
Enter the Adhar number/Social security number of person to update.  
6832658732
```

```
Please do not exit until current persons data is not entered completly.
```

```
Note use Camel case only. i.e. first letter capital and rest small. eg. = 'Hi' 'These' 'Are' 'Camel' 'Case'
```

```
Enter the name of person. : Gohan
```

```
Enter the fathers name. : Goku
```

```
Enter the mothers name. : Bulma
```

```
Enter the Rank/position/occupation. : Leughtinent
```

```
Enter the department of work palce/Company. : Indian Army
```

```
Enter the date of joining. : 15/05/2002
```

```
Enter the house no. of the person : #8493
```

```
Enter the streetname of the person. : Sector 25-A
```

```
Enter the city of the person. : Chandigarh
```

```
Enter the state of the person. : Chandigarh
```

```
Enter the country of residence. : India
```

```
Enter the pin code of the area. : 162266
```

How to use the program:

Step 1:

Download both the files provided.

Step 1:

Open the source code and change the path variable (on line 7) to the address of db.csv file provided. (Note: use “\\” instead of “\”)

Compile the source code.

Step 2:

Open the csv with notepad and check if the csv file is in the format,

```
data 1,data 2,data 3, ... ,data 10 “\n”
data 11,data 12,data 13, ... ,data 20 “\n”
.
.
.
data n, data (n+1), ... , data m “\n”
```

i.e. a new line character after the last data field in the last line.

Note: program wont know if a record is present until it sees a (next line char (\n)).

Step 3:

Run the executable. And perform the required operation

Conclusion:

Advantages of linked list over arrays.

1. Linked list is a more versatile data structure in that we can resize it, and no responsibility is given to the user to change the no. of (people/students) in the data base each time a record is added or removed.
2. Linked list can be customized to become FILO (first in last out) by inserting at the beginning and accessing from the front.
or FIFO (first in first out) by inserting at the end and accessing from front.

Disadvantages of using a linked list over array

1. Random access in linked list is not possible, although we can have a pseudo random access by calling a function which takes input the data field of the node, transverses the list and returns the required node. But in comparison arrays are much simple.
2. It takes more space (to store the next pointer). And accessing data is more complicated.

