

Bachelors of Technology in Computer Science & Engineering

☒ Minor ☐ Major

Project Title	Contextualized Data Processing with LangChain & Vector Databases				Mentor Name	Project Number
						Mr. Sahinur Rahman Laskar
S.No	Rollnumber	Branch	Name	Role	Signature	
1.	R2142220280	B.Tech CSE(H) DATA SCIENCE	Ritvik Gupta	Frontend Development		
2.	R2142220062	B.Tech CSE(H) DATA SCIENCE	Debanjana Pal	Database Management		
3.	R2142221227	B.Tech CSE(H) AI ML	Milind Vishwakarma	Langchain Development		

Project Mentor

Cluster Head

Date	Understanding of Project	Project Working	Soft Skills	Report	Mentor Marks	Total Marks	Project Status Activity Coordinator
R.No	25 Marks	35 Marks	10 Marks	15 MARKS	85 MARKS	100 MARKS	
	0	0	0	0	0	0	
	0	0	0	0	0	0	
	0	0	0	0	0	0	
	0	0	0	0	0	0	

Synopsis Evaluation						
Theoretical Understanding						
Rollno	Problem(4 Marks)	Algorithm(4 Marks)	Data /Data structure(4 Marks)	SWOT Analysis(4 Marks)	Area of Application(4 Marks)	Total Marks(20)
						0
						0
						0
						0
Panel Remark						
	Reviewer 1	Reviewer 2	Reviewer 3	Reviewer 4	Reviewer 5	

Mid- Term Evaluation						
DESIGN & DEVELOPMENT						
Rollno	Technical Diagram(5 Marks)	Programming Concepts(5 Marks)	IPC(5 Marks)	Libraries(5 Marks)	SRS(10)	Total(20 Marks)
						0
						0
						0
						0
Panel Remark						
	Reviewer 1	Reviewer 2	Reviewer 3	Reviewer 4	Reviewer 5	

End-Term Evaluation							
Testing & Implementation							
Rollno	Theoretical Knowledge(5)	Computational Knowledge(5)	Test Case (10)	Soft Skills (10)	Report(5)	Core Computational Skills(15)	Total (50)
							0
							0
							0
							0
Panel Remark							
	Reviewer 1	Reviewer 2	Reviewer 3	Reviewer 4	Reviewer 5		

Branch

Bachelors of Technology in Computer Science Engineering

Minor

Major

Project Title	Contextualized Data Processing with LangChain & Vector Databases										Mentor Name	Mr. Sahinur Rahman Laskar	
Abstract	<p>This project integrates Large Language Models (LLMs), LangChain, vector databases, and the LLM API's to create an intelligent system for efficient data retrieval, processing, and analysis. By using NLP to do semantic search, the system enhances the responses, making them structured and context accurate.</p> <p>LangChain orchestrates LLM tasks, while text embeddings allow for semantic search and vector databases enable fast, context-aware searches. The API's used, will provide flexibility for external integrations. The solution aims to deliver real-time insights, improving human-machine interactions and offering reliability.</p>												
Objective	<p>This project aims to develop a cutting-edge system that uses Large Language Models (LLMs), LangChain, Vector databases, the Gemini API, and Llama API. The objective is to enable intelligent, context-aware data retrieval, automate complex workflows, and enhance human-machine interactions. By leveraging LangChain for prompt chaining, embeddings for input processing, and vector databases for fast semantic search, the system will provide real time insights with high reliability.</p>												
Methodology	<p>Requirement Analysis & System Design → LLM Orchestration with LangChain → Data Storage & Retrieval (Vector Database) → API Integration (e.g., Gemini API) → Testing & Optimization → Deployment (Cloud/On-Premise) → Continuous Monitoring & Feedback → Final Deliverables (Comprehensive Report)</p>												
Progress 1													
	<div style="display: flex; justify-content: space-between;"> Marks 10 10 10 10 10 10 10 10 15 </div>												
Mentor Remark		Roll Number	Step 1	Step 2	Step 3	Step 4	Step 5	Step 6	Step 7	Internal			
		Date/Mentor Signature											
Progress 2													
	<div style="display: flex; justify-content: space-between;"> Marks 10 10 10 10 10 10 10 10 15 </div>												
Mentor Remark		Roll Number	Step 1	Step 2	Step 3	Step 4	Step 5	Step 6	Step 7	Internal			
		Date/Mentor Signature											

Guideline: 1) A project group can be of maximum 4 members and no alteration in the group member will be entertained later.

Guideline: 2) Methodology should have following steps Step1: Literature Review; Step2: Identification Of Requirement (Type Of Data source, Amount Of Data, & Format of Data); Step3: Identification of Algorithm; Step4 : Comparative study; Step5: Design and Development of System/Architecture; Step 6: Implementation; Step7: Results

Guideline:3) Student should upload softcopies of all the documents (reports and power point presentations) in "Project Directory", 24 hrs prior to evaluation.

Guideline:4) Panel member will give feedback to individual on the scale of 1 to 5 and this scale will change for defaulter i.e. 1 to 3 scale.

1: Poor

2: Average

3: Good

4: Excellent

5: Outstanding