

SPRINT-4

PROJECT DESIGN PHASE-1

PROPOSED SOLUTION

Problem Statement:

The leading cause of death in the developed world is heart diseases. Therefore, there needs to be work done to help prevent the risks of having a heart.

Solution description:

It can be prevented by creating an interactive dashboard by data analytics. By doing this we can predict the forecoming dangerous events.

Uniqueness:

It can give correct and accurate information.

Social Impact:

In the point of social impact it has a great interactive dashboard for predicting the diseases.

Business Model:

It has a huge revenue when it comes to the market.

Scalability of the Solution:

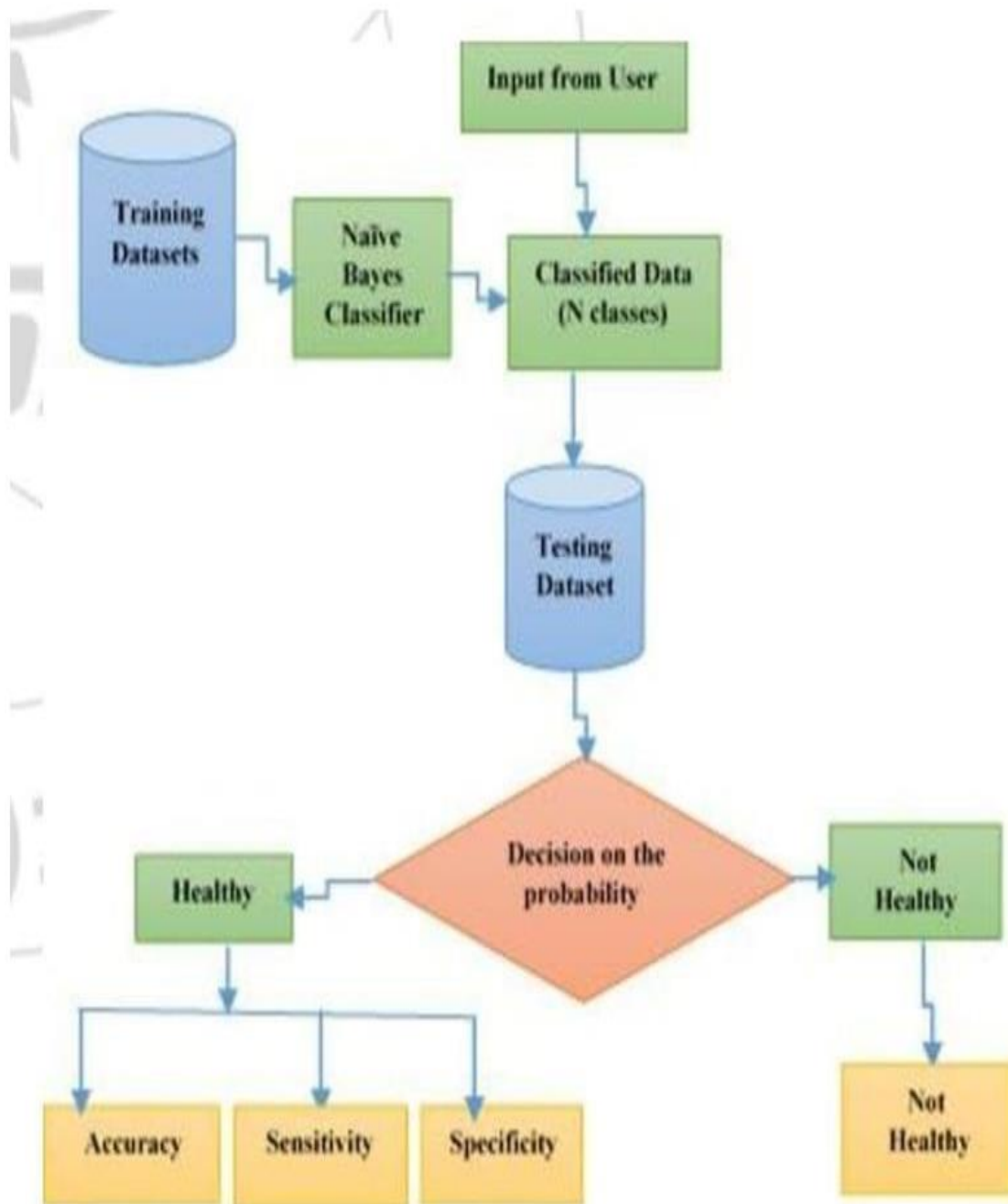
It has the easy manipulation of data.

PROBLEM SOLUTION FIT:

<p>1. CUSTOMER SEGMENT(S) CS</p> <p>Who is your customer?</p> <ul style="list-style-type: none"> smokers people who have high blood pressure people who have high cholesterol people who have high lipoprotein Dubese patients people who have lack of regular exercise Throubosed patients people who shorness of breath people who have Chest pain, chest tightness, chest pressure and chest discomfort (angina) people who have Pain in the neck, jaw, throat, upper belly area or back people who have Pain, numbness, weakness or coldness in the legs or arms if the blood vessels in those body areas are narrowed people who have overweight 	<p>6. CUSTOMER CONSTRAINTS SL</p> <p>What constrain prevent your customers from taking action or limit their choices of solutions?</p> <ul style="list-style-type: none"> Lack of knowledge about heart disease. Negative thoughts of the customer. Personal characteristics and physical disability of the customer. Complex symptoms of heart failure. Psychological problems. Lack of support. Lack of hope in treatment. Economical background is major constraints that prevent the customer from taking action. Medical and disease related limitations. 	<p>5.AVAILABLE SOLUTIONS AS</p> <p>Which solutions are available to the customers when they face the problem or need to get the job done? What have they tried in the past? What pros & cons do these solutions have?</p> <p>There are various solutions available for the people who are affected with heart diseases. They are,</p> <ul style="list-style-type: none"> Quit smoking get cholesterol test periodically eat plenty of fruits, vegetables and healthy foods with grains, sprouts, nuts etc. Exercise regularly Maintain a good physique. <p>If these solutions are properly followed then the people affected with disease can be cured naturally.</p> <ul style="list-style-type: none"> But, along with these they have to go for regular medical checkup and test for any heart disease. If disease is found in heart they need to make arrangements under proper medications.
<p>2. JOBS-TO-BE-DONE/PROBLEMS J&P</p> <p>Which jobs-to-be-done (or problems) do you address for your customers? There could be more than one, explore different sides.</p> <ul style="list-style-type: none"> Lives depending on medical support Financial insecurity shorness of breath may feel chest pain, chest tightness, chest pressure 	<p>9. PROBLEM ROOT CAUSE RC</p> <p>What is the real reason that this problem exists? What is the backstory behind the need to do this job?</p> <ul style="list-style-type: none"> Building of fatty plaques in the arteries is the most common cause of coronary artery disease. lack of exercise, obesity and smoking. Acute aortic insufficiency (AI). To cure the diseased patients especially to visualize the heart problem and give relief to them. One backstory is that many children are now affected with hole in the heart and suffer a lot than elders, so this method is initiated. Heart is the first formed organ when human is formed in the womb so problem in this affects the whole body. Thus, this visualization is made and any such heart diseases is predicted with an interactive dashboard. 	<p>7. BEHAVIOUR BE</p> <p>What does your customer do to address the problem and get the job done?</p> <ul style="list-style-type: none"> Regular, daily physical activity can lower the risk of heart disease. Physical activity helps control your weight. A healthy diet can help protect the heart, improve blood pressure and cholesterol, and reduce the risk of type 2 diabetes. One of the best things you can do for your heart is to stop smoking or using smokeless tobacco. Even if you're not a smoker, be sure to avoid secondhand smoke. Maintain a healthy weight Get good quality sleep Manage stress High blood pressure and high cholesterol can damage the heart and blood vessels. But without testing for them, you probably won't know whether you have these conditions. Regular screening can tell you what your numbers are and whether you need to take action.
<p>3. TRIGGERS TR</p> <p>What triggers customers to act? i.e. seeing their neighbour installing solar panels, reading about a more efficient solution in the news.</p> <ul style="list-style-type: none"> Lifestyle changes Lives depending on medical support need to search for heart specialist with manageable price need to apply for health insurance Financial insecurity Anxiety shorness of breath may feel emotional stress may feel chest pain, chest tightness, chest pressure feel for fatigue <p>4. EMOTIONS: BEFORE / AFTER EM</p> <p>How do customers feel when they face a problem or a job and afterwards? i.e. lost, insecure > confident, in control - use it in your communication strategy & design.</p> <ul style="list-style-type: none"> Before a person knows that he/she is affected with any kind of disease, they are unhappy and do their work normally. They don't need to worry about their own body for any problems and do their work normally and comfortably. But, after a person comes to know about any kind of problems especially a heart disease, he/she becomes illness unhealthy stressed/depressed uncomfortable with their daily routines. Lifestyle becomes upside down. 	<p>10. YOUR SOLUTION SL</p> <p>If you are working on an existing business, write down your current solution first, fill in the canvas, and check how much it fits reality.</p> <p>If you are working on a new business proposition, then keep it blank until you fill in the canvas and come up with a solution that fits within customer limitations, solves a problem and matches customer behaviour.</p> <ul style="list-style-type: none"> Heart disease treatment depends on the cause and type of heart damage. Healthy lifestyle habits — such as eating a low-fat, low-salt diet, getting regular exercise and good sleep, and not smoking — are an important part of treatment. If lifestyle changes alone don't work, medications may be needed to control heart disease symptoms and to prevent complications. The type of medication used depends on the type of heart disease. Some people with heart disease may need a procedure or surgery. The type of procedure or surgery will depend on the type of heart disease and the amount of damage to the heart. 	<p>8. CHANNELS of BEHAVIOUR CH</p> <p>8.1 ONLINE</p> <p>What kind of actions do customers take online? Extract online channels from #7</p> <ul style="list-style-type: none"> Online appointments with doctors. Research about the heart disease they are diagnosed with. Finding possible natural cures. <p>8.2 OFFLINE</p> <p>What kind of actions do customers take offline? Extract offline channels from #7 and use them for customer development.</p> <ul style="list-style-type: none"> Maintaining proper diet and eating healthy food. Having adequate amount of sleep. Maintaining a calm and relaxed mind state. Following the suggestions made by the doctors. Doing exercise and maintaining fitness. Taking the right doses of pills at the right time mentioned by doctors.

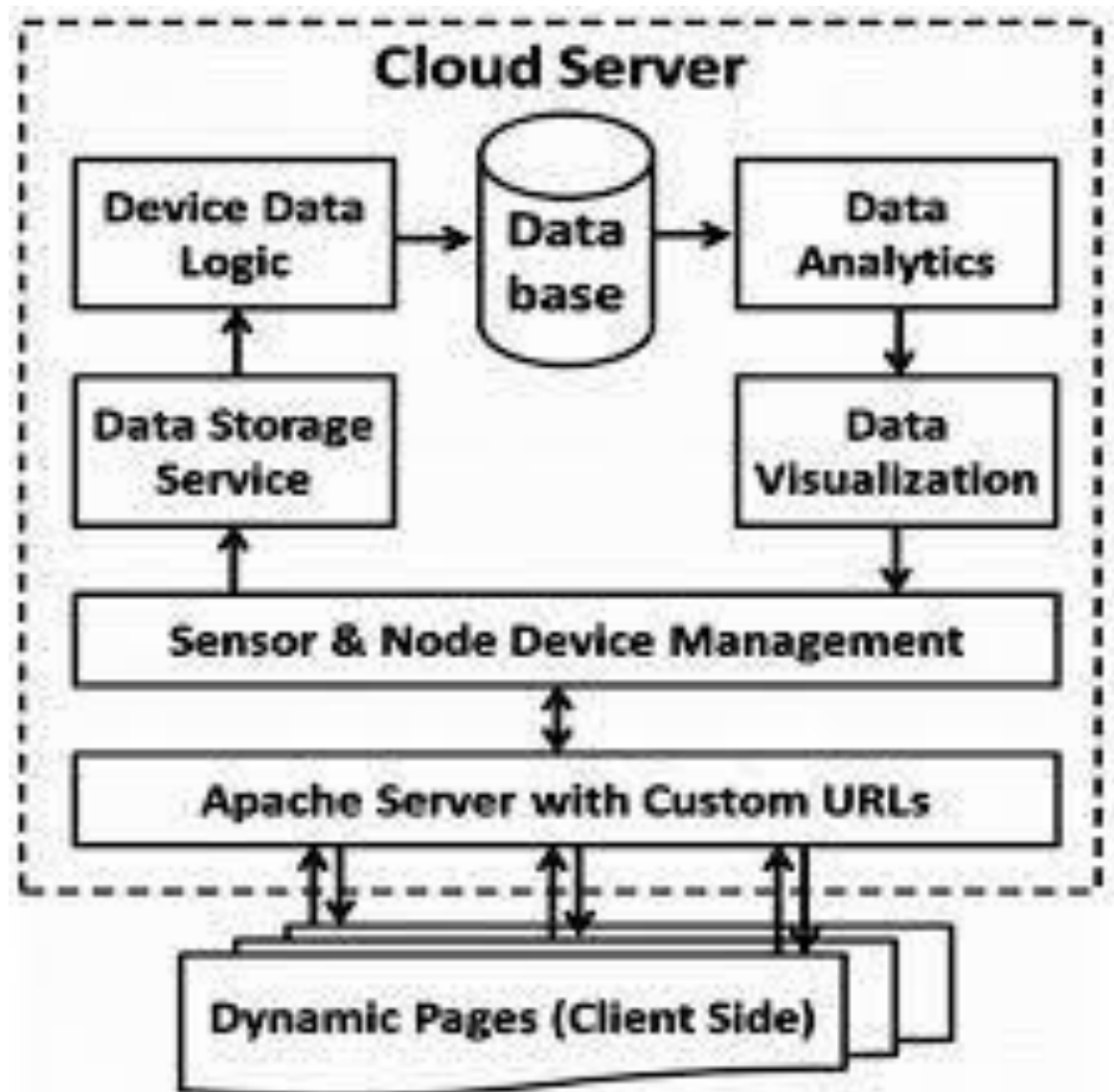
SOLUTION ARCHITECTURE:

Solution Architecture:



IDEATION PHASE-2:

DATA FLOW DIAGRAM:



FUNCTIONAL REQUIREMENTS:

FR No.	Functional Requirement	Sub Requirement (Story / Sub-Task)
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	(Epic)	
FR-1	User Registration	Registration through Facebook Registration through Gmail Registration through google
FR-2	Account creation	Gmail and password for account creation
FR-3	User Confirmation	Confirmation via Email Confirmation via OTP
FR-4	Personal details for account	Name, age, sex, height, weight, previous medical records, etc for health account basic details
FR-5	Regular medical condition updation in app	Entry present medical records, symptoms, etc

NON-FUNCTIONAL REQUIREMENTS:

FR No.	Non-Functional Requirement	Description
NFR-1	Usability	Good mobile navigation will boost the usability of the entire product, helping users to enjoy all the features offered. Bad navigation will make it difficult to find things, making it less likely that users will ever experience the product the way the design team had envisioned. Our solution has better features in navigation such as hamburger menu, Bottom navigation, Top navigation, Cards, Tabs, Gesture-Based Navigation, Full-screen navigation, 3D touch. In our app, we're using general language English to make the app user-friendly

NFR-2	Security	<p>To preserve user trust and device integrity is done by making your app more secure. Our solution proposes</p> <ol style="list-style-type: none"> 1. Provide the right permissions- Request only the minimum number of permissions necessary for your app to function properly. When possible, relinquish permissions when your app no longer needs them. 2. Store data safely- Store private data within internal storage 3. Ask for credentials before showing sensitive information 4. Keep services and dependencies up to date 5. Apply network security measures such as Add a network security configuration 6. Use WebView objects carefully- WebView objects in your app shouldn't let users navigate to sites that are outside of your control. Whenever possible, use an allow list to restrict the content loaded by your app's WebView objects. 7. Disallow access to your app's content providers-Unless you intend to send data from your app to a different app that you don't own, explicitly disallow other developers' apps from accessing your app's Content Provider objects.
NFR-3	Reliability	<ol style="list-style-type: none"> 1. Our app is made accessible whenever needed. 2. It Responds within the time frame needed. 3. It is regularly updated or modified as needed by the user. 4. Provide security and privacy to the extent needed by the user. 5. Provide bug free operation that is simple and easily predictable.

NFR-4	Performance	<p>1. Our app responds quickly by making application size small, using CDN & appbundles and produces the output and ittakes lesser session length</p> <p>2. Our app provides unique solution than thepresent system in the software</p> <p>3. Special team is formed to reply queries ofthe users 24/7</p> <p>4. Our app provides real time notificationsabout the user condition.</p>
NFR-5	Availability	<p>By setting up An Application Performance Monitoring (APM) system that helps to monitor the availability of application. Consistent performance monitoring and optimization help you to tackle issues as quickly as they show up. Our app is designed in such a way that to emphasize availability by spreading data across clusters so that if one fails the entirety of the data is not lost.</p>
NFR-6	Scalability	<p>A scalable app can easily accommodate double, triple, or even ten times its current amount of users by withstanding no crashes, no downtime, Fast loading speeds, Top-notch security. We're gonna make our app more scalable by using right Tech stack & Infrastructure scaling to process millions of data with bug free , multiple database servers that accommodate millions of user to secure our app's fail-safe performance, using caching and stateless approach to reduce the load, Content Delivery Networks (CDN) to minimal response time.</p>

TECHNOLOGY ARCHITECTURE

The system architecture gives an overview of the working of the system. The working of this system is described as follows: Dataset collection is collecting data which contains patient details. Attributes selection process selects the useful attributes for the prediction of heart disease. After identifying the available data resources, they are further selected, cleaned, made into the desired form. Different classification techniques as stated will be applied on preprocessed data to predict the accuracy of heart disease. Accuracy measure compares the accuracy of different classifiers.

