CHAROTAR UNIVERSITY OF SCIENCE AND TECHNOLOGY (CHARUSAT)
DEVANG PATEL INSTITUTE OF ADVANCE TECHNOLOGY & RESEARCH (DEPSTAR)
DEPARTMENT OF INFORMATION TECHNOLOGY

Annexure - I
PROJECT PROPOSAL SUBMISSION

Semester:	**6**	**Div.:**	**CSE2**	**Course Name: Project-IV**	
Course Code: CSE315					**Date: 19-12-2025**

Details of Project Team

Group No. (if any):

Sr. No.	Student's Roll Number	Name of Student	Student's e-mail Address	Student's Contact No.
1.	23DCS078	Patel Krish	23dcs078@charusat.edu.in	8160294557
2.	23DCS100	Prajapati Daksh	23dcs100@charusat.edu.in	9313326648

Sr. No:	Parameters:	Description:
a	**Project Title** *Give your project a concise, descriptive, and creative title.*	LearnSphere AI – Intelligent PDF Learning and Q&A Platform
b	**Domain of Project Definition** *Specify the technological or application domain.*	Web Development (Education Technology)
c	**Problem Statement:** *Clearly define the real-world problem your project addresses. Include:* • **What** the issue is • **Why** it matters • **Who** it impacts • **How** it affects the current system. *Write your specific problem statement here.*	• In the current education system, students and professionals frequently rely on long PDFs such as lecture notes, research papers, manuals, and reports. Reading and understanding these documents is time-consuming and often inefficient. • Existing tools provide basic summaries but lack interactive learning features such as concept visualization and document-based question answering. This results in reduced learning efficiency and poor knowledge retention. • LearnSphere AI addresses this problem by providing an AI-powered web platform that extracts key topics, generates summaries, visualizes concepts using mind maps, and enables users to ask questions directly from the uploaded document, thereby improving understanding and saving time.
d	**Project Objectives and Scope:** **Objectives:** • Clearly define measurable goals • Use SMART (Specific, Measurable, Achievable, Relevant, Time-bound) framework. **Scope:** • Clearly define what's **included** and what's **not included** • Mention constraints (time, technology, budget, etc.) *Clearly mention your project's objectives and scope here.*	**Objectives** 1. To design a responsive web application for uploading and processing PDF documents. 2. To extract and summarize important content using AI techniques. 3. To identify key topics and generate visual mind maps for better understanding. 4. To implement an interactive Q&A system based on document content. 5. To enhance learning speed and knowledge retention for users. **Scope** **Included:** • PDF upload and text extraction • AI-based summarization and topic extraction • Interactive Q&A system • Mind map generation • Works on modern web browsers

<table>
<tr><td></td><td></td><td>Excluded:
Offline processing
Mobile application version
Multilingual document support (future enhancement)
Constraints: Limited project time, dependency on AI APIs, and browser-based deployment.</td></tr>
<tr><td>e</td><td>Background Study of Existing System
Analyze existing solutions and identify gaps. Highlight where your solution innovates.
Overview of current systems/tools.
Strengths and limitations.
Market relevance or usage statistics (if available).
Gap that your project fills.</td><td>Several platforms such as ChatPDF, Scholarcy, and DocAnalyzer provide PDF summarization and question-answering features.

Strengths of Existing Systems:
Fast document summarization
AI-based question answering
Limitations:
Limited or no visual concept mapping
Subscription-based access
Lack of deep concept relationships
Research Gap:
Current systems do not provide integrated mind maps with interactive learning. LearnSphere AI fills this gap by combining summaries, concept visualization, and contextual Q&A in a single platform.</td></tr>
<tr><td>f</td><td>Methodology and Approach:
Describe the methodology, flowchart, system architecture, tools, and technologies you will use. Explain the step-by-step approach to achieve the project goals.
Explain your proposed methodology and approach here.</td><td>Technology Stack:<table><tr><td>Layer</td><td>Technology</td></tr><tr><td>Frontend</td><td>React.js, HTML, CSS, JavaScript, Tailwind CSS</td></tr><tr><td>Backend</td><td>Node.js, Express.js</td></tr><tr><td>Database</td><td>MongoDB</td></tr><tr><td>DevOps</td><td>Git, Github</td></tr><tr><td>Others</td><td>AI APIs, PDF Parsing Libraries</td></tr></table></td></tr>
<tr><td>g</td><td>Innovation and Originality
Innovation:
Describe new techniques, algorithms, tools, or integrations used. Originality: Highlight how your work adds new knowledge or value to the field.
Explain how your project is innovative and original.</td><td>Innovation
AI-driven topic clustering for automatic mind map generation.
Context-aware Q&A system directly linked to document content.
Unified learning platform combining summaries, visuals, and interaction.
Originality
Unlike traditional PDF tools, LearnSphere AI focuses on conceptual learning rather than just text extraction, offering a more engaging and effective learning experience.</td></tr>
<tr><td>h</td><td>Tentative: Project Plan, Timeline, and Roles.</td><td><table><tr><td>Phase</td><td>Task</td><td>Start Date</td><td>End Date</td><td>Responsible Member</td></tr><tr><td>Phase 1</td><td>Background Study</td><td>Week 1</td><td>Week 2</td><td>All Members</td></tr><tr><td>Phase 2</td><td>Design & Planning</td><td>Week 3</td><td>Week 3</td><td>All Members</td></tr><tr><td>Phase 3</td><td>Development</td><td>Week 4</td><td>Week 8</td><td>All Members</td></tr><tr><td>Phase 4</td><td>Testing & Debugging</td><td>Week 9</td><td>Week 9</td><td>All Members</td></tr><tr><td>Phase 5</td><td>Deployment (if applicable) & Report</td><td>Week 10</td><td>Week 10</td><td>All Members</td></tr></table></td></tr>
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