Project Design Phase -I – Solution Fit Template

Project Title: Statistical machine learning approach to liver disease prediction

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Define CS, fit into CC

1. CUSTOMER SEGMENT(S) — CS

People affected with liver disease are the customers of this segment.

6. CUSTOMER CONSTRAINTS — CC

Chronic inflammatory liver diseases are often accompanied by behavior alterations including fatigue, mood disorders, cognitive dysfunction and sleep disturbances. These altered behaviors can adversely affect patient quality of life.

5. AVAILABLE SOLUTIONS — AS

After taking inputs from the user, the system compares the data input with the training dataset of most accurate model and then predicts the result accordingly as risk or no risk.

Focus on J&P, tap into BE, understand RC

2. JOBS-TO-BE-DONE / PROBLEMS — J&P

Data Collection
Sample Testing
Disease Prediction

9. PROBLEM ROOT CAUSE — RC

Heavy alcohol use, obesity, type 2 diabetes, injecting drugs using shared needles, exposure to other people blood and body fluids, exposure to certain chemicals and family history of liver disease

7. BEHAVIOUR — BE

Collect the details of his/her blood test report.
Use accurate model, which is trained to predict whether the person has liver disease or not

Focus on J&P, tap into BE, understand RC

3. TRIGGERS

Many people are unaware about that they have liver disease , so liver disease prediction is efficient from them to live their life happily

TR

4. EMOTIONS: BEFORE / AFTER

Before: when they don't know about their risk, it becomes difficult for them to cure after the stage becomes critical

After: As they are aware about their disease, they can consult doctor and cure their disease

EM

10. YOUR SOLUTION

Machine Learning methods predict liver disease by incorporating the risk factors, which may improve the inference-based diagnosis of patients.

Machine Learning methods were able to identify which blood donors were healthy and which had liver disease with high accuracy.

SL

8. CHANNELS of BEHAVIOUR

CH

Chronic liver disease is detected by clinicians who are well trained in identifying significant observations and classifying them as normal or abnormal using background information and other context clues. ML algorithms can be trained to detect the possibility of liver disease in a similar way to assist healthcare workers.