Project Design Phase-I
Proposed Solution Template

Date	06 May 2023
Team ID	NM2023TMID11619
Project Name	Intelligent Garbage Classification using Deep learning

Proposed Solution Template:

Project team shall fill the following information in proposed solution template.

S.No.	Parameter	Description
1.	Problem Statement (Problem to be solved)	With the increase in the number of industries in the urban area, the disposal of the solid waste is really becoming a big problem, and the solid waste includes paper, wood, plastic, metal, glass etc. The common way of managing waste is burning waste and this method can cause air pollution and some hazardous materials from the waste spread into the air which can cause cancer. Hence it is necessary to recycle the waste to protect the environment and human beings' health, and we need to separate the waste into different components which can be recycled using different ways.
2.	Idea / Solution description	Our proposed solution is to establish a garbage classification model that offers a unique and comprehensive experience for users that includes : 1). The user interacts with the UI (User Interface) to choose the image. 2). The chosen image analysed by the model which is integrated with flask application.
3.	Novelty / Uniqueness	Garbage classification model has unique features such as data collection, data pre-processing, model building, application building. By leveraging data-driven insights and expert knowledge, we aim to create a personalized and convenient environment that caters specifically to the needs of users.
4.	Social Impact / Customer Satisfaction	The present way of separating waste/garbage is the hand-picking method, whereby someone is employed to separate out the different objects/materials. The person who separates waste, is prone to diseases due to the harmful substances in the garbage. With this in mind, it motivated us to develop an automated system which is able to sort the waste. and this system can take a short time to sort the waste, and it will be more accurate in sorting than the manual way. With the system

		in place, the beneficial separated waste can still be recycled and converted to energy and fuel for the growth of the economy. The system that is developed for the separation of the accumulated waste is based on the combination of Convolutional Neural Network.
5.	Business Model (Revenue Model)	The success of our business model for an Garbage classification system will depend of how well you can identify and serve the needs of your target user. We strive to enhance customer satisfaction and strengthen the bond between user and us.
6.	Scalability of the Solution	The scalability of a garbage classification system depends on various factors, including the size and complexity of the system, the volume and diversity of the waste being sorted, the efficiency of the sorting mechanisms, and the available resources for maintenance and expansion.