SDAIA
الهيئة السعودية للبيانات والذكاء الاصطناعي
Saudi Data & AI Authority

أكاديمية طويق
TUWAIQ ACADEMY

HEART FAILURE DATASET

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DESCRIPTION

Heart failure is a common event caused by cardiovascular diseases (CVDs) and this dataset contains 12 features
that can be used to predict mortality by heart failure.

Most CVDs can be prevented by addressing behavioral risk factors such as tobacco use, unhealthy diet and obesity, physical inactivity, and harmful use of alcohol using population-wide strategies.

WHO IS IT USEFUL FOR?

- **Medical Researchers**
- **Hospitals**

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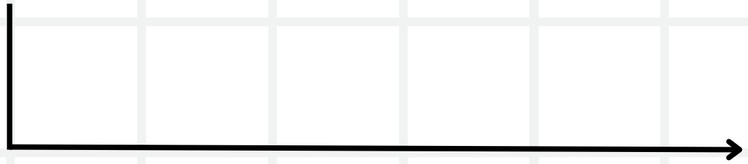
SAMPLE OF THE DATASET

	age	anaemia	creatinine_phosphokinase	diabetes	ejection_fraction	high_blood_pressure	platelets	serum_creatinine	serum_sodium	sex	smoking	time	DEATH_EVENT
0	75.0	0	582	0	20	1	265000.00	1.9	130	1	0	4	1
1	55.0	0	7861	0	38	0	263358.03	1.1	136	1	0	6	1
2	65.0	0	146	0	20	0	162000.00	1.3	129	1	1	7	1
3	50.0	1	111	0	20	0	210000.00	1.9	137	1	0	7	1
4	65.0	1	160	1	20	0	327000.00	2.7	116	0	0	8	1
...	...	...	...	...	...	...	...	...	...	...	...	...	...
294	62.0	0	61	1	38	1	155000.00	1.1	143	1	1	270	0
295	55.0	0	1820	0	38	0	270000.00	1.2	139	0	0	271	0
296	45.0	0	2060	1	60	0	742000.00	0.8	138	0	0	278	0
297	45.0	0	2413	0	38	0	140000.00	1.4	140	1	1	280	0
298	50.0	0	196	0	45	0	395000.00	1.6	136	1	1	285	0
			100-1300		55-70		150,000 400,000	0.7 - 1.3	135-145				

EXPLORATORY DATA ANALYSIS

- Number of columns: 13
- Number of rows: 299
- The dataset does not contain any duplicate data.
- There are no null values in the dateset.



```
age                         0
anaemia                     0
creatinine_phosphokinase    0
diabetes                    0
ejection_fraction           0
high_blood_pressure         0
platelets                   0
serum_creatinine            0
serum_sodium                0
sex                         0
smoking                     0
time                        0
DEATH_EVENT                 0
```

FEATURES & LABEL

Features:

age - anemia - creatinine_phosphokinase - diabetes - ejection_fraction - high_ blood_pressure - platelets - serum_creatinine - serum_sodium - sex - smoking - time

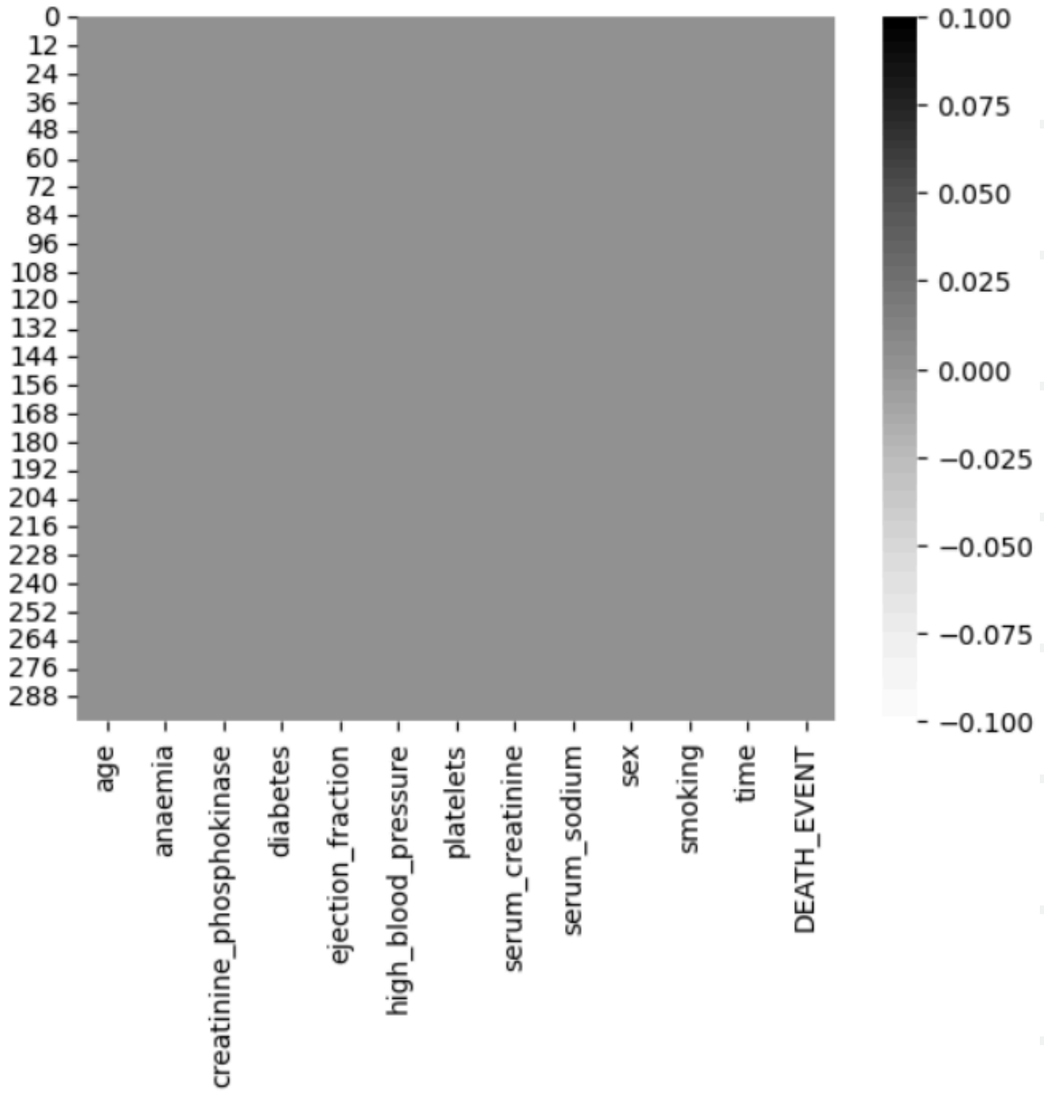
Label:

DEATH_EVENT

DESCRIPTIVE STATISTICS

	age	anaemia	creatinine_phosphokinase	diabetes	ejection_fraction	high_blood_pressure	platelets	serum_creatinine	serum_sodium	sex	smoking	time	DEATH_EVENT
count	299.000000	299.000000	299.000000	299.000000	299.000000	299.000000	299.000000	299.00000	299.000000	299.000000	299.00000	299.000000	299.00000
mean	60.833893	0.431438	581.839465	0.418060	38.083612	0.351171	263358.029264	1.39388	136.625418	0.648829	0.32107	130.260870	0.32107
std	11.894809	0.496107	970.287881	0.494067	11.834841	0.478136	97804.236869	1.03451	4.412477	0.478136	0.46767	77.614208	0.46767
min	40.000000	0.000000	23.000000	0.000000	14.000000	0.000000	25100.000000	0.50000	113.000000	0.000000	0.00000	4.000000	0.00000
25%	51.000000	0.000000	116.500000	0.000000	30.000000	0.000000	212500.000000	0.90000	134.000000	0.000000	0.00000	73.000000	0.00000
50%	60.000000	0.000000	250.000000	0.000000	38.000000	0.000000	262000.000000	1.10000	137.000000	1.000000	0.00000	115.000000	0.00000
75%	70.000000	1.000000	582.000000	1.000000	45.000000	1.000000	303500.000000	1.40000	140.000000	1.000000	1.00000	203.000000	1.00000
max	95.000000	1.000000	7861.000000	1.000000	80.000000	1.000000	850000.000000	9.40000	148.000000	1.000000	1.00000	285.000000	1.00000

NULL VALUES


0
12
24
36
48
60
72
84
96
108
120
132
144
156
168
180
192
204
216
228
240
252
264
276
288
0.100
0.075
0.050
0.025
0.000
−0.025
−0.050
−0.075
−0.100
age
anaemia
creatinine_phosphokinase
diabetes
ejection_fraction
high_blood_pressure
platelets
serum_creatinine
serum_sodium
sex
smoking
time
DEATH_EVENT

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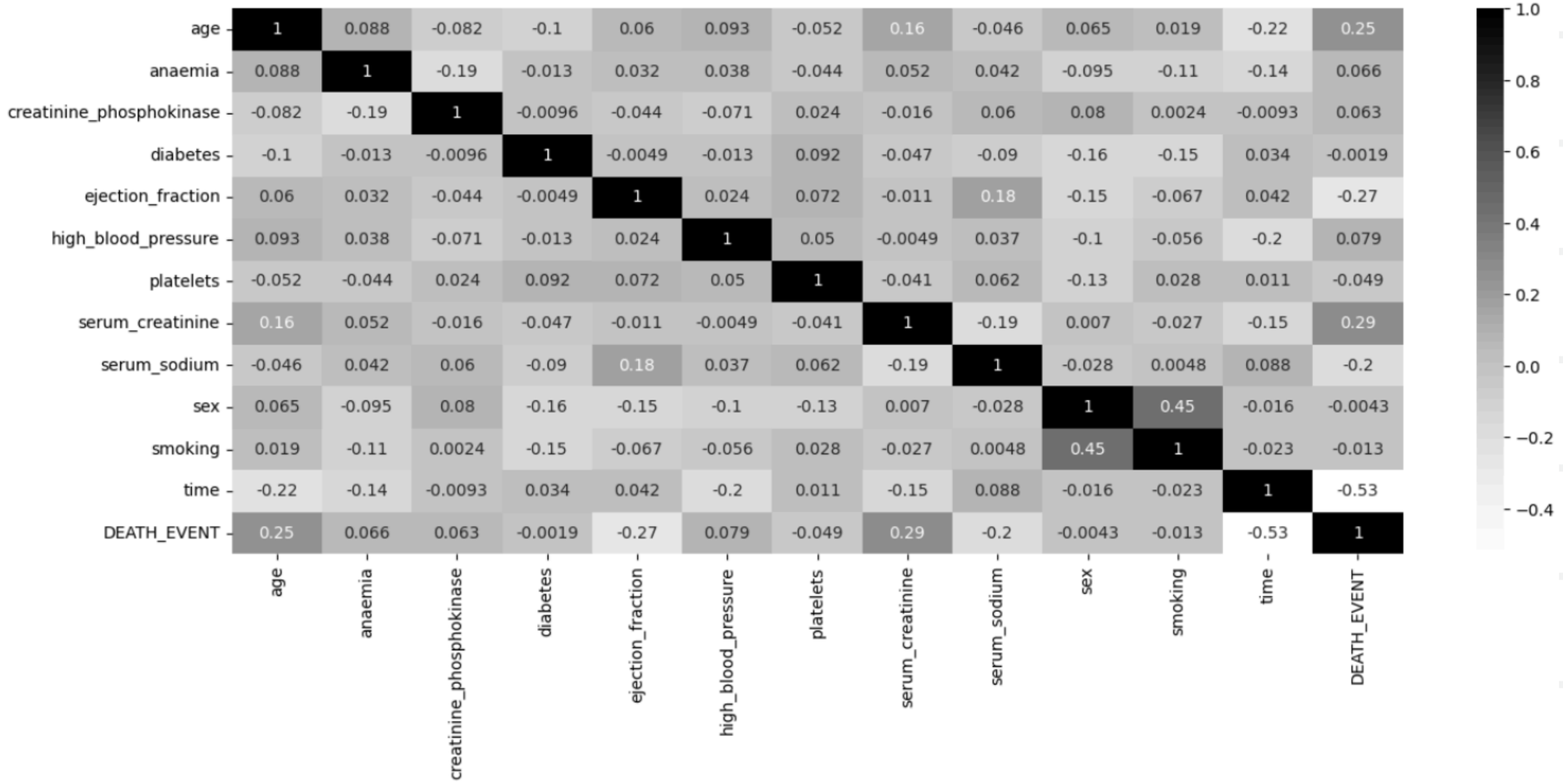
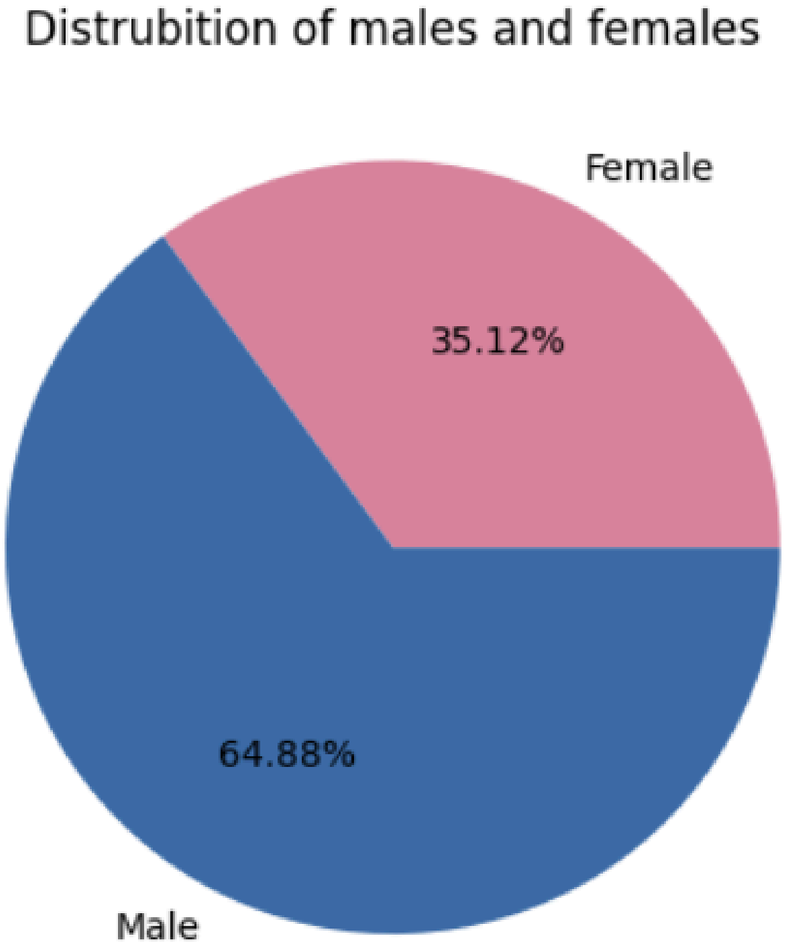
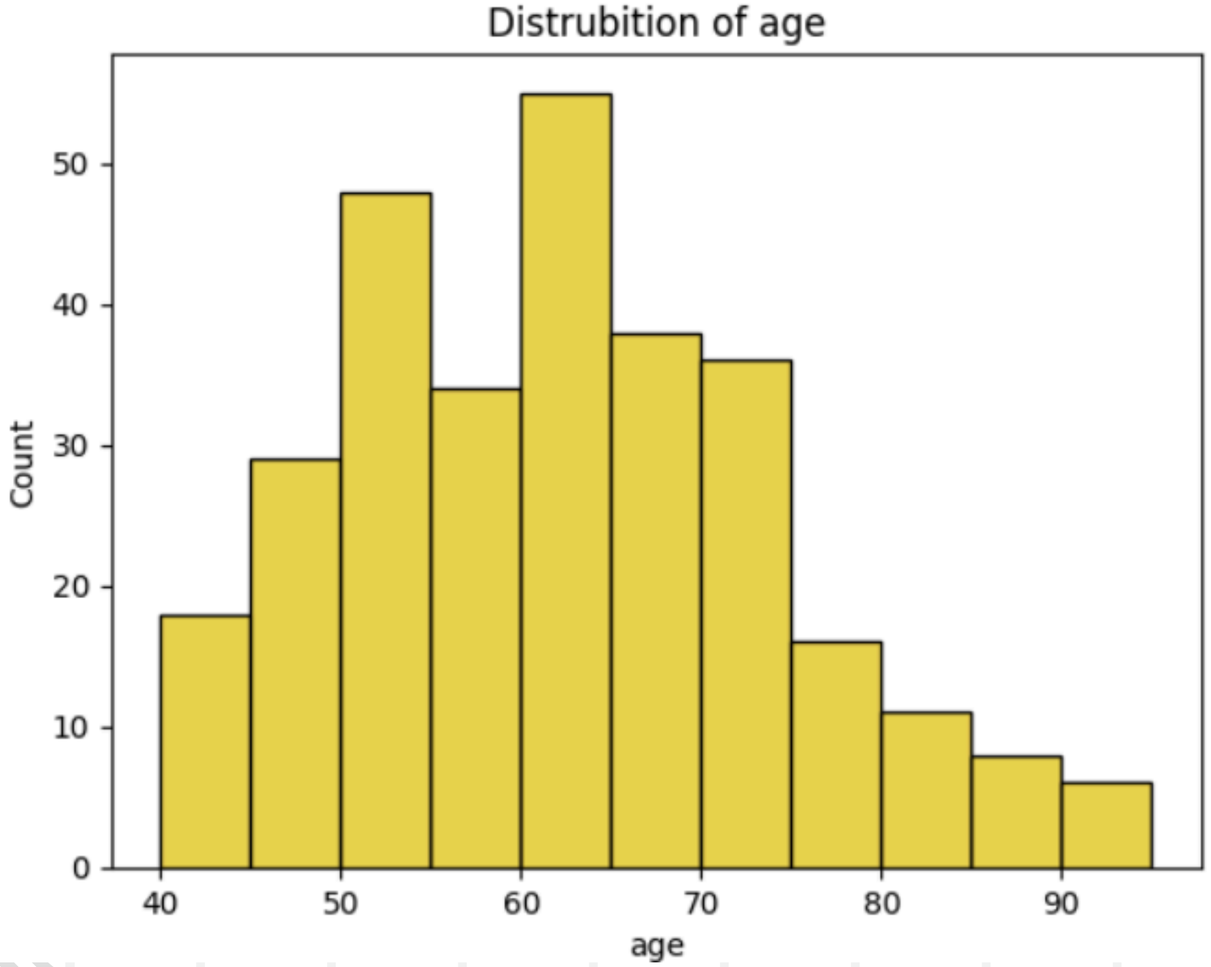
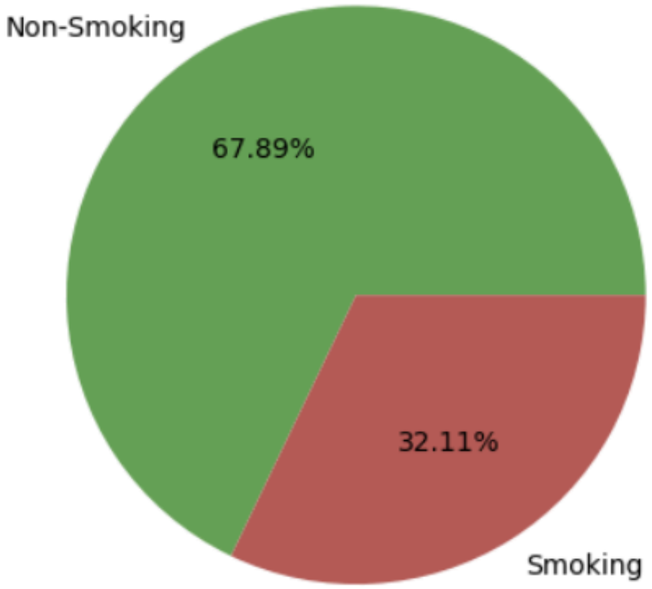
CORRELATION MATRIX



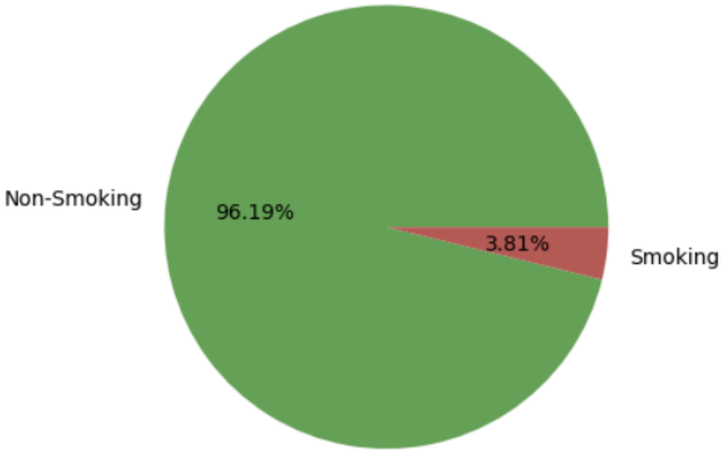

Distrubition of males and females
Female
35.12%
64.88%
Male


Distrubition of age
Count
0
10
20
30
40
50
40
50
60
70
80
90
age

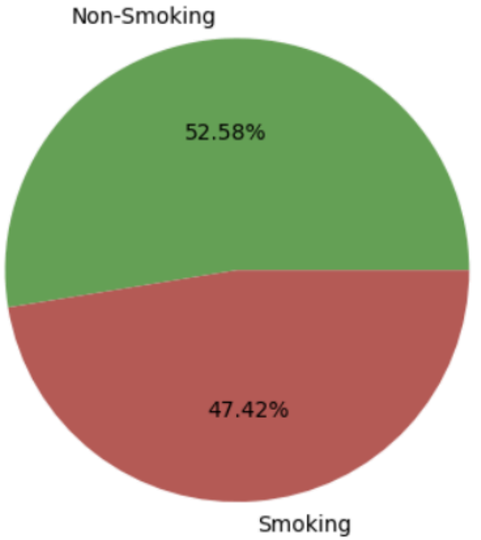
Distrubition of smokers and non-smokers

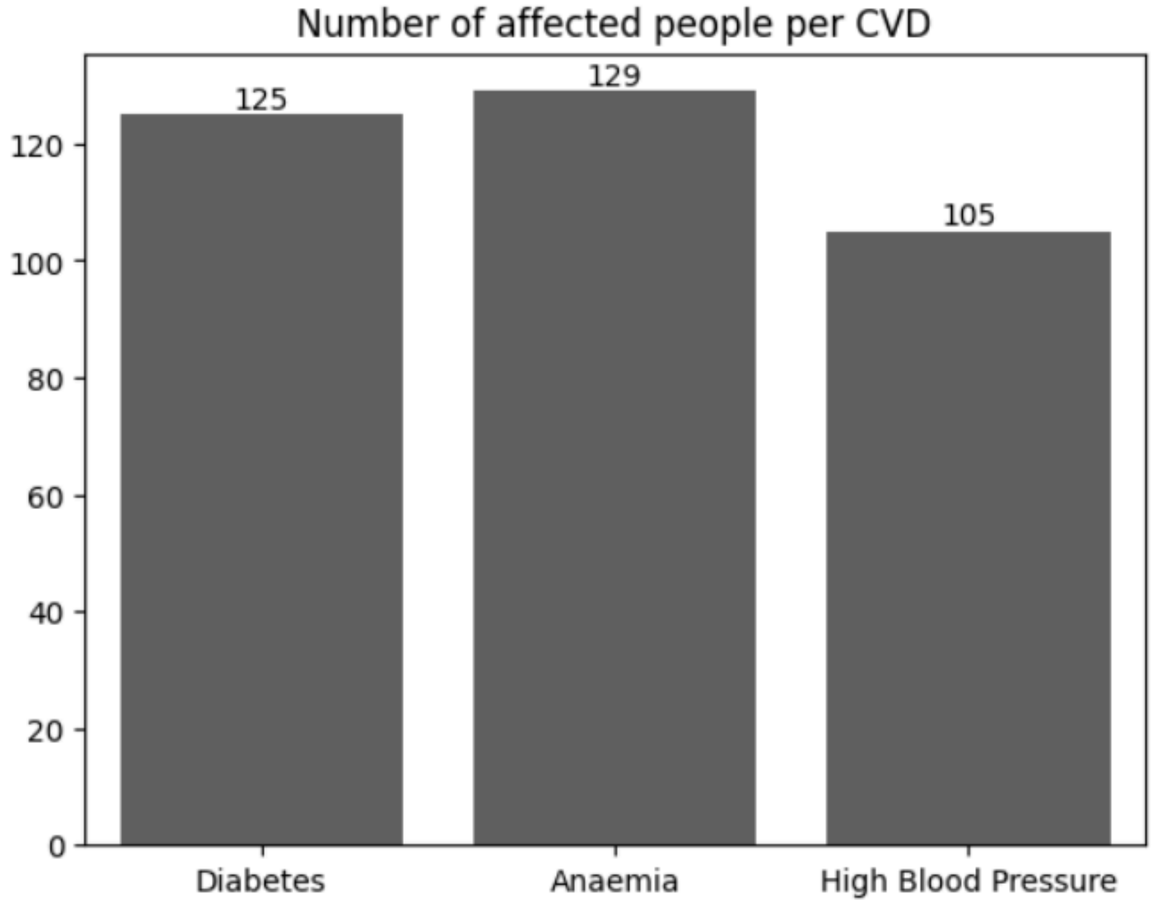


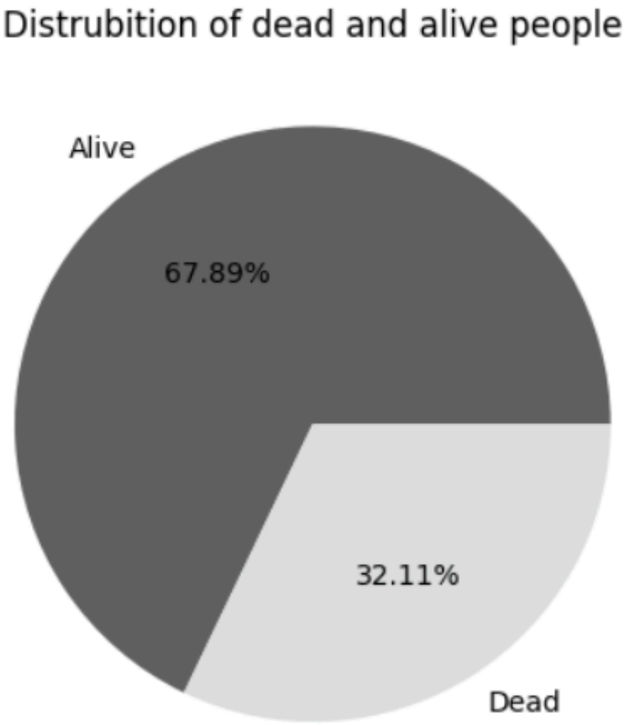
Distrubition of female smokers and non-smokers



Distrubition of male smokers and non-smokers




Number of affected people per CVD
125
129
105
120
100
80
60
40
20
0
Diabetes
Anaemia
High Blood Pressure


Distrubition of dead and alive people
Alive
67.89%
32.11%
Dead

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THANK YOU FOR LISTENING