Project Title: **Visualizing and Predicting Heart Diseases with an Interactive Dashboard** **Team ID:** PNT2022TMID41082

Project Design Phase-I - Solution

1.CUSTOMER SEGMENT(S)

CS

- Senior citizens
- Hospitals
- Pharmaceutical agencies
- Smokers
- Alcoholics
- Diabetes patients
- Hypercholesterolemia patients
- Hypertension patients
- Thrombosis patients
- Obese persons
- Peripheral artery disease patients
- Angina patients

6. CUSTOMER CONSTRAINTS

CC

- Instant network connectivity
- Presence of good-condition communication devices like smartphones and laptops
- Financial constraints to consult specialists
- Lack of awareness about heart disease
- Complex and expensive scanning methodologies
- Psychological problems
- Lack of hope in treatment

5. AVAILABLE SOLUTIONS

AS

- Manual data visualization and prediction are very tedious
- Consult doctors (heart specialists), but it requires financial stability
- Quit smoking
- Restrain from alcohol
- Practice a healthy lifestyle with daily exercises and a nutritious diet plan
- Take cholesterol tests periodically

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2. JOBS-TO-BE-DONE / PROBLEMS

J&P

- The data used for prediction should be accurate and reliable.
- If data is skewed, then the prediction is also skewed
- Predictions should be done based on various metrics such as blood pressure, cholesterol levels, heartbeat rates, etc. that require complex integration
- Risk of lives depends on further medical support
- Timely alerts help in the prevention of the sudden onset of cardiac arrests

9. PROBLEM ROOT CAUSE

RC

- Difficulty in predicting heart disease at earlier stages
- Lack of awareness about physical fitness
- Genetic problems
- Lifestyle and eating habits
- A buildup of fatty plaques in the arteries is the most common cause of coronary artery disease.
- Obesity
- Alcohol and Smoking habits
- Stress, anxiety, depression and psychological problems

7. BEHAVIOUR

BE

- Look up on the internet to find answers
- Visit healthcare specialists
- Take advice from friends and family
- Physical activity helps to lower the risk of heart disease.
- Adopting a healthy diet can help in improving blood pressure and cholesterol and also reduces the risk of diabetes.
- Reduction of intake of alcohol and cigarettes
- Get quality sleep
- Prioritizing mental peace
- Develop unwanted mental trauma and anxiety about the aftermath of disease onset
- Falling into wrong assumptions and choosing the instant solutions that have worse side effects

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3. TRIGGERS

- Insufficient ways to handle huge amounts of datasets
- Lives depending on medical support
- Symptoms such as chest pain, shortness of breath, etc.
- Lifestyle modifications
- Need to search for heart specialist at affordable price
- Need to apply for health insurance
- Anxiety and destructive curiosity
- Others getting treated due to earlier detection

4. EMOTIONS: BEFORE / AFTER

Before

- Fear of being attacked by diseases that don't have improved treatments
- Confusion and lack of clarity about one's health conditions
- The anxiety of being hospitalized and the financial stress

After

- Clarity about the disease and its severity
- Peace of mind due to earlier predictions
- Financial stress relief

10. YOUR SOLUTION

- The data is visualized with the aid of the IBM Cognos Analytics Tool for providing better insight into patients' health so that doctors could make better decisions
- With the notable technology of AI/ML and the given various metrics, heart diseases are predicted at an earlier stage and the same is displayed to the user in an interactive dashboard
- Healthy lifestyle habits — such as eating a low-fat, low-salt diet, getting regular exercise and good sleep, and not smoking are user-specific suggestions are given
- Surgeries depend on the type of heart disease and the amount of damage to the heart, so suitable medical facility centers and specialized doctors are recommended

8. CHANNELS of BEHAVIOUR

ONLINE

- Surfing the internet for disease-related information
- Using apps that provide fitness suggestions

OFFLINE

- Getting to know other people suffering from similar issues
- Visit doctors for a professional opinion
- Increasing the overall health conscious