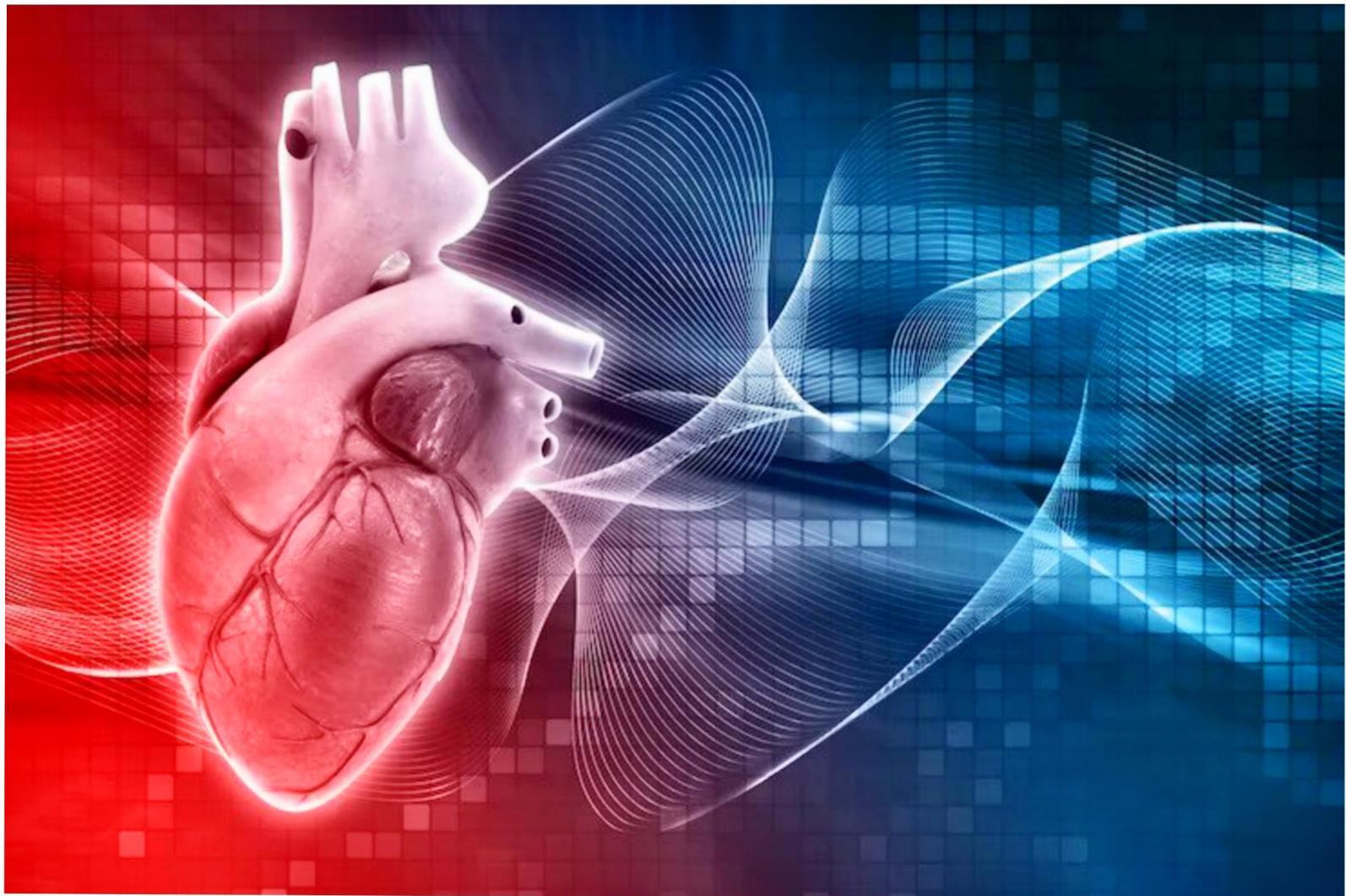


HEART DISEASE



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HEART DISEASES

Introduction:-

The cardiovascular system is a crucial system in the human body that is responsible for the circulation of blood throughout the body. Consisting of the heart, blood vessels and blood, this system cardiovascular works together to, also known as the deliver oxygen and nutrients circulatory system, is responsible for transporting blood to the body's cells, oxygen, as well as remove waste products.

Overview:-

The human heart is a vital organ within the human body. It is a vital organ in the cardiovascular system,

responsible for pumping blood throughout the body. It is roughly the size of a fist and located slightly left of cardiovascular system that is responsible for pumping blood throughout the body.

Purpose :-

Heart disease is a broad term used to describe a range of conditions that affect the heart's structure and function.

Types of heart disease :-

1) coronary artery disease :-

Coronary artery disease (CAD) is the coronary most common artery disease is one of type of heart disease and occurs when the blood vessels that supply oxygen and nutrients

to the heart become narrowed the most common types of heart disease and occurs when the blood vessels that supply or blocked

Heart Failure:-

Heart Failure is a condition in which the heart is unable to pump blood effectively to meet the body's needs. This can be caused by a variety of factors, including damage to the heart muscle

Arrhythmias:-

Arrhythmias are a common type of heart disease that refers to irregular heart beats. The heart normally beats in a steady rhythm, but in cases of arrhythmias, the heart may beat too fast, too slow.

Literature survey:

Life style choices if style choices play a crucial role in determining an individual play a significant role in determining heart health. Several heart health. Unhealthy habits such risk factors as smoking, such, excessive drinking , as poor diet , lack of physical activity , poor diet, and lack of physical activity

Theoretical analysis:

Making positive lifestyle choices can help prevent heart, making healthy lifestyle choices can help prevent disease and heart disease improve overall heart health . Eng . Eating gaging in regular physical activity , such as brisk walking;

ADVANTAGES AND DISADVANTAGES

1) Advantages of preventing heart diseases

1) Life style change for heart disease prevention:

Heart disease is a leading cause of death worldwide, but there are many life changes that can help prevent it.

2) Medical interventions for heart disease prevention

Heart disease is one of the leading causes of death worldwide, making it crucial to focus on preventive measures to reduce the risk of developing this condition.

2) Disadvantages of heart disease

1) Medications for heart disease:

Heart disease is a serious health condition that affects many people. Medications can help

treat it, but they can also have side effects like Dizziness or Nausea.

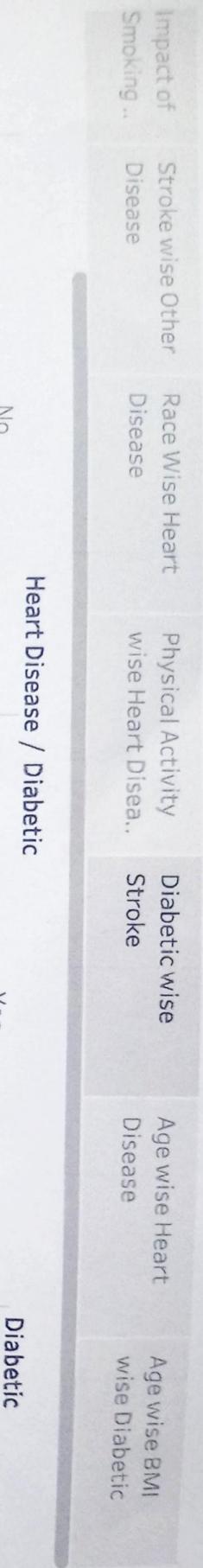
2) Surgical treatments for heart disease:

Sometimes, people with heart problems need to have surgery to help fix them. But surgeries can have some problems too. They can cause infections, bleeding, or hurt other parts of the body.

Conclusion:

Preventing heart disease is very important for staying healthy. By exercising, eating healthy, and not smoking, people can lower their chances of getting heart problems like heart attacks or high blood pressure.

Heart Disease Story



1. This visualization is a circle chart.
2. This circle chart representss about diabetic wise stroke
3. Here highest range 3,342 people are suffered from stroke due to diabetise

Count of Stroke

1500

500

0

1000

2000

2500

3000

3500

No

No, borderline di..

Yes

Yes (during ..)

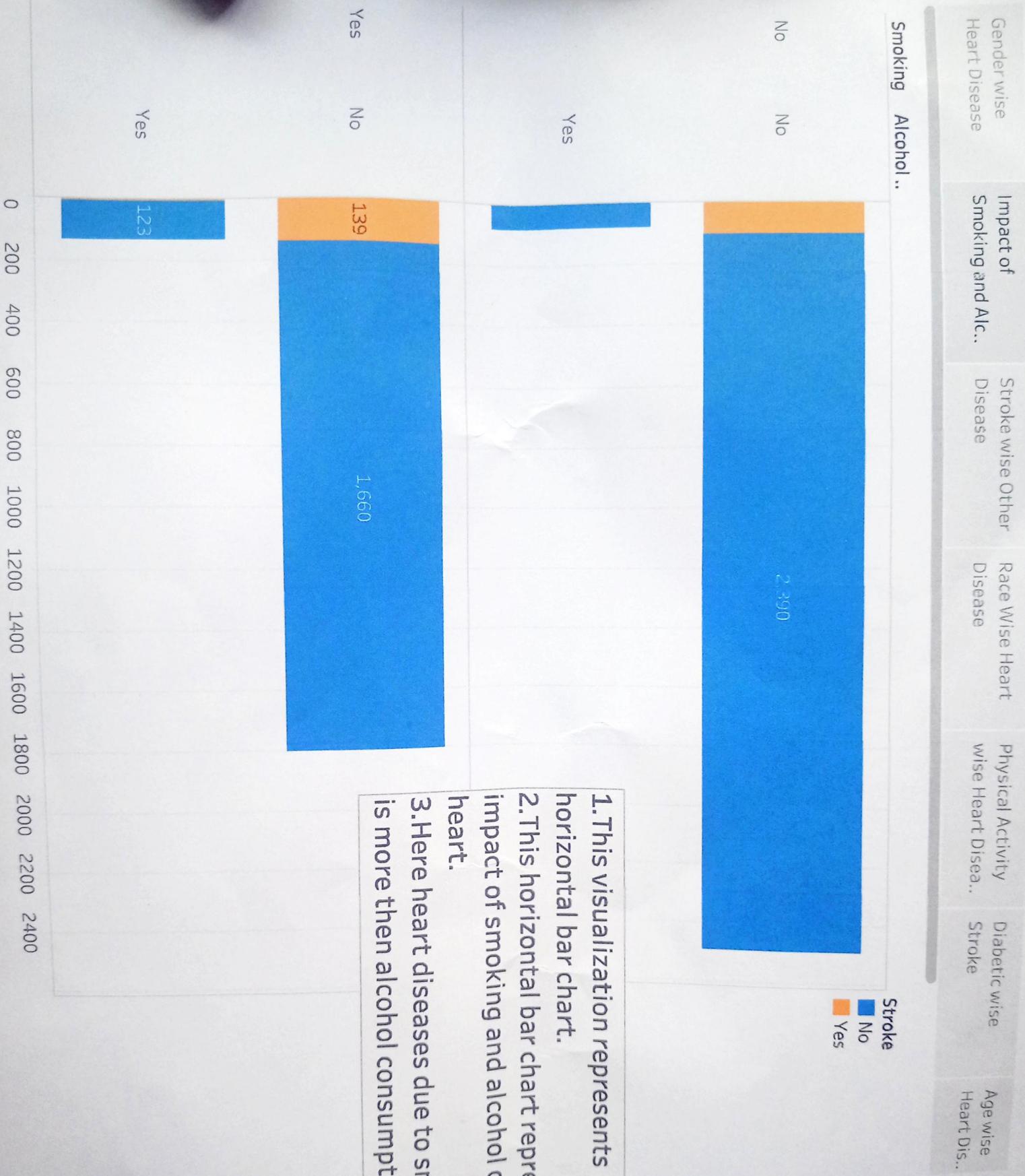
No

No, borderli..

Yes

Yes (during ..)

Heart Disease Story



1. This visualization represents horizontal bar chart.

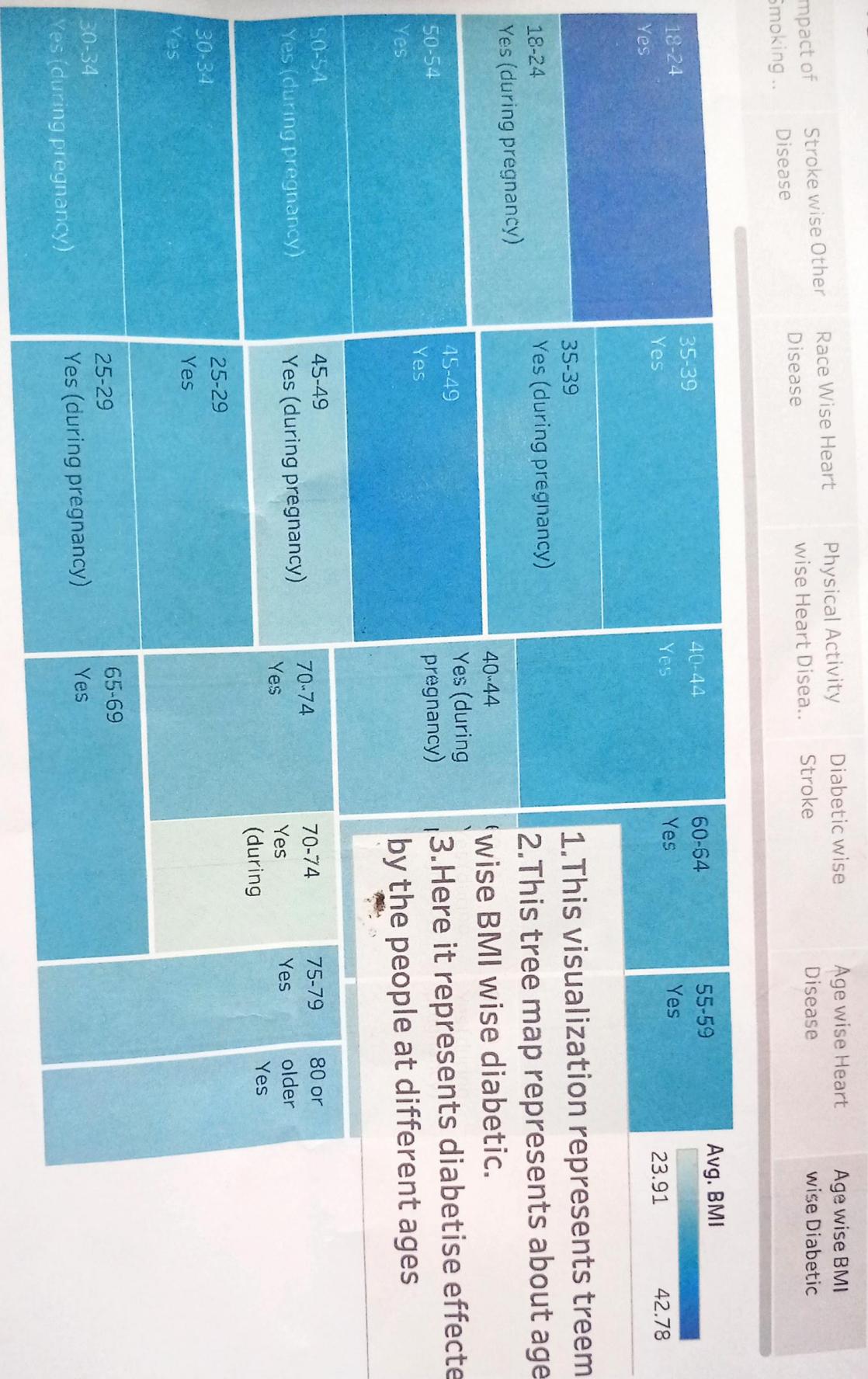
2. This horizontal bar chart represents the impact of smoking and alcohol on heart disease.

3. Here heart diseases due to smoking is more than alcohol consumption.

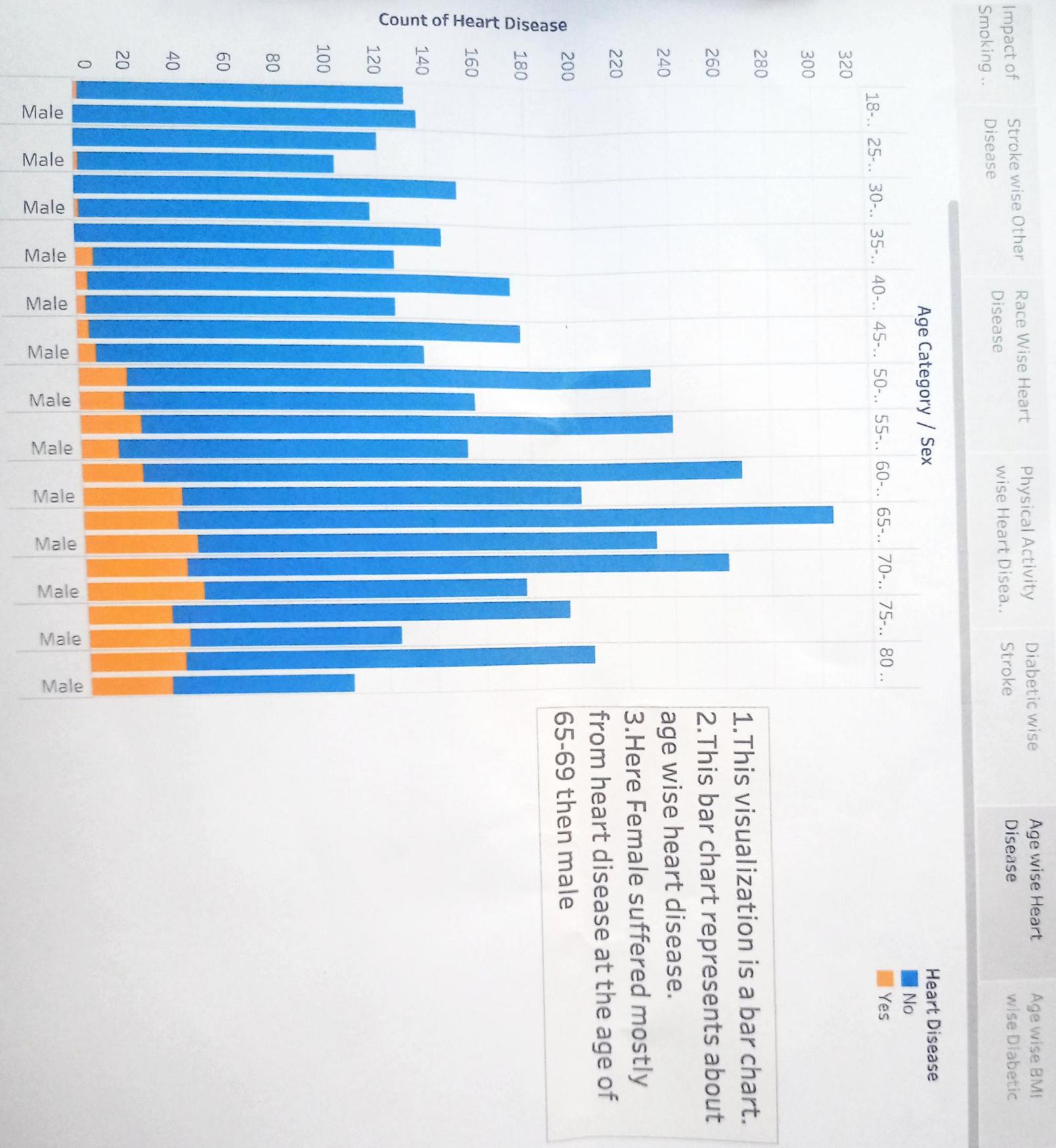
Heart Disease Story



Heart Disease Story

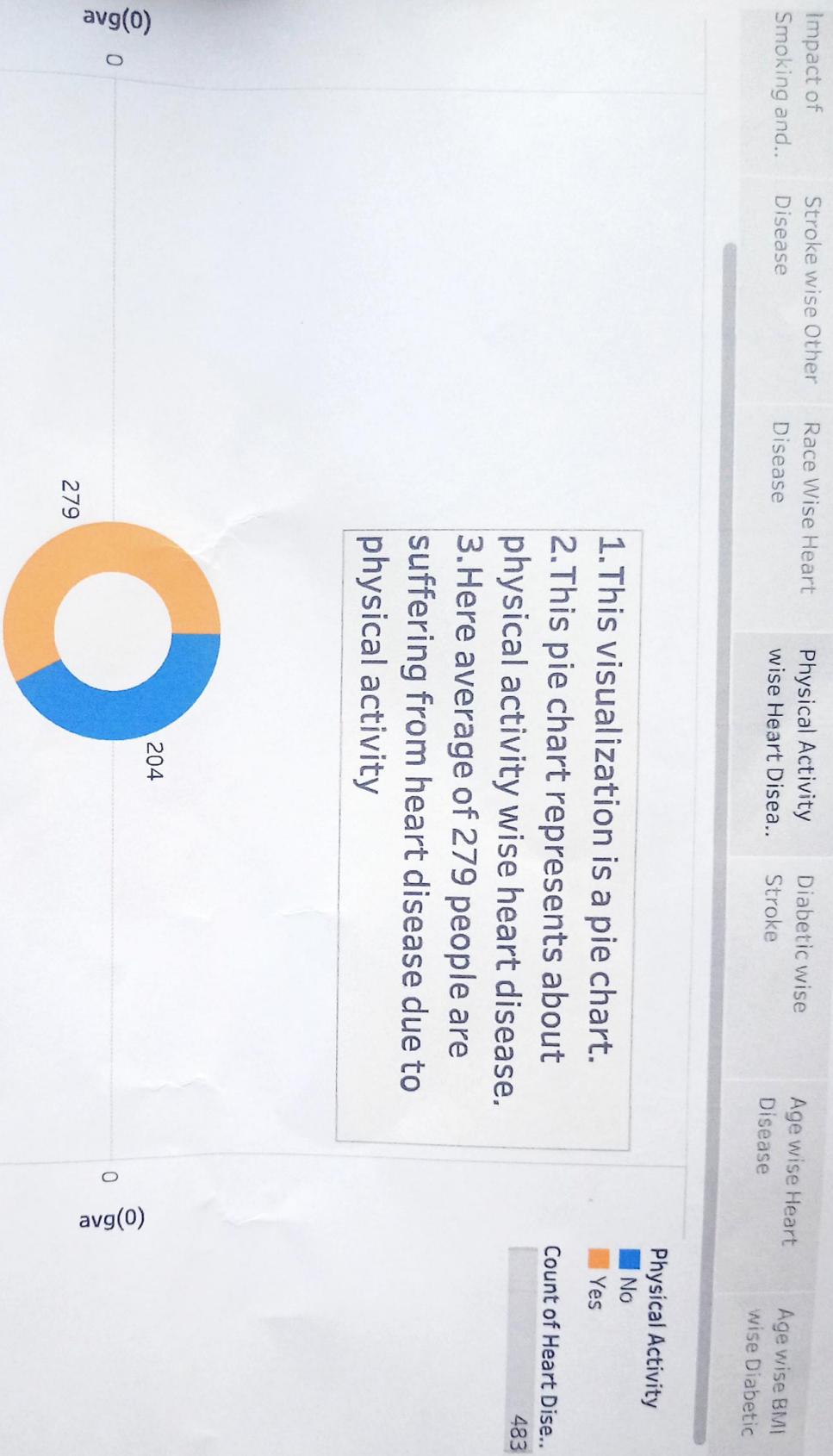


Heart Disease Story

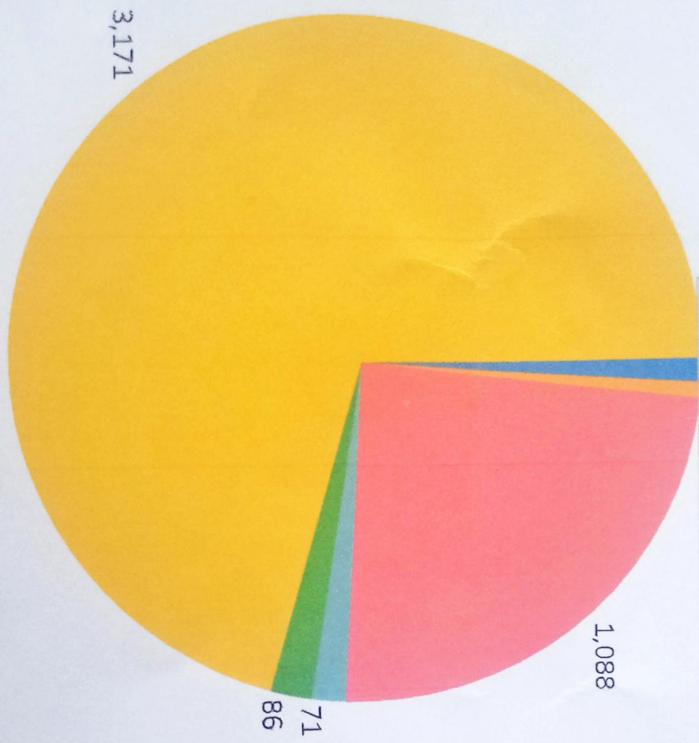


1. This visualization is a bar chart.
 2. This bar chart represents about age wise heart disease.
 3. Here Female suffered mostly from heart disease at the age of 65-69 then male

Heart Disease Story



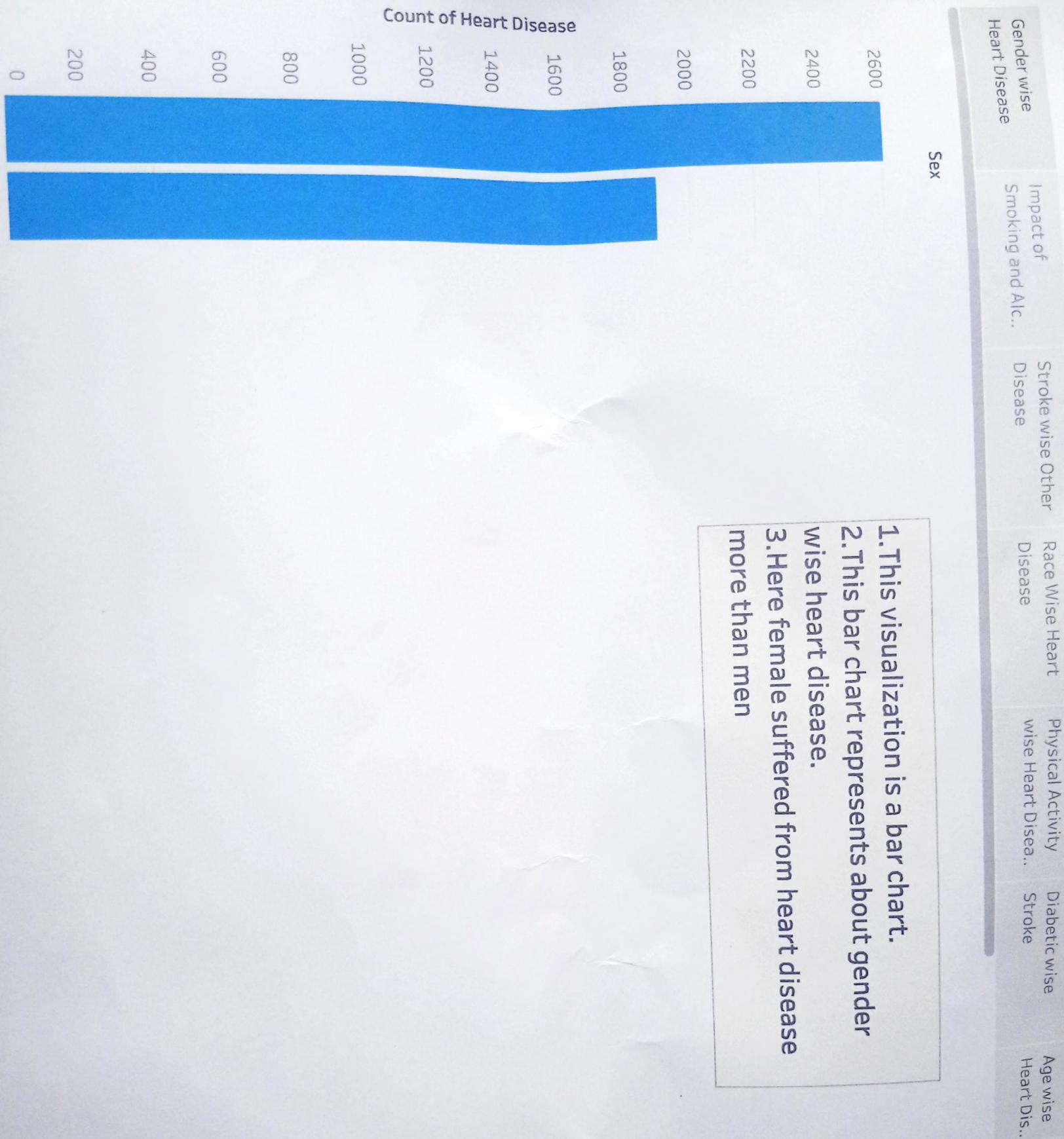
Heart Disease Story



1. This visualization represents pie chart.
2. This pie chart represents race wise heart disease.
3. Here white race people suffered mostly from heart disease.

Race	Count of Heart Disease
American Indian/Asian	1
Black	1,088
Hispanic	71
Other	86
White	3,171

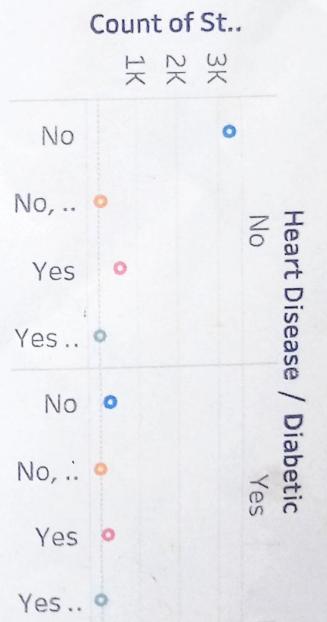
Heart Disease Story



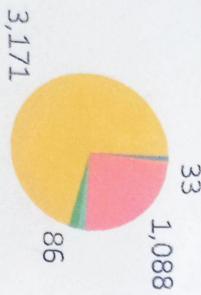
Gender vs Heart disease



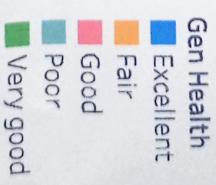
Diabetic vs Stroke



Race wise Heart Disease



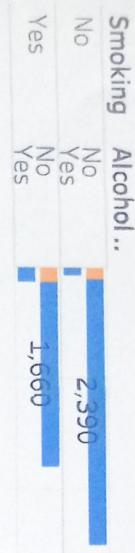
General Health vs Heart Disease



Next

Impact of Smoking and

Alcohol on Heart

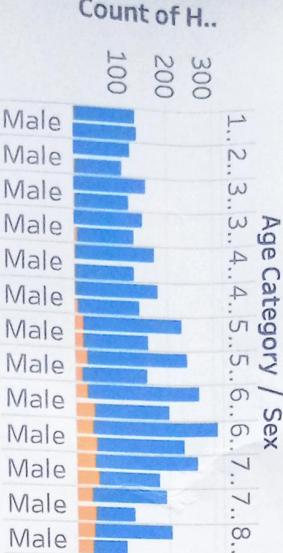


People Got Stroke

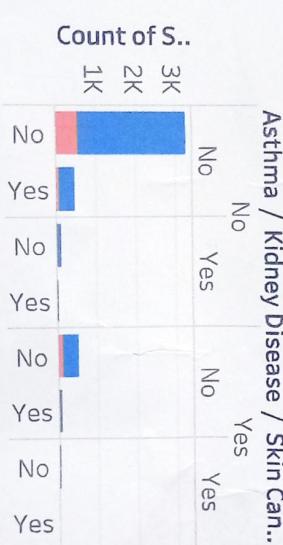
Suffering From Diabetes And Heart Disease



Age vs Heart disease



Stroke vs Other disease



Stroke
No
Yes

Age Category
25-29
30-34
35-39
40-44
45-49
50-54
55-59
60-64
65-69
70-74
75-79
80 or older

Heart Disease
No
Yes

Diabetic
No
No, borderline di..
Yes
Yes (during preg..)

[Previous](#)

Heart Disease Analysis:

Heart disease

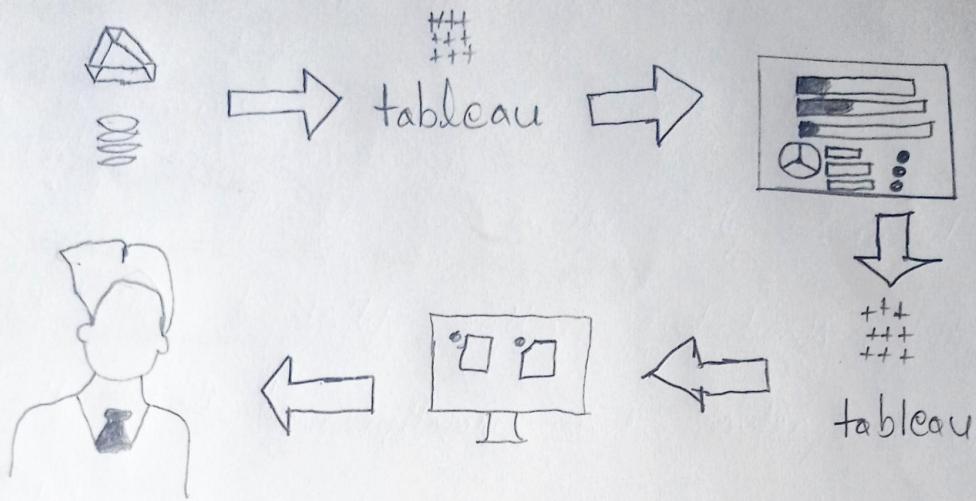
describe a range of conditions

that effect the heart . Heart diseases include blood vessel beats (arrhythmias), Disease of the heart muscle , heart valve disease.

According to the national heart, lung and blood institute in USA , the most important factors in the development of cardiovascular disease in human are obesity , sedentary lifestyle and smoking.

In this heart disease analysis project we are trying , to analyze the Heart Diseases related data and be able to extract some insights from that data using some tools . To extract the insights from the data and put the data in the form of visualizations , Dashboards and story we employed a tabular tool .

Technical Architecture :-



Project Flow :-

To accomplish this, the listed below activities has to be done

- Define Problem / Problem understanding
- Specify the business problem
- Literature Survey
- Business requirements
- Social & Business Impact.

- Data collection and extraction from Database

- Collect the data set

- Storing data in DB

- Perform SQL operations

- Connect DB with Tableau

- Data Preparation

- Prepare the data for visualizations

- Data visualization

- No. of unique visualizations

- Dashboard

- Responsive and design of Dashboard

- Story

- No. of steps of a story

- Performance Testing

- Amount of Data Rendered to DB

- Utilization of data filters

- No. of calculation field

- No. of visualizations / graphs.

- Web Integration

- Dash board and story embed with UI with Flask

- Project Demonstration and Documentation.

- Record explantion video project end-to-end solution

Procedure:-

Mile stone 1:- Define problem / Problem understanding

Activity 1:- Specify the business problem

According to the national heart, lung and blood institute in USA, the most important factors in the development of cardiovascular disease in humans are obesity, sedentary lifestyle and smoking.

Activity 2:- Business requirement.

The health care industry produce a huge amount of data. This data is not always made use to the full extent and is often underutilized. Using this huge amount of data, a disease can be selected, predicted or even cured. this business requirement analyzing the heart disease in world include identifying areas for improvement making data driven decisions, comparing to the current situation

Activity 3:- Literature survey.

A literature survey for the heart disease analysis would involve researching and reviewing previous studies, articles and reports on the topic. The world include information of the methods as techniques used for analysing heart disease, as well as the results and conclusions of those studies.

comprehensive literature survey should include peer-reviewed journals, scientific database (e.g. PubMed, Scopus), conference proceedings, and authoritative sources in the field of cardiovascular medicine. The survey should encompass a range of studies, including clinic trials, observational studies, systematic reviews, and meta analysis. To provide a comprehensive overview of the current

Activity 4: Social & Business Impact

Social impact - Analyzing heart disease has profound social impacts, ranging from individual-level health outcomes to community empowerment and public health initiatives. By promoting awareness, prevention, equitable health care access, and research advancements, heart disease analysis plays a crucial role in improving the well-being of individuals and society as a whole. Business Impact - Analyzing heart disease has substantial business impact across various sectors.

Mile stone 2:- Data collection and extraction from Data base

Data collection is the process of gathering and measuring information on variables of interest, in an established systematic fashion that enables one to answer stated research questions, test hypotheses, evaluate outcomes and generate insights from the data.

Activity 1:- Downloading the dataset

The data set will be downloaded using the link provided.

activity 1.1:- Understand the data

Data contains all the meta information regarding the columns described of the dataset.

1. Heart disease - Target trait

2. BMI - A value that allows you to assess the degree of correspondence between a person's mass and his height, and thereby directly judge whether the mass is insufficient, normal or excessive. It is important in determining the indications for the need for treatment.

4. Alcohol drinking - alcohol causes not only temporary disturbances in the functioning of the heart, but also permanent ones. Heart pain after alcohol is not only the health problem associated with alcohol consumption.
5. Stroke - Ischemic stroke occurs not only temporary disturbance in the functioning of the heart, but also permanent ones as a result of which the blood flow in the arteries is disturbed and the blood supply to the brain is reduced.
6. Physical health - how many days in a month did you feel poor physical health
7. Mental health: How many days in a month did you feel mental health
8. Difficulting - Difficulty climbing stairs
9. Sex - gender of a person
10. Age category - age category of the subject
11. Race - Race is a complex social construct that categorizes people into distinct groups based on certain physical and genetic characteristics.

12. Diabetic - Person suffering from diabetes
 13. Physical Activity - Adults who reported doing physical activity or exercise during the past 30 days other than their regular job
 14. General Health - How being
 15. Sleep time - Number of hours of sleep
 16. Asthma - Asthma is a chronic respiratory condition due to breathing issue
 17. Kidney Disease - Disease related to kidney
 18. Skin Cancer - People suffering from skin cancer
- Activity 2:- Storing Data in DB and perform SQL operations
Here, we save and store the data and in the database and have to perform SQL operations
- Activity 3:-
- Connect DB with tableau
- Here, we connect data base with tableau and when we open the tableau will be having a data set ready and the data will be prepared for visualization.

Milestone 3 :- Data preparation

Activity 1:- Prepare the data for visualization.

Preparing the data for visualization involves cleaning the data to remove irrelevant or missing data, transforming the data into a format that can be easily visualized, exploring the data to identify patterns and trends, filtering the data for visualization software, and ensuring the data is accurate and complete. This process helps to make the data easily understandable and ready for creating visualizations to gain insights into the performance and efficiency.

Milestone 4:- Data visualization

Data visualization is the process of creating graphical representation of data to help people understand and explore the information. The goal of data visualization is to make complex data sets more accessible, intuitive and easier to interpret.

Activity 1 :- No of unique visualizations

The number of unique visualizations that can be created with a given data set. Some common types of visualizations that can be used to analyze the performance and efficiency of banks include bars charts, line charts, heatmaps, scatter plots, pie charts etc. These visualizations can be used to compare performance, track changes over time, show distribution, and relationships between variables, breakdown of revenue and customers, demographics, workload, resource allocation and location of banks.