

STUDENT DECLARATION

I hereby declare that the work being presented in this report entitled “**Smart Email Assistant**” is an authentic record of my own work carried out under the supervision of “**Ms. Savita Singh**”.

Date:

Signature of Student

Ashutosh Rajput

This is to certify that the above statement made by the candidate is correct to the best of my knowledge.

Signature of HOD

Prof. (Dr.) Devendra Kumar

HOD-MCA

Signature of Internal

Ms. Savita Singh

Assistant Professor

(Sr. Scale)

Date:

ACKNOWLEDGEMENT

Any software project is not a work of an individual. It combines effort, ideas, suggestions, reviews, and hard work. I thank all who initiated and helped us to complete my project. One of the most pleasing aspects of collecting the necessary information and compiling it is the opportunity to thank those who have actively contributed to it.

I would like to thank my guide for his/her guidance and cooperation render for following me to undergo training under his/her guidance; I am also thanks to all the other college staff who helped me despite their busy schedule.

My special thanks to **Ms. Savita Singh, Assistant Professor (Sr. Scale)** for her active support, affectionate, guidance and constant encouragement. I am highly indebted to **Prof. (Dr.) Devendra Kumar (HOD-MCA)** for his continuous effort in building a good infrastructure and developing a professional attitude within ourselves during the academic period of MCA (Master of Computer Application).

Signature of Student

Ashutosh Rajput

2300320140039

MCA-IV Semester

ABSTRACT

The Smart Email Assistant is a Spring Boot-based application enhanced with Spring AI to streamline and automate email communication in a dynamic and intelligent environment. Designed to assist users in managing their email interactions more effectively, the system leverages natural language processing and AI-powered suggestions to draft responses, summarize messages, and categorize emails intelligently.

By integrating modern AI capabilities with traditional backend development, the assistant provides real-time content analysis and response generation, significantly reducing the time spent on routine email tasks. It offers a user-friendly interface that ensures seamless interaction while maintaining data security and consistency. The system supports features like smart reply generation, keyword-based filtering, and contextual understanding of incoming messages.

This project aims to improve personal and professional productivity by transforming conventional email management into an intelligent and proactive experience. It serves as a scalable foundation for further integration with enterprise tools, making it a robust solution for smart communication in today's fast-paced digital ecosystem.

.

TABLE OF CONTENT

Sr. No.	Content		Page No.
1.	Introduction		1-4
	1.1	Overview	1
	1.2	Objective	1
	1.3	Need of Project	2
	1.4	Scope	3
2.	Feasibility Study		5-6
	2.1	Technical	5
	2.2	Operational	6
	2.3	Economic	6
3	Requirements (Hardware / Software/ Functional / Non-Functional)		7-12
	3.1	Hardware Requirements	7
	3.2	Software Requirements	7
		3.2.1 Backend Development Tools	8
		3.2.2 Frontend Development Tools	8
		3.3.3 API Connectivity and Integration	8
	3.3	Functional Requirements	9
	3.4	Non-Functional Requirements	11
4	Design		13-18
	4.1	ER-Diagram	13
	4.2	Data Flow Diagram	14

	4.3	Use Cases	16
	4.4	Sequence Diagram	17
	4.5	Activity Diagram	18
5	GUI		19-25
	5.1	User Interface Design	19
	5.2	Modules Screenshot	25
6	Coding		26-46
	6.1	Programming Languages and Tools Used	26
	6.2	Code Architecture and Organization	27
	6.3	Key Code Snippets	31
7	Future Scope		47-48
8	Conclusion		49-50
9	References		51

LIST OF FIGURES

S. No.	Figure Description	Page No.
Figure-1	ER Diagram	13
Figure-2	Data Flow Diagram	14-15
Figure-3	Use Case Diagram	16
Figure-4	Sequence Diagram	17
Figure-5	Activity Diagram	18
Figure-6	Spring Boot Project (Spring initilzer)	21
Figure-7	Gemini API Generate	21
Figure-8	Postman Check Gemini API	22
Figure-9	POST Request	22
Figure-10	POST Response	23
Figure-11	App.jsx Frontend	23
Figure-12	App..jsx Response	24
Figure-13	Email Writer Extension	24
Figure-14	Extension Integrate With Email	25
Figure-15	Email Output Generate With AI	25
Figure-16	Backend Project Directory	28
Figure-17	Frontend Project Directory	29
Figure-18	Extension Project Directory	30