PROJECT TITLE: Building a Smarter AI-Powered Spam Classifier.

DEFINITION:

For the majority of internet users, email has become the most often utilized formal communication channel. In recent years, there has been a surge in email usage, which has exacerbated the problems presented by spam emails. Spam, often known as junk email, is the act of sending unsolicited mass messages to a large number of people. 'Ham' refers to emails that are meaningful but of a different type. Every day, the average email user receives roughly 40-50 emails. Spammers earn roughly 3.5 million dollars per year from spam, resulting in financial damages on both a personal and institutional level. As a result, consumers devote a large amount of their working time to these emails. Spam is said to account for more than half of all email server traffic, sending out a vast volume of undesired and uninvited bulk emails. They squander user resources on useless output, lowering productivity. Spammers use spam for marketing goals to spread malicious criminal acts such as identity theft, financial disruptions, stealing sensitive information, and reputational damage.

DESIGN PROCESS:

There are many different ways to design a spam filtering system, but one common approach is to use machine learning algorithms. These algorithms can be trained on data sets of known and non-spam emails and then used to classify new emails.

Many machine-learning algorithms can be used for this task, including support vector machines, naive Bayes classifiers, and decision trees. Each algorithm has

its strengths and weaknesses, so choosing the right one for your particular data set and application is essential. Once you have chosen an algorithm, you must train it on your data set. This process involves providing the algorithm with training examples, which it will use to learn the characteristics of spam and non-spam emails. Once the algorithm has been trained, it can be used to classify new emails.If you are unsure which algorithm to use or how to train it on your data set, many online resources can help you. There are also commercial software packages that offer ready-made solutions for spam filtering. Whatever approach you take, it is essential to remember that no spam filtering system is perfect, and there will always be some false positives (emails classified as spam when they are not) and false negatives (emails classified as non-spam when they are). However, by using a well-designed **machine learning** system, you can significantly reduce the amount of spam in your inbox.