Project Design Phase
Solution Architecture

Date: -	21th October, 2023
Team ID: -	Team-593068
Project Name: -	Genetic Classification of Individuals using Machine Learning
Maximum Marks: -	4 marks

Solution Architecture:-
Our solution optimizes the genetic variant classification process by leveraging a combination of machine learning techniques, ensuring accurate and reliable categorization crucial for precise medical interpretations and treatments.

1)Data Aggregation and Collation:

- Gather extensive genetic variant and clinical data from diverse sources for comprehensive analysis.
- Aggregate and organize the data to facilitate effective processing and model development.

2)Feature Engineering and Preprocessing:

- Perform in-depth feature engineering to extract relevant genetic attributes and clinical markers.
- Preprocess the data to ensure consistency and relevance in the subsequent stages of modeling.

3)Model Fusion and Training:

- Fuse logistic regression and Naive Bayes models to create a powerful hybrid classification framework.
- Train the integrated model using curated datasets to capture the complexity of genetic variant patterns.

4)Clinical Outcome Prediction:

- Utilize the trained model to predict clinical outcomes based on genetic variant classifications.
- Implement an effective system for accurate disease prognosis and patient-specific treatment suggestions.

5)Continuous Learning and Real-Time Adaptation:

- Establish a continuous learning loop to adapt to the evolving landscape of genetic data and medical insights.
- Enable real-time analysis capabilities for immediate feedback and adaptive model adjustments.

Solution Architecture Diagram:-