PROJECT TITLE: Detecting Parkinson's Disease using Machine Learning

PROBLEM SOLUTION FIT

TEAMID:PNT2022TMID23224

Define CS, fit into

1. CUSTOMER SEGMENT(S) — CS

- Parkinson's disease is a progressive disorder that affects the nervous system and the parts of the body controlled by the nerves.
- Parkinson's patient have symptoms of Tremor, Slowed movement (bradykinesia), Rigid muscles, Writing changes, Impaired posture and balance, Loss of automatic movements, Speech changes.

6. CUSTOMER — CC

- Accurate prediction of disease.
- Early prediction of the disease.

5. AVAILABLE SOLUTIONS — AS

- The physician takes a medical history and does a physical examination.
- Performs a neurological examination, testing agility, muscle tone, gait and balance.
- PET and MRI scan also used by doctor for classification.
- In Machine learning field Several algorithms are proposed for classification.

Explore AS,

Focus on J&P, tap into BE, understand

2. JOBS-TO-BE-DONE / PROBLEMS — J&P

- Parkinson patient have problem of rigid muscles and writing changes.
- We have to collect the drawing of normal and parkinson patients.
- Using the drawing, we have to detect the presence of parkinson disease by applying necessary algorithm.

9. PROBLEM ROOT CAUSE — RC

- Lack of data
- New to field of study

7. BEHAVIOUR — BE

- Random forests are preferred over decision trees is that they are stable and are low variance models.
- They also overcome the problem of overfitting present in decision trees. Since they use bootstrapped data and random set of features, they ensure diversity and robust performance.
- They are immune to curse of dimensionality as they do not consider all the features at one time for individual trees.
- The main disadvantage of random forests is their lack of interpretability.

Focus on J&P, tap into BE, understand

Identify strong TR & EM

3. TRIGGERS — TR

- Parkinson disease are easy to treat if we dectect in early stage.
- Provide more efficient algorithm to detect the parkinson disease in its early stage.

4. EMOTIONS: BEFORE / AFTER — EM

Before:
- Does not know about outcome of prediction.

After:
- Got idea to detect parkinson disease in early stage.
- Certain about prediction and to take necessary

10. YOUR SOLUTION — SL

- The project aims at presenting a solution for parkinson's disease detection using suitable machine learning algorithms.
- Algorithms such as random forest and decision trees are used for disease prediction.
- We will load the dataset into dataframe and get the feature and label ,preprocess the data and classify it.

8. CHANNELS of BEHAVIOUR — CH

8.1 Online:
- If we use online channels, then the Customer can check their result with online comparison using our platform.

8.2 Offline:
- offline channels
- If the disease predicted then the customer need to go to Hospital for Treatment in offline mode.

Extract online & offline CH of BE