Project Design Phase-I
Proposed Solution Template

Team ID	PNT2022TMID53212
Project Name	Analytics for Hospitals' Health-Care Data

S.No.	Parameter	Description
1.	Problem Statement (Problem to be solved)	The task is to accurately predict the Length of Stay for each patient on case-by-case basis so that the Hospitals can use this information for optimal resource allocation and better functioning. The length of stay is divided into 11 different classes ranging from 0-10 days to more than 100 days.
2.	Idea / Solution description	Naïve Bayes is a classification technique that works on the principle of Bayes theorem with an assumption of independence among the variables. Here the goal is to predict Length of Stay i.e., "Stay" column (Target Variable) and it is classified into 11 levels. We must find the probability of each patient's length of stay using feature variables, which contain the patient's condition and hospital-level information. These feature variables are ordinal and naïve Bayes is a perfect multilevel classifier.
3.	Novelty / Uniqueness	Accurate understanding of the factors associating with the LOS and progressive improvements in processing and monitoring may allow more efficient management of the LOS of inpatients
4.	Social Impact / Customer Satisfaction	A shorter LOS reduces the risk of acquiring staph infections and other healthcare-related conditions, frees up vital bed spaces, and cuts overall medical expenses
5.	Business Model (Revenue Model)	The length of stay (LOS) is an important indicator of the efficiency of hospital management. Reduction in the number of inpatient days results in decreased risk of infection and medication side effects, improvement in the quality of treatment, and increased hospital profit with more efficient bed management

6.	Scalability of the Solution	Remote patient monitoring systems enabling effective distance treatment. Patient portals that allow people to better manage their health themselves;