SolutionRequirements(Functional&Non-functional)

Date	16 October 2022
TeamID	PNT2022TMID09607
Project Name	PARKINSON'S DISEASE DETECTION USING MACHINE LEARNING
Maximum Marks	4 Marks

FunctionalRequirements:

Following are the functional requirements of the proposed solution.

FR No.	FunctionalRequirement (Epic)	SubRequirement(Story/Sub-Task)
FR-1	Analyzing Symptoms	Stiffnessinmuscles Rigidity and slowness in body movementsBreaking of voice and shivering in toneDifficultywithwalking Emotionalandbehavioíalchanges Dementia and depression
FR-2	Collecting voice dataset	Speech and voice recordings of the patientis collected. Variousvoiceparametersaremeasured.
FR-3	Workingondataset	Voicerecordingismeasuredagainstthepa rameters. Data is preprocessed and dependentvariables are found. Data is split into train and test data. Trainingandtestingisdoneandthemodelis evaluated.

FR-4	Applying SVM algorithm	SVMfindsahyper-planethatcreatesaboundary between the types of data. WeploteachdataiteminthedatasetinanN-dimensional space. The algorithm tries to find the optimalhyperplane which can be used to classify dataset into healthy person orpersonsuffering fromParkinson.
FR-5	Providing insights of dataset	Raw data collection and sharing ofdata and systems are essential factorsin hospital management. According to these data appropriate measures can be taken.Providingdatasetwithouterro r. Providing treatment for the patients who are sufferingfromParkinson.

Non-functionalRequirements:

Following are the non-functional requirements of the proposed solution.

FR No.	Non-FunctionalRequirement	Description
NFR-1	**Usability**	Usable systems are straightforward to useby as many people as possible, both in case of either end users or administratorstoviewthehospitalrecordswhenneeded.
NFR-2	**Security**	**Patient identification:** Torecognize and analyze thepatientperfectly.
NFR-3	**Reliability**	Understanding the current trend and working on to it to solve the problem inanefficientmanner. Being software as a service, HMS ishighly resilient to any technologydisruptions, downtime, or crashes experienced by other technology systems.
NFR-4	**Performance**	**Response time:** Providing acknowledgment inminimal time about the patientinformation. **Comfortability:** Toensurethattheguidelines and accessibilities are followed.
NFR-5	**Availability**	Better coordination with the hospital management to provide all itsresourcesaccessiblewhenneeded. Accessibility of all medical facilities.
NFR-6	**Scalability**	Make sure that the work is done inmoreefficientwaywiththeappropriateresources. Make complex decisionsunderstandablewithproperdata.