

```
In [ ]: import pandas as pd
```

Read the text file

i) Read the data from the file "people.txt".

```
In [ ]: data=pd.read_csv('people.txt', delimiter=' ')
display(data)
```

	Age	agegroup	height	status	yearsmarried
0	21	adult	6.0	single	-1
1	2	child	3.0	married	0
2	18	adult	5.7	marri	20
3	221	elderly	5.0	widowed	2
4	34	child	-7.0	married	3

ii) Create a ruleset E that contain rules to check for the following conditions:

1. The age should be in the range 0-150.
2. The age should be greater than yearsmarried.
3. The status should be married or single or widowed.
4. If age is less than 18 the agegroup should be child, if age is between 18 and 65 the agegroup should be adult, if age is more than 65 the agegroup should be elderly.

```
In [ ]: import ruleset
```

```
In [ ]: # importing rules
rules=[]
rules.append(ruleset.check_age(data))
rules.append(ruleset.check_agemarried(data))
rules.append(ruleset.check_status(data))
rules.append(ruleset.check_ageGroup(data))
```

```
In [ ]: print(rules)
```

```
[(1, 'Ruleset 1.'), (0, 'Ruleset 2.'), (1, 'Ruleset 3.'), (1, 'Ruleset 4.')]
```

(iii) Check whether ruleset E is violated by the data in the file people.txt.

```
In [ ]: flag=False
        for violations in rules:
            if violations[0]!=0: # 0 indicates that no row is invalid
                flag=True
        if flag:
            print("Ruleset has been violated.")
        else:
            print("No ruleset has been violated.")
```

Ruleset has been violated.

(iv) Summarize the results obtained in part (iii)

```
In [ ]: print("Violations count in each ruleset.")
        for violations in rules:
            print(violations[1], " : ",violations[0])
```

Violations count in each ruleset.

```
Ruleset 1. : 1
Ruleset 2. : 0
Ruleset 3. : 1
Ruleset 4. : 1
```

(V) Visualize the results obtained in part (iii)

```
In [ ]: df=pd.Series()
        for i in rules:
            df[i[1]]=i[0]
```

```
In [ ]: display(df)
```

```
Ruleset 1.    1
Ruleset 2.    0
Ruleset 3.    1
Ruleset 4.    1
dtype: int64
```

```
In [ ]: df.plot.bar()
```

Out[ ]: <AxesSubplot:>

