



National Forensic  
Sciences University

Knowledge | Wisdom | Fulfilment

An Institution of National Importance

(Ministry of Home Affairs, Government of India)

## MBA BAI SEM-2

# Introduction to Python & R(MBABI-SII-5)

BY

Gaurav Saini (012300400013002008)

To

Dr Hetal Thaker

# Census Disabled Population, 2011

# About the Dataset

## 1 Data Source

The dataset was obtained from an [data.gov.in](http://data.gov.in) and includes information on Disabled population by type of disability, type of households and sex,2011-INDIA

## 2 Data Size

The dataset contains 34 columns and 432 rows of data, covering a year 2011.

## 3 Data Format

The data is provided in a CSV file format, which can be easily imported and analyzed using various software tools.

# Questions

## Key Questions

1. Total persons with disabilities in both rural and urban area of each state ?
2. What are the 'Houseless Household' population in India, including rural and urban areas?
3. What are the 'Normal Household' population in India, including rural and urban areas ?
4. What are the 'Institutional Household' population in India, including rural and urban areas ?
5. 'Houseless Householders' with disabilities in rural area of each state ?
6. 'Houseless Householders' with disabilities in urban area of each state ?
7. 'Normal Householders' with disabilities in rural area of each state ?
8. 'Normal Householders' with disabilities in urban area of each state ?
9. 'Institutional Householders' with disabilities in rural area of each state ?
10. 'Institutional Householders' with disabilities in urban area of each state ?

# Data Preprocessing

1

## Data Cleaning

There is no missing values, inconsistencies, and outliers in the dataset that ensure data quality.

2

## Feature Selection

Identified the relevant features for the analysis by evaluating their relation with the each others.

3

## Coding and Transformation

Applied appropriate coding techniques for categorical and numeric columns(variables) features to analyze the data.

for data preprocess



Step 3

**Data  
transformation**

# Analysis

## ✓ Q1. Total persons with disabilities in both rural and urban area of each state ?

```
[ ] Total = df[(df["Type of Household"]=="Total") & (df["Area Name"]!="INDIA")]
Total.sort_values(by=["Area Name","Total disabled population - Persons"],ascending=False)
```

	Table Name	State Code	Distt. Code	Area Name	Total/Rural/Urban	Type of Household	No. of Households having disabled persons	Total disabled population - Persons	Total disabled population - Males	Total disabled population - Females	...	Mental Retardation - Females	Mental Illness - Persons
228	C0130	19	0	State - WEST BENGAL	Total	Total	1589266	2017406	1127181	890225	...	60253	71515
232	C0130	19	0	State - WEST BENGAL	Rural	Total	1107498	1368942	768621	600321	...	41051	49881
236	C0130	19	0	State - WEST BENGAL	Urban	Total	481768	648464	358560	289904	...	19202	21634

## Insights from above :

- West Bengal has the highest number(1589266) of persons with disabilities, of which 1107498 are in rural areas and the rest(481768) in urban areas.
- Andaman & Nicobar Islands has the lowest number(5702) of persons with disabilities, of which 4152 are in rural areas and the rest(1550) in urban areas.
- There are more male(1127181) with disabilities in West Bengal than female(890225).
- In Andaman and Nicobar, there are more female(201) suffering from mental illness than male(163).

## Q2. What are the 'Houseless Household' population in India, including rural and urban areas?

```
df1 = df[(df["Type of Household"]=="Houseless Household") & (df["Area Name"]=="INDIA")]
df1
```



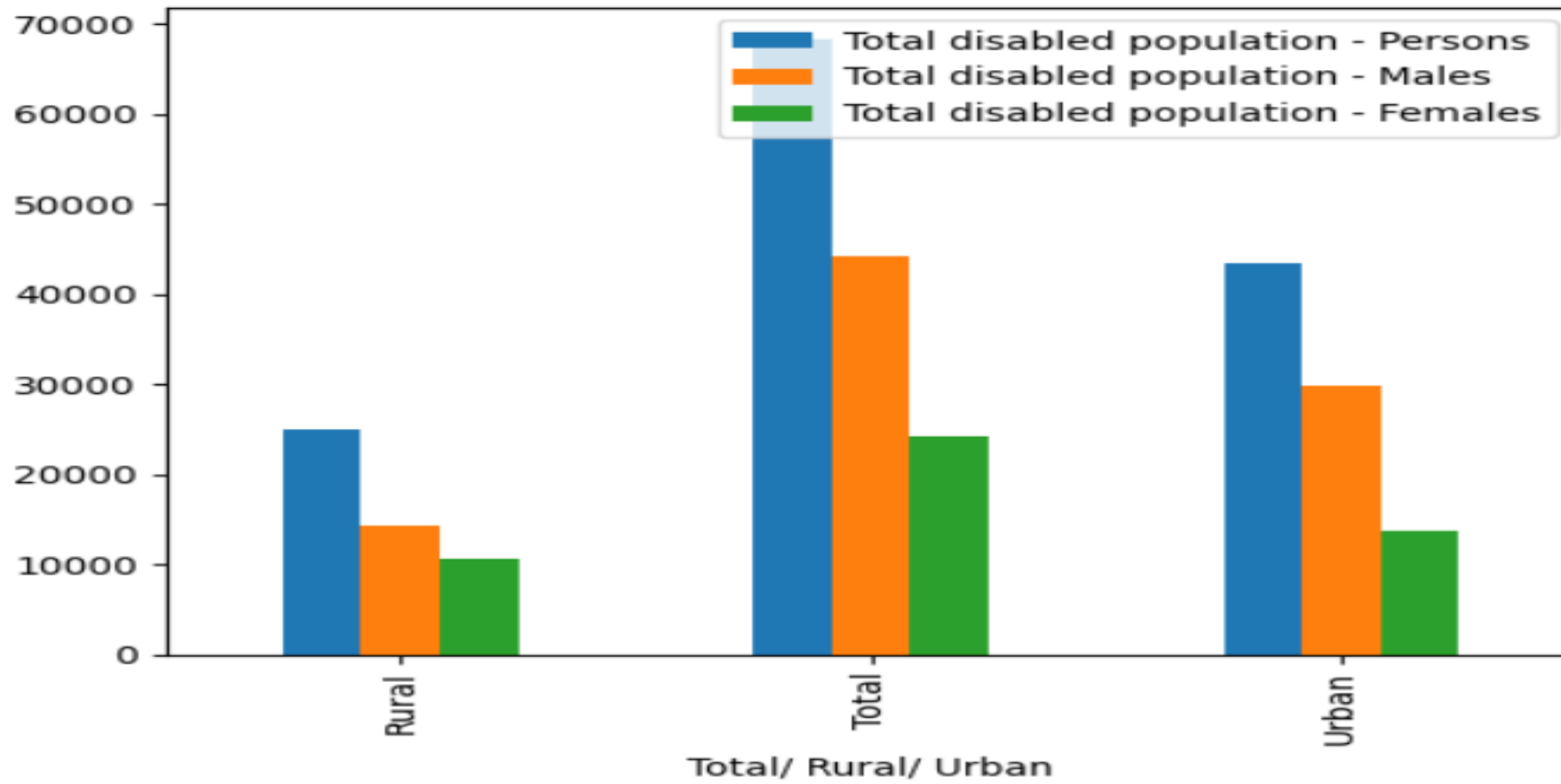
	Table Name	State Code	Distt. Code	Area Name	Total/ Rural/ Urban	Type of Household	No. of Households having disabled persons	Total disabled population - Persons	Total disabled population - Males	Total disabled population - Females	...	Mental Retardation - Females	Mental Illness - Persons	Mental Illness - Males	Mental Illness - Females	Any Other - Persons
3	C0130	0	0	INDIA	Total	Houseless Household	50237	68422	44211	24211	...	1561	3939	2473	1466	11425
7	C0130	0	0	INDIA	Rural	Houseless Household	19199	24913	14339	10574	...	650	1558	884	674	4290
11	C0130	0	0	INDIA	Urban	Houseless Household	31038	43509	29872	13637	...	911	2381	1589	792	7135



```
df1.groupby(['Total/ Rural/ Urban']).sum().plot(kind='bar',  
y=['Total disabled population - Persons', 'Total disabled population - Males', 'Total disabled population - Females'])
```



<Axes: xlabel='Total/ Rural/ Urban'>



## Insights :

- The total 'Houseless Household' disabled persons in India is 68422.
- In Rural india- 24913(male:14339, female: 10574)
- In Urban india- 43509(male:29872, female:13637)



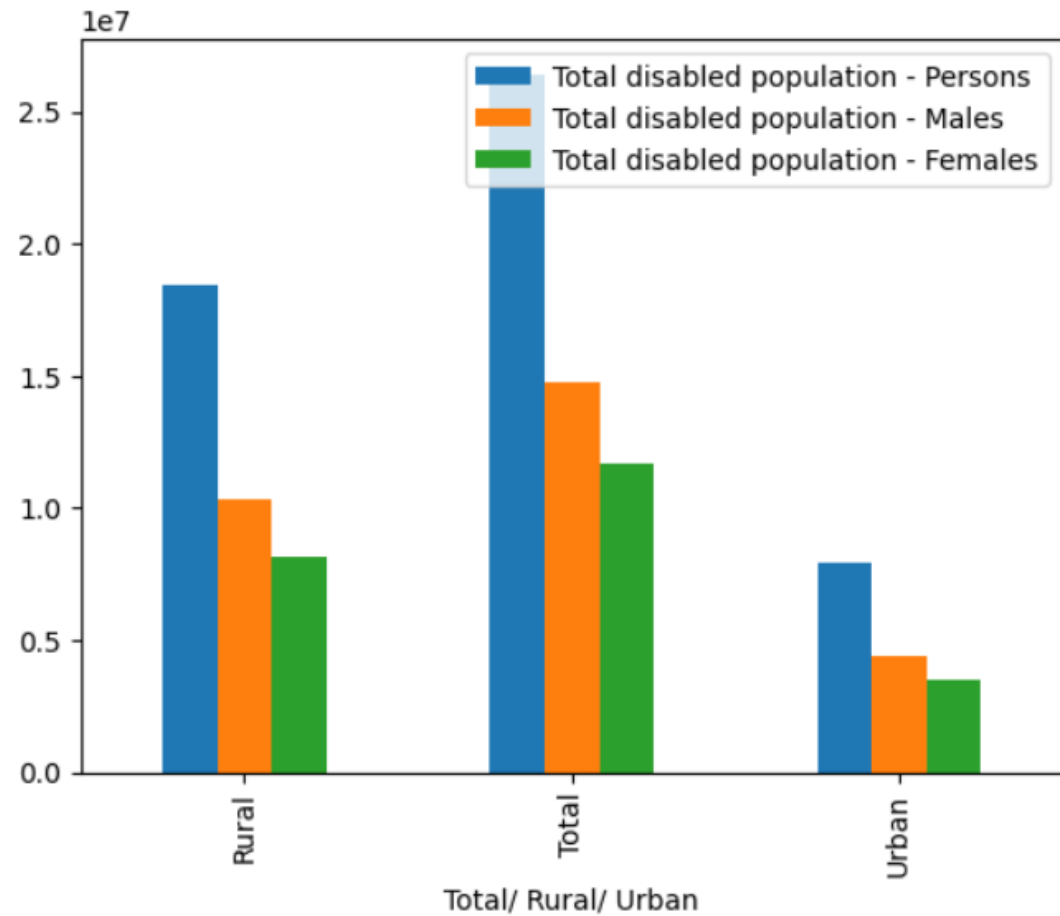
### Q3. What are the 'Normal Household' population in India, including rural and urban areas ?

```
df2 = df[(df["Type of Household"]=="Normal Household") & (df["Area Name"]=="INDIA")]
df2
```

	Table Name	State Code	Distt. Code	Area Name	Total/Rural/Urban	Type of Household	No. of Households having disabled persons	Total disabled population - Persons	Total disabled population - Males	Total disabled population - Females	...	Mental Retardation - Females	Mental Illness - Persons	Mental Illness - Males	Mental Illness - Females	Any Other - Persons
1	C0130	0	0	INDIA	Total	Normal Household	20643273	26441354	14755701	11685653	...	621438	696692	401291	295401	4867998
5	C0130	0	0	INDIA	Rural	Normal Household	14624131	18477266	10316977	8160289	...	428251	485805	278125	207680	3265721
9	C0130	0	0	INDIA	Urban	Normal Household	6019142	7964088	4438724	3525364	...	193187	210887	123166	87721	1602277

```
df2.groupby(['Total/ Rural/ Urban']).sum().plot(kind='bar',  
y=['Total disabled population - Persons', 'Total disabled population - Males', 'Total disabled population - Females'])
```

<Axes: xlabel='Total/ Rural/ Urban'>



## Insights :

- The total 'Normal Household' disabled in india is 26441354, which is more than 'Houseless Household'
- In rural India the "Normal Household" male population(10316977) exceeds the female population(8160289).
- In urban India the "Normal household" male population(4438724) exceeds the female population(3525364).

# Q4. What are the 'Institutional Household' population in India, including rural and urban areas ?

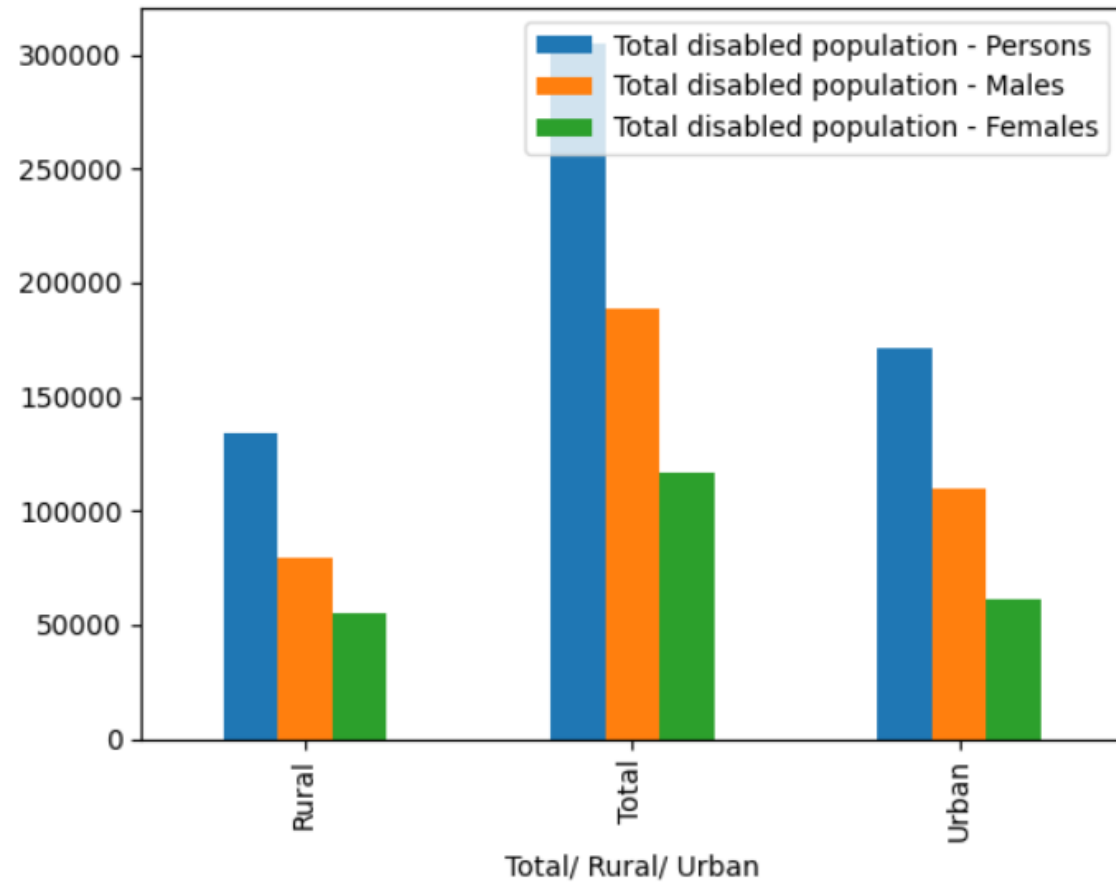
```
df3 = df[(df["Type of Household"]=="Institutional Household") & (df["Area Name"]=="INDIA")]
df3
```

	Table Name	State Code	Distt. Code	Area Name	Total/Rural/Urban	Type of Household	No. of Households having disabled persons	Total disabled population - Persons	Total disabled population - Males	Total disabled population - Females	...	Mental Retardation - Females	Mental Illness - Persons	Mental Illness - Males	Mental Illness - Females	Any Other - Persons
2	C0130	0	0	INDIA	Total	Institutional Household	86684	305218	188681	116537	...	12067	22249	11994	10255	48166
6	C0130	0	0	INDIA	Rural	Institutional Household	45126	134179	79243	54936	...	5401	8517	4449	4068	23096
10	C0130	0	0	INDIA	Urban	Institutional Household	41558	171039	109438	61601	...	6666	13732	7545	6187	25070

```
df3.groupby(['Total/ Rural/ Urban']).sum().plot(kind='bar',
```

```
y=['Total disabled population - Persons','Total disabled population - Males','Total disabled population - Females'])
```

<Axes: xlabel='Total/ Rural/ Urban'>



## Insights :

- In India, "Institutional Household" urban population(171039) exceeds the rural population(134179).
- The total 'Institutional Household' disabled persons in india is(305218) , which is less than both 'Houseless Household' and 'Normal Household'.












- 4464 persons with disabilities live in 'Houseless Household' in rural areas of Uttar Pradesh, the highest in India. Whereas no disabled person lives in 'Houseless Household' in rural areas of 'Daman & Diu', 'Lakshadweep', 'Mizoram', 'Chandigarh' in India
- In Uttar Pradesh, there are more male(111) suffering from multiple disability than female(69).

## Q6. 'Houseless Householders' with disabilities in urban area of each state ?

```
b = df[(df["Type of Household"]=="Houseless Household") & (df["Total/ Rural/ Urban"]=="Urban") & (df["Area Name"]!="INDIA")]
b.sort_values(by=["Total disabled population - Persons"], ascending=False)
```



	Table Name	State Code	Distt. Code	Area Name	Total/ Rural/ Urban	Type of Household	No. of Households having disabled persons	Total disabled population - Persons	Total disabled population - Males	Total disabled population - Females	...	Mental Retardation - Females	Mental Illness - Persons	Mental Illness - Males	Mental Illness - Females
119	C0130	9	0	State - UTTAR PRADESH	Urban	Houseless Household	5171	8412	5956	2456	...	99	147	98	
335	C0130	27	0	State - MAHARASHTRA	Urban	Houseless Household	4307	5743	4128	1615	...	92	251	168	
239	C0130	19	0	State - WEST BENGAL	Urban	Houseless Household	2917	5104	3742	1362	...	136	339	245	
383	C0130	31	0	State - LAKSHADWEEP	Urban	Houseless Household	0	0	0	0	...	0	0	0	

35 rows × 34 columns

## Insights :

- 8412 persons with disabilities live in 'Houseless Households' in urban areas of Uttar Pradesh, which is the highest in India and higher than in rural areas of UP. Whereas in urban areas of 'Lakshadweep' in India, no persons with disabilities live in 'houseless Household' in India.



## ✓ Q7. 'Normal Householders' with disabilities in rural area of each state ?

```
▶ c = df[(df["Type of Household"]=="Normal Household") & (df["Total/ Rural/ Urban"]=="Rural") & (df["Area Name"]!="INDIA")]
c.sort_values(by=["Total disabled population - Persons"], ascending=False)
```



	Table Name	State Code	Distt. Code	Area Name	Total/ Rural/ Urban	Type of Household	No. of Households having disabled persons	Total disabled population - Persons	Total disabled population - Males	Total disabled population - Females	...	Mental Retardation - Females	Mental Illness - Persons	Mental Illness - Males	Mental Illness - Females
113	C0130	9	0	State - UTTAR PRADESH	Rural	Normal Household	2264336	3142779	1791016	1351763	...	51507	57180	36864	20
125	C0130	10	0	State - BIHAR	Rural	Normal Household	1487936	2038174	1176349	861825	...	29788	32602	21543	11
53	C0130	4	0	State - CHANDIGARH	Rural	Normal Household	300	346	212	134	...	10	20	11	

35 rows × 34 columns

## Insights :

- 3142779 persons with disabilities live in 'Normal Household' in rural areas of Uttar Pradesh, which is the highest in India. Whereas in rural areas of 'Chandigarh' in India, 346 persons with disabilities live in 'Normal Household' in India.
- In Chandigarh state, there are more male(212) suffering from disability than female(134), similarly in Uttar Pradesh, there are more male(1791016) suffering from disability than female(1351763).

## Q8. 'Normal Householders' with disabilities in urban area of each state ?

```
[ ] d = df[(df["Type of Household"]=="Normal Household") & (df["Total/ Rural/ Urban"]=="Urban") & (df["Area Name"]!="INDIA")]
d.sort_values(by=["Total disabled population - Persons"], ascending=False)
```

	Table Name	State Code	Distt. Code	Area Name	Total/ Rural/ Urban	Type of Household	No. of Households having disabled persons	Total disabled population - Persons	Total disabled population - Males	Total disabled population - Females	...	Mental Retardation - Females	Mental Illness - Persons	Mental Illness - Males	Mental Illness - Females
333	C0130	27	0	State - MAHARASHTRA	Urban	Normal Household	927389	1265060	720040	545020	...	27637	20929	11820	9
117	C0130	9	0	State - UTTAR PRADESH	Urban	Normal Household	653965	963442	541825	421617	...	15264	18465	11734	6
381	C0130	31	0	State - LAKSHADWEEP	Urban	Normal Household	1023	1213	646	567	...	26	57	22	0

35 rows × 34 columns

## Insights :

- 1265060 persons with disabilities live in 'Normal Household' in urban areas of **Maharashtra**, which is the highest in India. Whereas in urban areas of 'Lakshadweep' in India, 1213 persons with disabilities live in 'Normal Household' in India.



## Q9. 'Institutional Householders' with disabilities in rural area of each state ?

```
e = df[(df["Type of Household"]=="Institutional Household") & (df["Total/ Rural/ Urban"]=="Rural") & (df["Area Name"]!="INDIA")]
e.sort_values(by=["Total disabled population - Persons"],ascending=False)
```



	Table Name	State Code	Distt. Code	Area Name	Total/ Rural/ Urban	Type of Household	No. of Households having disabled persons	Total disabled population - Persons	Total disabled population - Males	Total disabled population - Females	...	Mental Retardation - Females	Mental Illness - Persons	Mental Illness - Males	Me Ill Fem
330	C0130	27	0	State - MAHARASHTRA	Rural	Institutional Household	4960	20474	12902	7572	...	1106	269	159	
114	C0130	9	0	State - UTTAR PRADESH	Rural	Institutional Household	10387	19372	10231	9141	...	295	261	131	
378	C0130	31	0	State - LAKSHADWEEP	Rural	Institutional Household	0	0	0	0	...	0	0	0	
54	C0130	4	0	State - CHANDIGARH	Rural	Institutional Household	0	0	0	0	...	0	0	0	

35 rows × 34 columns

## Insights :

- 20474 persons with disabilities live in 'Institutional Households' in rural areas of **Maharashtra**, which is the highest in India. Whereas in rural areas of '**Chandigarh**' and '**Lakshadweep**', no persons with disabilities live in 'Institutional Household' in India.

## Q10. 'Institutional Householders' with disabilities in urban area of each state ?

```
[ ] f = df[(df["Type of Household"]=="Institutional Household") & (df["Total/ Rural/ Urban"]=="Urban") & (df["Area Name"]!="INDIA")]
f.sort_values(by=["Total disabled population - Persons"],ascending=False)
```

	Table Name	State Code	Distt. Code	Area Name	Total/ Rural/ Urban	Type of Household	No. of Households having disabled persons	Total disabled population - Persons	Total disabled population - Males	Total disabled population - Females	...	Mental Retardation - Females	Mental Illness - Persons	Mental Illness - Males	Me Ill Fem
334	C0130	27	0	State - MAHARASHTRA	Urban	Institutional Household	6233	26454	17336	9118	...	919	3601	2261	
118	C0130	9	0	State - UTTAR PRADESH	Urban	Institutional Household	6574	19045	12675	6370	...	277	494	268	
406	C0130	33	0	State - TAMIL NADU	Urban	Institutional Household	3275	16719	8727	7992	...	1156	2030	1050	
322	C0130	26	0	State - DADRA & NAGAR HAVELI	Urban	Institutional Household	0	0	0	0	...	0	0	0	

35 rows × 34 columns

## Insights :

- 26454 persons with disabilities live in 'Institutional Households' in urban areas of Maharashtra, which is the highest in India. Whereas in urban areas of 'Dadra & Nagar Haveli', no persons with disabilities live in 'Institutional Household' in India.

# Thank You