

DATA SPECIALIZATION

```
In [1]: #Name : Shreya Sharma
#Roll no. : 46
#Sectin : 3B
#Date : 20/07/2024
```

```
In [11]: #Aim : To Perform Data specialization/statical description on data
```

```
In [1]: import pandas as pd
```

```
In [3]: import os
```

```
In [5]: os.getcwd()
```

Out[5]: 'C:\\Users\\pravi'

```
In [7]: os.chdir('C:\\Users\\pravi\\Desktop')
```

```
In [9]: df=pd.read_csv("framingham.csv")
```

```
In [13]: df.head()
```

Out[13]:

	male	age	education	currentSmoker	cigsPerDay	BPMeds	prevalentStroke	prevalentHyp	diabetes	totChol	sysBP	diaBP	BMI	heartRate	glucose	TenYearCHD
0	1	39	4.0	0	0.0	0.0	0	0	0	195.0	106.0	70.0	26.97	80.0	77.0	0
1	0	46	2.0	0	0.0	0.0	0	0	0	250.0	121.0	81.0	28.73	95.0	76.0	0
2	1	48	1.0	1	20.0	0.0	0	0	0	245.0	127.5	80.0	25.34	75.0	70.0	0
3	0	61	3.0	1	30.0	0.0	0	1	0	225.0	150.0	95.0	28.58	65.0	103.0	1
4	0	46	3.0	1	23.0	0.0	0	0	0	285.0	130.0	84.0	23.10	85.0	85.0	0

```
In [15]: df.head(100)
```

Out[15]:

	male	age	education	currentSmoker	cigsPerDay	BPMeds	prevalentStroke	prevalentHyp	diabetes	totChol	sysBP	diaBP	BMI	heartRate	glucose	TenYearCHD
0	1	39	4.0	0	0.0	0.0	0	0	0	195.0	106.0	70.0	26.97	80.0	77.0	0
1	0	46	2.0	0	0.0	0.0	0	0	0	250.0	121.0	81.0	28.73	95.0	76.0	0
2	1	48	1.0	1	20.0	0.0	0	0	0	245.0	127.5	80.0	25.34	75.0	70.0	0
3	0	61	3.0	1	30.0	0.0	0	1	0	225.0	150.0	95.0	28.58	65.0	103.0	1
4	0	46	3.0	1	23.0	0.0	0	0	0	285.0	130.0	84.0	23.10	85.0	85.0	0
...
95	0	65	3.0	0	0.0	0.0	0	0	0	193.0	123.0	76.5	29.33	60.0	96.0	0
96	0	63	4.0	1	20.0	0.0	0	0	1	239.0	134.0	80.0	26.64	88.0	126.0	0
97	0	40	2.0	0	0.0	0.0	0	0	0	205.0	100.0	60.0	NaN	60.0	72.0	1
98	0	56	1.0	0	0.0	0.0	0	1	0	296.0	180.0	90.0	23.72	75.0	120.0	0
99	0	56	1.0	1	15.0	0.0	0	0	0	269.0	121.0	75.0	22.36	50.0	66.0	0

100 rows × 16 columns

```
In [17]: df.tail()
```

Out[17]:

	male	age	education	currentSmoker	cigsPerDay	BPMeds	prevalentStroke	prevalentHyp	diabetes	totChol	sysBP	diaBP	BMI	heartRate	glucose	TenYearCHD
4233	1	50	1.0	1	1.0	0.0	0	1	0	313.0	179.0	92.0	25.97	66.0	86.0	1
4234	1	51	3.0	1	43.0	0.0	0	0	0	207.0	126.5	80.0	19.71	65.0	68.0	0
4235	0	48	2.0	1	20.0	NaN	0	0	0	248.0	131.0	72.0	22.00	84.0	86.0	0
4236	0	44	1.0	1	15.0	0.0	0	0	0	210.0	126.5	87.0	19.16	86.0	NaN	0
4237	0	52	2.0	0	0.0	0.0	0	0	0	269.0	133.5	83.0	21.47	80.0	107.0	0

```
In [19]: df.info()

<class 'pandas.core.frame.DataFrame'>
RangeIndex: 4238 entries, 0 to 4237
Data columns (total 16 columns):
#   Column              Non-Null Count  Dtype
---  -
0   male                 4238 non-null   int64
1   age                  4238 non-null   int64
2   education             4133 non-null   float64
3   currentSmoker        4238 non-null   int64
4   cigsPerDay            4209 non-null   float64
5   BPMeds                4185 non-null   float64
6   prevalentStroke       4238 non-null   int64
7   prevalentHyp          4238 non-null   int64
8   diabetes              4238 non-null   int64
9   totChol               4188 non-null   float64
10  sysBP                 4238 non-null   float64
11  diaBP                 4238 non-null   float64
12  BMI                   4219 non-null   float64
13  heartRate             4237 non-null   float64
14  glucose               3850 non-null   float64
15  TenYearCHD            4238 non-null   int64
dtypes: float64(9), int64(7)
memory usage: 529.9 KB
```

```
In [21]: df.shape
```

Out[21]: (4238, 16)

```
In [23]: df.size
```

Out[23]: 67808

```
In [25]: df.ndim
```

Out[25]: 2

```
In [27]: df.tail(10)
```

Out[27]:

	male	age	education	currentSmoker	cigsPerDay	BPMeds	prevalentStroke	prevalentHyp	diabetes	totChol	sysBP	diaBP	BMI	heartRate	glucose	TenYearCHD
4228	0	50	1.0	0	0.0	0.0	0	1	1	260.0	190.0	130.0	43.67	85.0	260.0	0
4229	0	51	3.0	1	20.0	0.0	0	1	0	251.0	140.0	80.0	25.60	75.0	NaN	0
4230	0	56	1.0	1	3.0	0.0	0	1	0	268.0	170.0	102.0	22.89	57.0	NaN	0
4231	1	58	3.0	0	0.0	0.0	0	1	0	187.0	141.0	81.0	24.96	80.0	81.0	0
4232	1	68	1.0	0	0.0	0.0	0	1	0	176.0	168.0	97.0	23.14	60.0	79.0	1
4233	1	50	1.0	1	1.0	0.0	0	1	0	313.0	179.0	92.0	25.97	66.0	86.0	1
4234	1	51	3.0	1	43.0	0.0	0	0	0	207.0	126.5	80.0	19.71	65.0	68.0	0
4235	0	48	2.0	1	20.0	NaN	0	0	0	248.0	131.0	72.0	22.00	84.0	86.0	0
4236	0	44	1.0	1	15.0	0.0	0	0	0	210.0	126.5	87.0	19.16	86.0	NaN	0
4237	0	52	2.0	0	0.0	0.0	0	0	0	269.0	133.5	83.0	21.47	80.0	107.0	0

```
In [29]: df.describe()
```

Out[29]:

	male	age	education	currentSmoker	cigsPerDay	BPMeds	prevalentStroke	prevalentHyp	diabetes	totChol	sysBP	diaBP	BMI	heartRate	glucose	TenYearCHD
count	4238.000000	4238.000000	4133.000000	4238.000000	4209.000000	4185.000000	4238.000000	4238.000000	4238.000000	4188.000000	4238.000000	4238.000000	4219.000000	4237.000000	3850.000000	4238.000000
mean	0.429212	49.584946	1.978950	0.494101	9.003089	0.029630	0.005899	0.310524	0.025720	236.721585	132.352407	82.893464	25.802008	75.878924	81.966753	0.151958
std	0.495022	8.572160	1.019791	0.500024	11.920094	0.169584	0.076587	0.462763	0.158316	44.590334	22.038097	11.910850	4.080111	12.026596	23.959998	0.359023
min	0.000000	32.000000	1.000000	0.000000	0.000000	0.000000	0.000000	0.000000	0.000000	107.000000	83.500000	48.000000	15.540000	44.000000	40.000000	0.000000
25%	0.000000	42.000000	1.000000	0.000000	0.000000	0.000000	0.000000	0.000000	0.000000	206.000000	117.000000	75.000000	23.070000	68.000000	71.000000	0.000000
50%	0.000000	49.000000	2.000000	0.000000	0.000000	0.000000	0.000000	0.000000	0.000000	234.000000	128.000000	82.000000	25.400000	75.000000	78.000000	0.000000
75%	1.000000	56.000000	3.000000	1.000000	20.000000	0.000000	0.000000	1.000000	0.000000	263.000000	144.000000	89.875000	28.040000	83.000000	87.000000	0.000000

max	1.000000	70.000000	4.000000	1.000000	70.000000	1.000000	1.000000	1.000000	1.000000	696.000000	295.000000	142.500000	56.800000	143.000000	394.000000	1.000000
-----	----------	-----------	----------	----------	-----------	----------	----------	----------	----------	------------	------------	------------	-----------	------------	------------	----------

In []: