**Ideation Phase**

**Define the Problem Statements**

| Date | 06 May 2023 |
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| Team ID | NM2023TMID11419 |
| Project Name | Intelligent Garbage Classification using  Deep learning |
| Maximum Marks | 2 Marks |

**Problem statement:**

The problem is the inefficient and error-prone process of garbage classification in waste management systems. Traditional garbage sorting methods rely on manual labor, which is time-consuming, subjective, and often results in improper waste disposal. This leads to negative environmental consequences, including increased pollution, resource wastage, and hindrance to recycling efforts.

Moreover, the complexity of garbage classification poses a significant challenge for individuals who want to contribute to proper waste management but lack knowledge about the correct categorization of different waste items. This lack of awareness and guidance further exacerbates the problem.

To address these issues, the problem statement is to develop an intelligent garbage classification system using machine learning techniques. The system should be capable of accurately categorizing various types of waste, such as plastic, paper, glass, metal, and organic waste, in real-time. The classification process should be automated and efficient, reducing the dependence on manual sorting.

The intelligent garbage classification system should utilize deep learning algorithms to analyze visual and sensory inputs, such as images or sensor data from garbage bins, to determine the appropriate waste category. The system should also provide immediate feedback to users, indicating whether their garbage disposal was correct or if it requires adjustment.

| **Problem Statement (PS)** | **I am (Customer)** | **I’m trying to** | **But** | **Because** | **Which makes me feel** |
| --- | --- | --- | --- | --- | --- |
| PS-1 | Vignesh | Classify waste through AL | There is Risk | to implement most effectively | To develop intelligent garbage classification using machine learning |
| PS-2 | - | - | - | - |  |