### Name:Priyanka Warude

```
import pandas as pd
In [ ]:
          data=pd.read_csv("E:\Data files\Brain Stroke.csv")
In [2]:
In [3]:
          data
Out[3]:
                  gender
                                hypertension
                                             heart_disease
                                                            ever_married work_type
                                                                                       Residence_type avg_gli
              0
                    Male
                          67.0
                                           0
                                                          1
                                                                                                 Urban
                                                                       Yes
                                                                               Private
                    Male
                          80.0
                                           0
                                                          1
                                                                       Yes
                                                                               Private
                                                                                                  Rural
                  Female
                         49.0
                                           0
                                                          0
                                                                       Yes
                                                                               Private
                                                                                                 Urban
                                                                                 Self-
                  Female 79.0
                                                          0
                                                                                                  Rural
              3
                                                                       Yes
                                                                             employed
              4
                    Male
                          81.0
                                           0
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                                                                       Yes
                                                                               Private
                                                                                                 Urban
              ...
                                                                        ...
           4976
                    Male
                          41.0
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           4977
                    Male
                         40.0
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                          45.0
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           4978
                 Female
                                                                       Yes
                                                                              Govt job
           4979
                    Male
                          40.0
                                           0
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                                                                       Yes
                                                                               Private
                                                                                                  Rural
           4980
                 Female 80.0
                                                          0
                                                                       Yes
                                                                               Private
                                                                                                 Urban
          4981 rows × 11 columns
```

## 1. Find the male and female thoese age are below 50 and they working as self & government employees

```
In [4]: data["work_type"].unique()
Out[4]: array(['Private', 'Self-employed', 'Govt_job', 'children'], dtype=object)
```

```
In [5]: Age=[]
          for x in data["age"]:
               if x<50:
                   Age.append(0)
               else:
                    Age.append(1)
          print(Age)
                                    0, 1, 1, 1,
                                                     1, 1, 1, 1, 0, 1,
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In [6]: |data.insert(1, "age1", Age)
In [7]:
          data
Out[7]:
                                                                  ever_married work_type Residence_type
                 gender
                         age1
                                age
                                     hypertension
                                                   heart_disease
              0
                   Male
                                67.0
                                                0
                                                               1
                                                                                    Private
                                                                                                     Urban
                             1
                                                                           Yes
                                80.0
                                                 0
                                                               1
              1
                   Male
                                                                           Yes
                                                                                    Private
                                                                                                      Rural
                 Female
                                49.0
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                                                                           Yes
                                                                                    Private
                                                                                                     Urban
                                                                                      Self-
                 Female
                                79.0
                                                               0
                                                                                                      Rural
              3
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                             1
                                                                                  employed
              4
                   Male
                                81.0
                                                 0
                                                               0
                                                                           Yes
                                                                                    Private
                                                                                                     Urban
           4976
                                41.0
                                                               0
                   Male
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                                                 O
                                                                            No
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                                                                                                      Rura
           4977
                   Male
                                40.0
                                                               0
                                                                           Yes
                                                                                    Private
                                                                                                     Urban
           4978
                 Female
                             0
                                45.0
                                                               0
                                                                           Yes
                                                                                  Govt_job
                                                                                                      Rural
```

4981 rows × 12 columns

Male

Female

4979

4980

localhost:8889/notebooks/Brain Stroke assignment1. ipynb.ipynb#Name:Tejaswini-Hirchand-Patil

0

40.0

80.0

0

0

Yes

Yes

Private

Private

Rural

Urban

```
In [8]: ad=data.iloc[:,[0,1,6]]
ad
```

0	u.	t	[8	]:

	gender	age1	work_type
0	Male	1	Private
1	Male	1	Private
2	Female	0	Private
3	Female	1	Self-employed
4	Male	1	Private
4976	Male	0	Private
4977	Male	0	Private
4978	Female	0	Govt_job
4979	Male	0	Private
4980	Female	1	Private

4981 rows × 3 columns

```
In [9]: Result=ad.loc[(ad["age1"]==0)&((ad["work_type"]=="Govt_job")|(ad["work_type"]=="5")
```

### In [10]: Result

### Out[10]:

	gender	age1	work_type
28	Male	0	Govt_job
64	Male	0	Self-employed
98	Female	0	Self-employed
188	Female	0	Self-employed
223	Female	0	Govt_job
4940	Female	0	Self-employed
4949	Female	0	Govt_job
4950	Male	0	Govt_job
4963	Female	0	Govt_job
4978	Female	0	Govt_job

497 rows × 3 columns

```
In [11]: Result["work_type"].unique()
Out[11]: array(['Govt_job', 'Self-employed'], dtype=object)
```

## 2. Find the females thoese are having heart disease problems and the BMI is between 20-35.

```
In [12]:
          Z=[]
          for x in data["gender"]:
               if x=="Male":
                   Z.append(1)
              else:
                   Z.append(0)
          print(Z)
          [1, 1, 0, 0, 1, 1, 0, 0, 0, 0, 0, 0, 0, 1, 1, 0, 0, 0, 0, 1, 1, 1, 0, 1, 1,
          1, 0, 1, 1, 0, 1, 0, 1, 0, 1, 1, 1, 1, 1, 0, 1, 0, 0, 0, 1, 0, 1, 0, 0, 0, 0,
                       1, 0, 0, 0, 1,
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                                                  0, 0, 1, 1,
                                                                             1, 1,
                       0, 1, 1, 0, 1, 0, 0, 1, 1, 0, 0, 1, 0, 0,
In [13]: data.insert(0,"New Gender",Z)
In [14]: data
Out[14]:
                   New
                                      age hypertension heart_disease ever_married work_type Resid
                         gender age1
                 Gender
              0
                           Male
                                      67.0
                                                                   1
                                                                                      Private
                                                                              Yes
                                                      0
              1
                      1
                           Male
                                      80.0
                                                                              Yes
                                                                                      Private
                         Female
                                      49.0
                                                                   0
                                                                              Yes
                                                                                      Private
                                                                                        Self-
              3
                         Female
                                    1 79.0
                                                                   0
                                                                              Yes
                                                                                    employed
                                                      0
                                                                   0
                                                                                      Private
                           Male
                                    1 81.0
                                                                              Yes
                                   0 41.0
                                                                   0
           4976
                           Male
                                                      0
                                                                                      Private
                                                                               No
           4977
                           Male
                                   0 40.0
                                                                   0
                                                                              Yes
                                                                                      Private
           4978
                         Female
                                      45.0
                                                                   0
                                                                              Yes
                                                                                    Govt job
           4979
                      1
                           Male
                                   0 40.0
                                                      0
                                                                   0
                                                                              Yes
                                                                                      Private
```

In [15]: ak=data.loc[(data["New Gender"]==0)&(data["heart\_disease"]==1)]
ak

### Out[15]:

	New Gender	gender	age1	age	hypertension	heart_disease	ever_married	work_type	Residen
9	0	Female	1	61.0	0	1	Yes	Govt_job	
11	0	Female	1	79.0	0	1	Yes	Private	
29	0	Female	1	82.0	1	1	No	Private	
42	0	Female	1	79.0	0	1	Yes	Private	
61	0	Female	1	80.0	0	1	Yes	Self- employed	
						•••			
4955	0	Female	1	69.0	0	1	Yes	Private	
4966	0	Female	1	65.0	0	1	Yes	Private	
4968	0	Female	1	78.0	1	1	Yes	Private	
4969	0	Female	1	70.0	0	1	Yes	Self- employed	
4970	0	Female	1	70.0	0	1	Yes	Self- employed	

112 rows × 13 columns

In [16]: D=ak.iloc[:,[0,5,10]]

### Out[16]:

	New Gender	heart_disease	bmi
9	0	1	36.8
11	0	1	28.2
29	0	1	26.5
42	0	1	27.7
61	0	1	21.7
4955	0	1	31.2
4966	0	1	29.4
4968	0	1	31.2
4969	0	1	28.6
4970	0	1	30.9

112 rows × 3 columns

```
In [17]: Bmi=[]
    for x in D["bmi"]:
        if x>=20 and x<35:
            Bmi.append(x)
        else:
            Bmi.append(0)
    print(Bmi)</pre>
```

[0, 28.2, 26.5, 27.7, 21.7, 32.3, 29.8, 0, 0, 26.1, 0, 27.9, 31.0, 0, 31.0, 0, 27.0, 25.2, 24.9, 30.0, 24.8, 26.0, 34.5, 29.7, 22.8, 32.3, 21.7, 0, 29.4, 34. 4, 22.2, 22.1, 26.0, 26.7, 0, 30.7, 34.2, 0, 31.8, 0, 0, 31.0, 28.7, 27.3, 34. 3, 0, 24.9, 25.1, 29.2, 25.3, 28.8, 28.2, 0, 22.2, 23.7, 28.1, 22.9, 25.4, 25. 6, 29.6, 28.3, 33.4, 29.7, 31.1, 32.2, 0, 32.8, 28.1, 34.6, 0, 29.7, 23.4, 21. 4, 33.5, 24.3, 0, 31.3, 34.5, 0, 0, 0, 26.1, 30.6, 0, 32.5, 25.5, 20.7, 32.9, 27.7, 22.7, 0, 28.6, 24.2, 23.3, 31.5, 27.4, 0, 26.4, 24.5, 28.3, 28.8, 31.7, 29.0, 33.7, 30.0, 33.5, 28.4, 31.2, 29.4, 31.2, 28.6, 30.9]

```
In [18]: D.insert(2,"BMI",Bmi)
D
```

### Out[18]:

	New Gender	heart_disease	ВМІ	bmi
9	0	1	0.0	36.8
11	0	1	28.2	28.2
29	0	1	26.5	26.5
42	0	1	27.7	27.7
61	0	1	21.7	21.7
4955	0	1	31.2	31.2
4966	0	1	29.4	29.4
4968	0	1	31.2	31.2
4969	0	1	28.6	28.6
4970	0	1	30.9	30.9

112 rows × 4 columns

### 3.Add the new column as per age group.

In [19]: data

Out[19]:

	New Gender	gender	age1	age	hypertension	heart_disease	ever_married	work_type	Residen
0	1	Male	1	67.0	0	1	Yes	Private	
1	1	Male	1	80.0	0	1	Yes	Private	
2	0	Female	0	49.0	0	0	Yes	Private	
3	0	Female	1	79.0	1	0	Yes	Self- employed	
4	1	Male	1	81.0	0	0	Yes	Private	
4976	1	Male	0	41.0	0	0	No	Private	
4977	1	Male	0	40.0	0	0	Yes	Private	
4978	0	Female	0	45.0	1	0	Yes	Govt_job	
4979	1	Male	0	40.0	0	0	Yes	Private	
4980	0	Female	1	80.0	1	0	Yes	Private	

4981 rows × 13 columns

```
In [20]: Age=[]
for x in data["age"]:
    if x>0 and x<=15:
        Age.append('Child')
    elif x>15 and x<=30:
        Age.append('Teenage')
    elif x>30 and x<=50:
        Age.append('Adultage')
    elif x>50:
        Age.append('Oldage')
    print(Age)
```

['Oldage', 'Oldage', 'Olda age', 'Oldage', 'Oldage', 'Oldage', 'Adultage', 'Oldage', 'Oldag e', 'Oldage', 'Oldage', 'Adultage', 'Oldage', 'Oldage', 'Adultage', 'Oldage', 'Oldage', 'Oldage', 'Oldage', 'Adultage', 'Oldage', 'Oldage', 'Oldage', 'Olda ge', 'Oldage', 'Adultage', 'Olda ge', 'Oldage', 'Oldage', 'Oldage', 'Oldage', 'Oldage', 'Oldage', 'Oldage', 'O ldage', 'Oldage', 'Oldage', 'Adultage', 'Oldage', ' e', 'Oldage', 'Oldage', 'Adultage', 'Oldage', 'Oldage', 'Oldage', 'Oldage', 'Oldage', 'Adultage', 'Oldage', 'Oldage', 'Oldage', 'Oldage', 'Olda ge', 'Oldage', 'Oldage', 'Oldage', 'Oldage', 'Adultage', 'Oldage', 'Oldag e', 'Adultage', 'Oldage', 'Oldag e', 'Oldage', 'O dage', 'Oldage', 'Oldag ge', 'Oldage', 'Oldage', 'Oldage', 'Oldage', 'Oldage', 'Oldage', 'O In [21]: data.insert(2,"Age1",Age)
 data

Out[21]:

	New Gender	gender	Age1	age1	age	hypertension	heart_disease	ever_married	work_type
0	1	Male	Oldage	1	67.0	0	1	Yes	Private
1	1	Male	Oldage	1	0.08	0	1	Yes	Private
2	0	Female	Adultage	0	49.0	0	0	Yes	Private
3	0	Female	Oldage	1	79.0	1	0	Yes	Se <b>l</b> f- employed
4	1	Male	Oldage	1	81.0	0	0	Yes	Private
							•••		
4976	1	Male	Adultage	0	41.0	0	0	No	Private
4977	1	Male	Adultage	0	40.0	0	0	Yes	Private
4978	0	Female	Adultage	0	45.0	1	0	Yes	Govt_job
4979	1	Male	Adultage	0	40.0	0	0	Yes	Private
4980	0	Female	Oldage	1	80.0	1	0	Yes	Private

4981 rows × 14 columns

In [22]: del data["New Gender"]

In [23]: del data["age1"]

In [24]: data

Out[24]:

	gender	Age1	age	hypertension	heart_disease	ever_married	work_type	Residence_typ
0	Male	Oldage	67.0	0	1	Yes	Private	Urba
1	Male	Oldage	80.0	0	1	Yes	Private	Rura
2	Female	Adultage	49.0	0	0	Yes	Private	Urba
3	Female	Oldage	79.0	1	0	Yes	Self- employed	Rura
4	Male	Oldage	81.0	0	0	Yes	Private	Urba
4976	Male	Adultage	41.0	0	0	No	Private	Rura
4977	Male	Adultage	40.0	0	0	Yes	Private	Urba
4978	Female	Adultage	45.0	1	0	Yes	Govt_job	Rura
4979	Male	Adultage	40.0	0	0	Yes	Private	Rura
4980	Female	Oldage	80.0	1	0	Yes	Private	Urba
4981 ı	ows × 12	2 columns						
4								•

# 4. Oldage peoples those are smoking continously and average glucose level above 150

In [25]: part=data.iloc[:,[1,8,10]]
 part

Out[25]:

	Age1	avg_glucose_level	smoking_status
0	Oldage	228.69	formerly smoked
1	Oldage	105.92	never smoked
2	Adultage	171.23	smokes
3	Oldage	174.12	never smoked
4	Oldage	186.21	formerly smoked
4976	Adultage	70.15	formerly smoked
4977	Adultage	191.15	smokes
4978	Adultage	95.02	smokes
4979	Adultage	83.94	smokes
4980	Oldage	83.75	never smoked

4981 rows × 3 columns

In [46]: ab=part.loc[(part["avg\_glucose\_level"]>150)&(part["Age1"]=="Oldage")&(part["smoki
ab

Out[46]:

	Age1	avg_glucose_level	smoking_status
13	Oldage	191.61	smokes
14	Oldage	221.29	smokes
16	Oldage	193.94	smokes
23	Oldage	195.23	smokes
24	Oldage	212.08	smokes
4898	Oldage	243.73	smokes
4912	Oldage	198.79	smokes
4951	Oldage	208.05	smokes
4970	Oldage	240.69	smokes
4972	Oldage	238.27	smokes

75 rows × 3 columns

# 5.a) Females working in private & are from urban area.

b) Adult & oldage females count.

In [27]: data

Out[27]:

	gender	Age1	age	hypertension	heart_disease	ever_married	work_type	Residence_
0	Male	Oldage	67.0	0	1	Yes	Private	ι
1	Male	Oldage	80.0	0	1	Yes	Private	
2	Female	Adultage	49.0	0	0	Yes	Private	ι
3	Female	Oldage	79.0	1	0	Yes	Self- employed	
4	Male	Oldage	81.0	0	0	Yes	Private	ι
4976	Male	Adultage	41.0	0	0	No	Private	
4977	Male	Adultage	40.0	0	0	Yes	Private	ι
4978	Female	Adultage	45.0	1	0	Yes	Govt_job	
4979	Male	Adultage	40.0	0	0	Yes	Private	
4980	Female	Oldage	80.0	1	0	Yes	Private	ι
4981 ı	rows × 12	2 columns						•
4								<b>&gt;</b>

In [28]: N=data.iloc[:,[0,1,6,7]]
N

Out[28]:

	gender	Age1	work_type	Residence_type
0	Male	Oldage	Private	Urban
1	Male	Oldage	Private	Rural
2	Female	Adultage	Private	Urban
3	Female	Oldage	Self-employed	Rural
4	Male	Oldage	Private	Urban
			•••	•••
4976	Male	Adultage	Private	Rural
4977	Male	Adultage	Private	Urban
4978	Female	Adultage	Govt_job	Rural
4979	Male	Adultage	Private	Rural
4980	Female	Oldage	Private	Urban

4981 rows × 4 columns

In [29]: M=N.loc[(N["gender"]=="Female")]
M

### Out[29]:

	gender	Age1	work_type	Residence_type
2	Female	Adultage	Private	Urban
3	Female	Oldage	Self-employed	Rural
6	Female	Oldage	Private	Urban
7	Female	Oldage	Private	Urban
8	Female	Oldage	Private	Rural
				•••
4968	Female	Oldage	Private	Rural
4969	Female	Oldage	Self-employed	Rural
4970	Female	Oldage	Self-employed	Urban
4978	Female	Adultage	Govt_job	Rural
4980	Female	Oldage	Private	Urban

2907 rows × 4 columns

In [30]: P=M.loc[(N["Age1"]=="Oldage")|(N["Age1"]=="Adultage")]
P

### Out[30]:

	gender	Age1	work_type	Residence_type
2	Female	Adultage	Private	Urban
3	Female	Oldage	Self-employed	Rural
6	Female	Oldage	Private	Urban
7	Female	Oldage	Private	Urban
8	Female	Oldage	Private	Rural
4968	Female	Oldage	Private	Rural
4969	Female	Oldage	Self-employed	Rural
4970	Female	Oldage	Self-employed	Urban
4978	Female	Adultage	Govt_job	Rural
4980	Female	Oldage	Private	Urban

2048 rows × 4 columns

```
In [31]: P["Age1"].value_counts()
Out[31]: Oldage
                         1191
                          857
           Adultage
           Name: Age1, dtype: int64
In [32]: A=N.loc[(N["gender"]=="Female")&(N["work_type"]=="Private")&(N["Residence_type"]=
Out[32]:
                  gender
                            Age1 work_type Residence_type
               2 Female
                         Adultage
                                      Private
                                                      Urban
                 Female
                           Oldage
                                      Private
                                                       Urban
                  Female
                           Oldage
                                      Private
                                                      Urban
              10
                  Female
                           Oldage
                                      Private
                                                       Urban
              11
                  Female
                           Oldage
                                      Private
                                                       Urban
            4944
                  Female
                                      Private
                                                      Urban
                         Adultage
            4955 Female
                                      Private
                                                       Urban
                           Oldage
            4957
                  Female
                           Oldage
                                      Private
                                                       Urban
            4959
                  Female
                          Teenage
                                      Private
                                                       Urban
           4980 Female
                           Oldage
                                      Private
                                                       Urban
           858 rows × 4 columns
In [33]: del A["Age1"]
```

In [34]: A

Out[34]:

	gender	work_type	Residence_type
2	Female	Private	Urban
6	Female	Private	Urban
7	Female	Private	Urban
10	Female	Private	Urban
11	Female	Private	Urban
	•••		
4944	Female	Private	Urban
4955	Female	Private	Urban
4957	Female	Private	Urban
4959	Female	Private	Urban
4980	Female	Private	Urban

858 rows × 3 columns

# 6.Self employee peoples those are never smoked have brain stroke.

In [35]: data

Out[35]:

	gender	Age1	age	hypertension	heart_disease	ever_married	work_type	Residence_typ
0	Male	Oldage	67.0	0	1	Yes	Private	Urba
1	Male	Oldage	80.0	0	1	Yes	Private	Rura
2	Female	Adultage	49.0	0	0	Yes	Private	Urba
3	Female	Oldage	79.0	1	0	Yes	Self- employed	Rura
4	Male	Oldage	81.0	0	0	Yes	Private	Urba
4976	Male	Adultage	41.0	0	0	No	Private	Rura
4977	Male	Adultage	40.0	0	0	Yes	Private	Urba
4978	Female	Adultage	45.0	1	0	Yes	Govt_job	Rura
4979	Male	Adultage	40.0	0	0	Yes	Private	Rura
4980	Female	Oldage	80.0	1	0	Yes	Private	Urba
4981 rows × 12 columns								

localhost:8889/notebooks/Brain Stroke assignment1. ipynb.ipynb#Name:Tejaswini-Hirchand-Patil

```
In [36]: Glu=[]
    for x in data["avg_glucose_level"]:
        if x>0 and x<=75:
            Glu.append(0)
        elif x>75 and x<=150:
            Glu.append(1)
        else:
            Glu.append(2)
        print(Glu)</pre>
```

```
[2, 1, 2, 2, 2, 0, 1, 0, 1, 1, 1, 2, 2, 2, 2, 1, 2, 2, 2, 2, 1, 1, 1, 2, 2,
1, 2, 2, 1, 1, 2, 0, 1, 0, 1, 0, 1, 2, 2, 1, 1, 0, 1, 1, 2, 0, 2, 2, 2, 0, 0,
1, 1, 2, 1, 1, 0, 2, 1, 2, 1, 0, 2, 1, 1, 1, 1, 1, 1, 1, 0, 1, 1, 2, 0, 0, 0,
0, 2, 1, 2, 1, 1, 0, 2, 2, 1, 1, 0, 2, 1, 0, 1, 0, 1,
                                                      2, 1, 0, 1, 1, 0, 0, 2,
           2, 1, 2, 2, 2, 1, 2,
                                2, 2, 1, 1, 0, 0, 2,
                                                      2,
        2, 0, 2, 1, 1, 2, 1, 1, 1, 1, 2, 0, 0, 2, 1, 1, 1, 1, 1, 1, 2,
           2, 2, 1,
                                    1, 1, 1, 1, 1,
                                                         2, 0, 1, 2,
                     0,
                        2, 1,
                              1,
                                 1,
                                                   1,
                                                      1,
        0, 1, 2, 2, 1,
                                 0, 2, 2, 2, 1, 2, 1,
                        0, 1,
                              1,
                                                         1, 2, 2, 2, 1,
                  2,
                                 0,
            0, 1,
                     1,
                                    1, 1, 1, 1, 0,
                                                            2, 1, 0, 1,
                              2,
           0, 1, 1,
                              1,
                                 1,
                                   1, 1, 1, 2, 1, 1,
                                                            2, 1, 1, 1,
                                 0, 0, 1, 2, 0, 1, 1,
           0, 1, 1,
                    1, 1, 1,
                              2,
                                                         1, 1, 2, 2, 1,
           1, 1, 2, 1,
                           1,
                              1,
                                 2,
                                   0, 1, 1, 1, 0,
                                                      2,
                                                         1, 1, 0, 1,
           1, 2, 1, 0, 1, 1,
                              0, 1, 1, 1, 0, 0, 1, 1,
                                    1, 2, 1, 0, 1,
            1, 1, 1,
                     0,
                              2,
                                 1,
                                                      1,
                                                               1, 1,
                        1,
        0, 0, 2, 1, 1, 1, 1, 1,
                                 0, 1, 2, 0, 1, 2, 1,
                                                      2, 1, 1, 2, 1, 1,
                                 1, 1, 1, 1, 2, 0, 1,
           0, 0, 1, 1, 0, 1,
                              1,
                                                      1,
                                                         0, 1, 1, 1, 1,
           0, 0, 0, 1, 1, 1, 1, 0, 1, 1, 1, 1, 1, 1, 1,
                                                         0, 1, 2, 1, 1,
           1, 1, 1, 0, 1,
                              1,
                                 1, 1, 1, 1, 1, 0, 2,
                                                         1, 1, 1, 0, 0, 1,
                  1,
                                    1,
                                       2,
                                          1,
                                             0,
```

In [37]: data.insert(8,"Glucose\_level",Glu)
 data

### Out[37]:

	gender	Age1	age	hypertension	heart_disease	ever_married	work_type	Residence_typ
0	Male	Oldage	67.0	0	1	Yes	Private	Urba
1	Male	Oldage	80.0	0	1	Yes	Private	Rura
2	Female	Adultage	49.0	0	0	Yes	Private	Urba
3	Female	Oldage	79.0	1	0	Yes	Self- employed	Rura
4	Male	Oldage	81.0	0	0	Yes	Private	Urba
4976	Male	Adultage	41.0	0	0	No	Private	Rura
4977	Male	Adultage	40.0	0	0	Yes	Private	Urba
4978	Female	Adultage	45.0	1	0	Yes	Govt_job	Rura
4979	Male	Adultage	40.0	0	0	Yes	Private	Rura
4980	Female	Oldage	0.08	1	0	Yes	Private	Urba

4981 rows × 13 columns

In [38]: E=data.iloc[:,[6,8,11,12]]

### Out[38]:

	work_type	Glucose_level	smoking_status	stroke
0	Private	2	formerly smoked	1
1	Private	1	never smoked	1
2	Private	2	smokes	1
3	Self-employed	2	never smoked	1
4	Private	2	formerly smoked	1
4976	Private	0	formerly smoked	0
4977	Private	2	smokes	0
4978	Govt_job	1	smokes	0
4979	Private	1	smokes	0
4980	Private	1	never smoked	0

4981 rows × 4 columns

In [39]: F=E.loc[(E["work\_type"]=="Self-employed")&(E["smoking\_status"]=="never smoked")&()

Out[39]:

	work_type	Glucose_level	smoking_status	stroke
3	Self-employed	2	never smoked	1
12	Self-employed	2	never smoked	1
17	Self-employed	2	never smoked	1
18	Self-employed	2	never smoked	1
21	Self-employed	1	never smoked	1
26	Self-employed	2	never smoked	1
40	Self-employed	1	never smoked	1
43	Self-employed	1	never smoked	1
46	Self-employed	2	never smoked	1
56	Self-employed	0	never smoked	1
67	Self-employed	1	never smoked	1
75	Self-employed	0	never smoked	1
110	Self-employed	2	never smoked	1
119	Self-employed	0	never smoked	1
126	Self-employed	1	never smoked	1
128	Self-employed	1	never smoked	1
133	Self-employed	0	never smoked	1
139	Self-employed	1	never smoked	1
142	Self-employed	2	never smoked	1
162	Self-employed	0	never smoked	1
164	Self-employed	1	never smoked	1
165	Self-employed	1	never smoked	1
169	Self-employed	1	never smoked	1
176	Self-employed	1	never smoked	1
178	Self-employed	1	never smoked	1
190	Self-employed	1	never smoked	1
192	Self-employed	0	never smoked	1
4780	Self-employed	2	never smoked	1
4810	Self-employed	0	never smoked	1
4818	Self-employed	0	never smoked	1

### 7. Age categories having brain strokes

In [40]: data

Out	T 4 0 7	
( ) I I T	1 71 74 1	
Out	40	

	gender	Age1	age	hypertension	heart_disease	ever_married	work_type	Residence_typ
0	Male	Oldage	67.0	0	1	Yes	Private	Urba
1	Male	Oldage	80.0	0	1	Yes	Private	Rura
2	Female	Adultage	49.0	0	0	Yes	Private	Urba
3	Female	Oldage	79.0	1	0	Yes	Self- employed	Rura
4	Male	Oldage	81.0	0	0	Yes	Private	Urba
4976	Male	Adultage	41.0	0	0	No	Private	Rura
4977	Male	Adultage	40.0	0	0	Yes	Private	Urba
4978	Female	Adultage	45.0	1	0	Yes	Govt_job	Rura
4979	Male	Adultage	40.0	0	0	Yes	Private	Rura
4980	Female	Oldage	80.0	1	0	Yes	Private	Urba

4981 rows × 13 columns

In [41]: z=data.iloc[:,[1,12]]

### Out[41]:

	Age1	stroke
0	Oldage	1
1	Oldage	1
2	Adultage	1
3	Oldage	1
4	Oldage	1
4976	Adultage	0
4977	Adultage	0
4978	Adultage	0
4979	Adultage	0
4980	Oldage	0

4981 rows × 2 columns

```
In [50]: z1=z.loc[(z["stroke"]==1)]
z1
```

Out[50]:

	Age1	stroke
0	Oldage	1
1	Oldage	1
2	Adultage	1
3	Oldage	1
4	Oldage	1
	•••	
4815	Oldage	1
4816	Oldage	1
4817	Oldage	1
4818	Oldage	1
4819	Oldage	1

248 rows × 2 columns