

## Project Initialization and Planning Phase

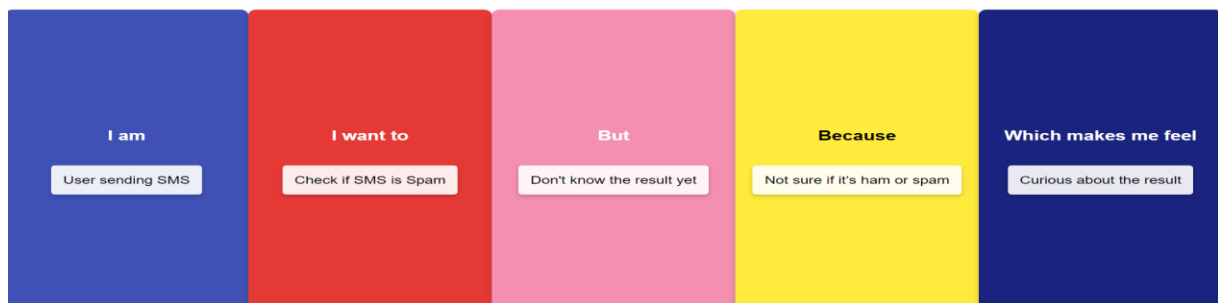
Date	23-09-2024
Team ID	LTVIP2024TMID25000
Project Name	SMS Spam Detection - AIML
Maximum Marks	3 Marks

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

The increasing amount of SMS spam is a growing concern for users. Spam messages often contain fraudulent schemes, unwanted promotions, or phishing attempts, making it difficult for users to distinguish between legitimate and spam messages. This project aims to provide an efficient solution to automatically detect and classify SMS messages as either **Spam** or **Not Spam**, enhancing users' trust and experience.

By creating a tool to automatically detect SMS spam, we aim to alleviate the frustration of manually filtering unwanted messages. The solution will contribute to a cleaner inbox and a safer user experience.

### Example:



Problem Statement (PS)	I am (Customer)	I'm trying to	But	Because	Which makes me feel
PS-1	A user regularly receiving SMS messages, both legitimate and spam.	Identify whether an SMS message is legitimate or spam without having to manually filter through my inbox.	Spam messages often look like legitimate messages, and filtering through them manually is time-consuming and frustrating.	Some spam messages contain fraudulent information or unwanted promotions, potentially leading to scams or security breaches.	Worried about security, and annoyed by the constant influx of spam messages.



## Initial Project Planning Template

Date	26-09-2024
Team ID	LTVIP2024TMID25000
Project Name	SMS Spam Detection
Maximum Marks	4 Marks

## Product Backlog, Sprint Schedule, and Estimation (4 Marks)

Use the below template to create a product backlog and sprint schedule

Sprint	Functional Requirement (Epic)	User Story Number	User Story / Task	Priority	Team Members	Sprint Start Date	Sprint End Date (Planned)
Sprint-1	Data Collection and Preprocessing	SD-1	Understanding & loading dataset	High	Sajida Tharunam	26-09-2024	29-09-2024
Sprint-1	Data Collection and Preprocessing	SD-2	Data cleaning	High	Satya Pranith	27-09-2024	27-09-2024
Sprint-1	Data Collection and Preprocessing	SD-3	Exploratory Data Analysis (EDA)	Medium	Satya Pranith	28-09-2024	28-09-2024

<b>Sprint</b>	<b>Functional Requirement (Epic)</b>	<b>User Story Number</b>	<b>User Story / Task</b>	<b>Priority</b>	<b>Team Members</b>	<b>Sprint Start Date</b>	<b>Sprint End Date (Planned)</b>
Sprint-2	Model Development	SD-4	Training the Naive Bayes model	Medium	Sajida Tharunam	30-09-2024	1-09-2024
Sprint-2	Model Development	SD-5	Evaluating the model	Medium	R.L. Chaitanya	2-09-2024	4-09-2024
Sprint-2	Model Tuning and Testing	SD-6	Model tuning	High	R.L. Chaitanya	5-09-2024	7-09-2024
Sprint-2	Model Tuning and Testing	SD-7	Model tuning	Medium	Eshwar Reddy	7-09-2024	9-09-2024
Sprint-3	Web Integration and Deployment	SD-8	Building HTML templates	High	Eshwar Reddy	10-09-2024	13-09-2024
Sprint-3	Web Integration and Deployment	SD-9	Local deployment	Medium	Eshwar Reddy	14-09-2024	15-09-2024
Sprint-4	Project Report	SD-10	Writing the final project report	Medium	Sajida Tharunam	15-09-2024	18-09-2024



## Project Initialization and Planning Phase

Date	25-09-2024
Team ID	LTVIP2024TMID25000
Project Title	SMS Spam Detection
Maximum Marks	3 Marks

### Project Proposal (Proposed Solution) template

This proposal AI-ML to develop a machine learning-based SMS spam detection system, enhancing the user experience by automatically classifying SMS messages as either spam or not spam. The project leverages a pre-trained model and web technologies to deliver real-time predictions in a user-friendly interface. It tackles the challenge of spam overload, promising to reduce unnecessary distractions and improve user security.

Project Overview	
Objective	The primary objective is to create a Flask web application capable of detecting spam SMS messages with high accuracy by utilizing machine learning techniques such as Naive Bayes and TF-IDF vectorization.
Scope	This project will allow users to input an SMS message via a web interface and receive instant feedback on whether the message is classified as spam or not spam. The application aims to improve user convenience by automating the spam detection process and offering an intuitive, easy-to-use web solution.
Problem Statement	
Description	Users often receive unwanted and potentially harmful SMS spam messages that affect their productivity and pose security risks. Manually filtering these messages is time-consuming and inefficient.
Impact	By addressing the issue of spam detection, the application can reduce the number of unsolicited messages users have to handle manually, thereby improving user experience, increasing productivity, and enhancing digital security.
Proposed Solution	

Approach	The proposed solution is to build a Flask-based web application that employs machine learning techniques, such as <b>Naive Bayes</b> and <b>TF-IDF vectorization</b> , to classify SMS messages as spam or not spam in real-time.
Key Features	1.Implementation of a machine learning-based model for <b>SMS spam detection</b> . 2. <b>Real-time predictions</b> : Users will receive instant feedback on the spam classification of the SMS. 3.User-friendly <b>web interface</b> for easy input of messages and result visualization. 4.Continuous updates and retraining of the model to adapt to new spam techniques.

## Resource Requirements

Resource Type	Description	Specification/Allocation
<b>Hardware</b>		
Computing Resources	CPU/GPU specifications, number of cores	NVIDIA V100 GPUs
Memory	RAM specifications	4 GB / 8 GB / 16 GB
Storage	Disk space for data, models, and logs	512 GB SSD / 1 TB SSD
<b>Software</b>		
Frameworks	Python framework for web development	Flask
Libraries	Libraries for machine learning and data processing	scikit-learn, pandas, numpy, matplotlib, seaborn
Development Environment	IDEs for coding	Jupyter Notebook, Google Colab, Visual Studio Code
<b>Data</b>		
Data	Dataset used for training and testing	Kaggle dataset (SMS Spam Collection), 5,000+ rows, CSV format

