**Project Initialization and Planning Phase**

| Date | 15 July 2024 |
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| Team ID | 739748 |
| Project Name | Genetic Classification Of An Individual By Using Machine Learning |
| Maximum Marks | 3 Marks |

**Define Problem Statements (Customer Problem Statement Template):**

Individuals and healthcare providers are often in need of precise genetic information to make informed decisions regarding health, ancestry, and personal traits. Traditional genetic analysis methods can be time-consuming, costly, and sometimes inaccurate. Our objective is to develop a machine learning model that can quickly and accurately classify individuals based on their genetic data, providing insights into health risks, ancestry, and genetic traits. By leveraging advanced machine learning techniques, we aim to deliver a solution that enhances the accuracy and efficiency of genetic classification.

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| |  |  |  |  |  |  |  |  |  |  |  | | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | | |  |  | | --- | --- | | I am | A healthcare provider looking to provide personalized medicine and researcher studying genetic traits and disease predispositions. | | I’m trying to | Gain insights into my genetic traits, health risks, and ancestry then provide accurate and timely genetic information to patients and analyse genetic data efficiently and accurately for research. | | But | Current genetic analysis methods are time-consuming and costly. | | Because | Genetic testing often involves complex procedures and expensive equipment. The vast amount of genetic data requires advanced computational techniques and there is a lack of accessible, reliable, and quick genetic classification tools. | | Which makes me feel | Frustrated due to the high costs and long waiting times for results concerned about the accuracy and reliability of the genetic information received. | | |

**Example:**

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| I am | I'm trying to | But | Because | Which makes me feel |
| an individual curious about my genetic makeup | understand my health risks and ancestry | the current genetic analysis methods are expensive and slow | traditional techniques require complex procedures and costly equipment | frustrated and concerned about the accessibility of my genetic information |

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| **Problem**  **Statement (PS)** | **I am**  **(Customer)** | **I’m trying to** | **But** | **Because** | **Which makes me feel** |
| PS-1 | A medical researcher or healthcare provider. | Accurately classify genetic variations in individuals to predict potential health risks and personalize treatment plans. | The current methods are either too slow, costly, or lack precision | They rely heavily on manual analysis and traditional statistical methods | Frustrated and concerned about the effectiveness and efficiency of patient care. |
| PS-2 | An individual interested in personalized health information. | Understand my genetic profile to take proactive steps in managing my health. | I find it difficult to access clear and accurate genetic information | The available resources are either too technical or not tailored to my specific needs. | Confused and overwhelmed about making informed health decisions |