

Project Proposal

**"Introducing Multilingual AI-Powered Platforms
for Students and Teachers Supports Tests,
Question Banks, and Assignments, AI
DoubtSolving Teacher. "**

Gyansopan

Submitted To:

Date:[/ /]

Chainworks Digital Pvt Ltd.

Address: Office No. 9, Second Floor,
Prasad Apartment, Near Nal Stop Metro
Station, Erandavane, Pune, Maharashtra
411004



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Subject

We respectfully request the [Name of Organization] to consider implementing our AI-powered software tool, GYANSOPAN. The platform is designed to assist students and teachers with tests, question banks, and assignments in multiple regional languages. By leveraging GYANSOPAN, we aim to bridge educational gaps, enhance learning experiences, and ensure equitable access to educational resources for all students across the state, regardless of their linguistic backgrounds or geographical locations. Moreover, GYANSOPAN is accessible from any device, further facilitating seamless learning opportunities for every student.

About GYANSOPAN

The term "GYANSOPAN" is derived from two Sanskrit words: "GYAN," meaning "Knowledge," and "SOPAN," which translates to "Steps." Together, GYANSOPAN represents the journey or steps toward acquiring knowledge. GYANSOPAN is an AI-powered web platform accessible through any browser on various devices. It is specifically designed to assist educational institutions—such as schools and universities along with teachers, students, and parents. The platform's main goal is to improve students' academic performance and skill development.

Key features of GYANSOPAN include comprehensive question banks available in multiple regional languages, a wide range of tests and assignments for students, and in-depth tracking of student performance. This includes monitoring students' ability to solve different types of questions, the time spent on each, and other essential metrics.

The platform also leverages Optical Character Recognition (OCR) technology to extract data from PDF documents. This enables GYANSOPAN to efficiently generate question banks and academic materials.

Additionally, GYANSOPAN integrates Bloom's Taxonomy for content classification and incorporates open-source data from various internationally recognized competitive exams, including Olympiads like the Ramanujan Contest and the Gauss Contest.

To further enhance the experience, GYANSOPAN features AI-based proctoring to monitor and detect any unauthorized activity during tests and assignments. It provides AI-driven analysis and generates detailed reports, allowing teachers and parents to assess student performance with ease and accuracy.



Problem Statement for GYANSOPAN

Background: In India, students face significant barriers to accessing quality education and assessment tools. These challenges are particularly evident in rural and underserved areas, where geographical limitations, language barriers, and a lack of educational infrastructure create disparities in learning opportunities. Additionally, educational institutions struggle with inefficiencies in administrative processes, resource management, and assessment procedures.

Problem Definition

The current education system in India faces critical challenges that hinder equitable learning and efficient evaluation. These challenges include:

Limited Accessibility and Inclusivity

- Students in rural and remote areas lack access to standardized examinations and learning resources.
- Language barriers limit students' ability to understand and engage with educational materials, especially in states with diverse linguistic demographics.
- There is an urgent need to bridge the gap between urban and rural education systems, ensuring equal opportunities for all students across Indian states and districts.

Inefficiencies in Operational and Resource Management

- Educational institutions face high administrative burdens due to manual processes in registration, exam management, and student assessments.
- Resource allocation for exams and assessments is inefficient, resulting in increased costs and logistical challenges, particularly in government schools.
- Dependency on physical materials creates financial strain and environmental concerns, making digital transformation a necessity.

Gaps in Educational Quality and Personalization

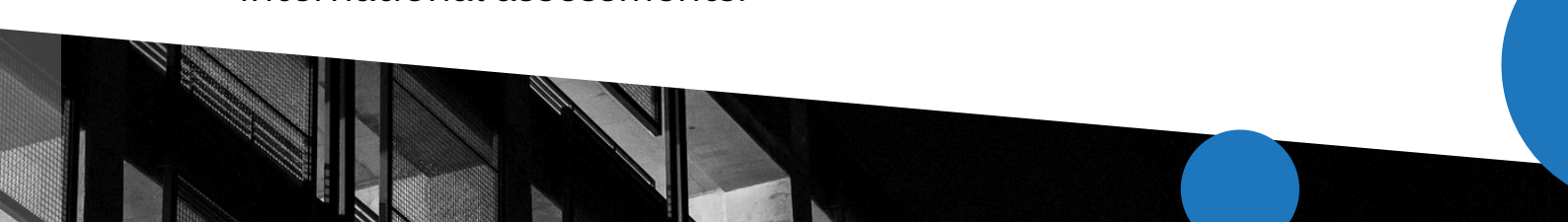
- Lack of detailed performance analytics prevents targeted improvements in teaching and learning outcomes.
- Students do not receive personalized learning experiences based on their strengths, weaknesses, and interests.
- Educators spend significant time on administrative tasks, reducing their ability to focus on instructional activities.

Challenges in Assessment and Evaluation

- Traditional assessment methods lack flexibility, customization, and real-time feedback.
- Policymakers and educators require comprehensive data insights to track student progress and improve educational strategies.
- Students need continuous learning opportunities, including mock tests and assignments, to prepare for higher education and national-level competitive exams like JEE, NEET, and UPSC.

Insufficient Technological Integration and Security

- Current education systems do not leverage AI-driven automation for scalability and efficiency.
- Examination integrity is compromised due to inefficient monitoring and security loopholes, leading to concerns about malpractice.
- There is a lack of modernization in educational tools, hindering students' ability to compete on a global scale and prepare for international assessments.



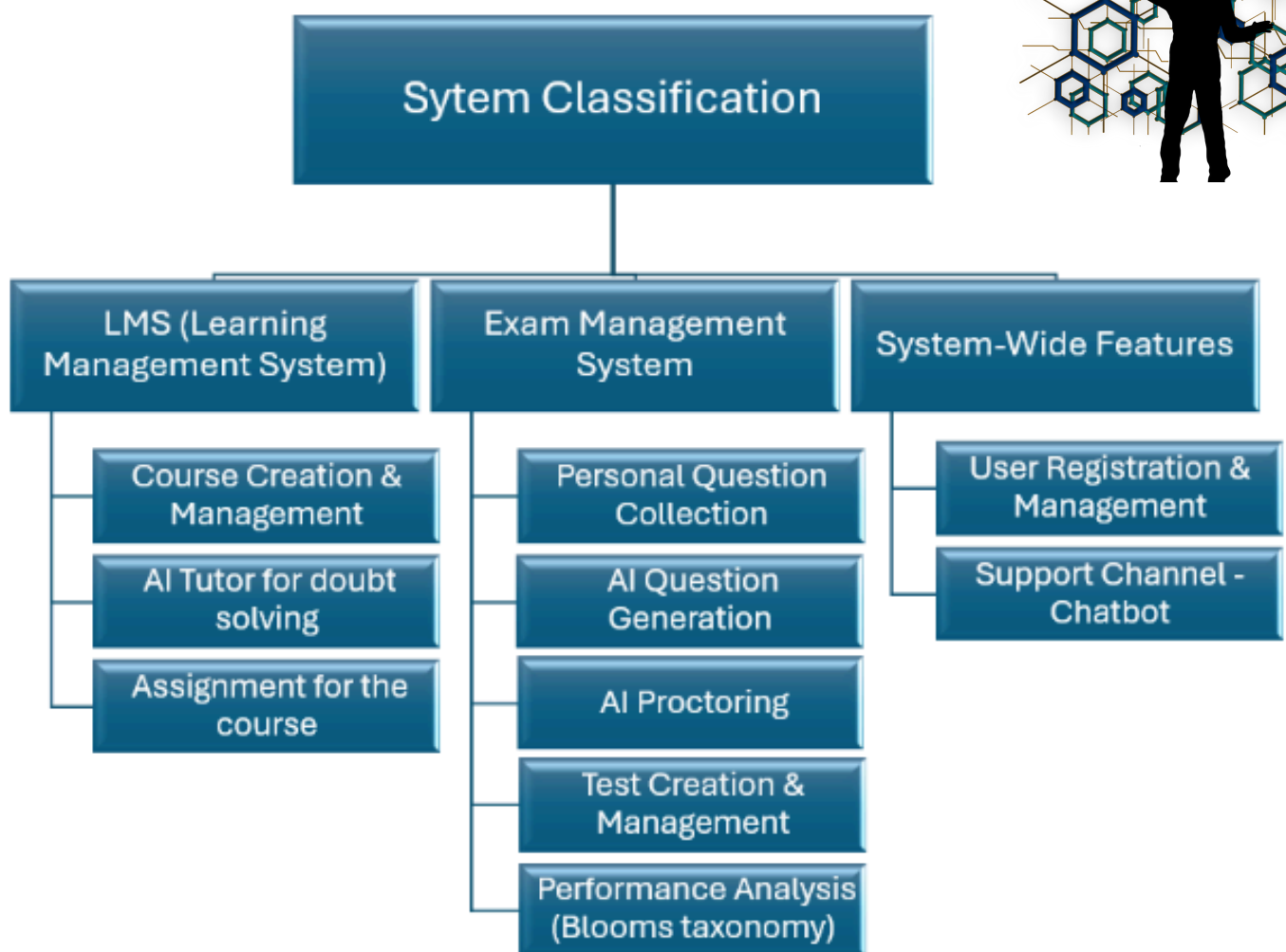
Need for a Solution

The above challenges highlight the necessity of an innovative, technology-driven platform that:

- Ensures equitable access to educational resources and assessments across diverse geographical and linguistic backgrounds in India.
- Streamlines administrative processes, reducing workload and costs for institutions, particularly in government-run schools.
- Implements AI-driven analytics for personalized learning and improved teaching methodologies tailored to the Indian curriculum.
- Provides flexible and secure assessment methods that cater to students' diverse learning needs, including CBSE, ICSE, and state board examinations.
- Enhances the overall Indian education system by incorporating modern technological solutions aligned with the National Education Policy (NEP) 2020.

GYANSOPAN aims to address these challenges by leveraging advanced technologies to create an accessible, efficient, and high-quality education system that benefits students, educators, and policymakers across India.

System Classification



GYANSOPAN Module

1. GYANSOPAN System Registration: The GYANSOPAN System offers a comprehensive registration process designed for institutes, teachers, and students, allowing for a streamlined educational experience.

- 1. Institute Registration:** Institutes, including schools, colleges, and universities, can easily register themselves on the GYANSOPAN System. Upon registration, the institute will have the capability to manage both teachers and students under its umbrella, ensuring a centralized system for all educational activities.
- 2. Teachers Registration:** Teachers can register individually in the GYANSOPAN System. Once registered, teachers can manage their courses, interact with their students, and track their progress. Additionally, students can be enrolled under specific teachers, creating a direct connection between educators and learners.
- 3. Students Registration:** Students have the flexibility to register directly on the GYANSOPAN System. Alternatively, they can register under a specific teacher if desired. This flexible registration process allows for individual or teacher-guided enrollment.
- 4. Bulk Registration:** For large-scale registrations, the GYANSOPAN System supports bulk registration. This feature allows institutes to upload multiple registrations for teachers and students simultaneously, saving time and effort for administrators and ensuring smooth onboarding for everyone involved.

This multi-tiered registration approach enhances the system's usability, making it adaptable to various educational environments.





GYANSOPAN Module

2. Dashboard: The dashboard serves as the central hub for users, providing a quick overview of essential features and updates, ensuring an efficient and organized experience.

1.Events and Updates Notifications: Users receive real-time notifications about important updates, such as exam registration deadlines, exam schedules, course announcements, and system-wide alerts.

2.Course List: Displays a comprehensive list of available courses, including detailed information like course name, instructor, description.

3.Test List: Shows all upcoming and completed tests, along with their assigned subjects, schedules, and status (e.g., upcoming, completed).

3. COURSE (Self-Paced): This section allows for course management, including creation and registration.

1.Create Course: Institutes or teachers can create new courses, providing details such as the syllabus, duration, and instructor information.

2.Register Course: Students can enroll in courses based on their interests or specific requirements.

GYANSOPAN Module



4. ASSIGNMENT: This module enables teachers to create and manage assignments.

- 1. Create Assignment:** Teachers can design assignments associated with specific courses, setting deadlines for submission and defining grading criteria.
- 2. Student Submission:** Students can complete and submit their assignments via the platform.
- 3. Course Linkage:** Assignments are directly linked to the relevant courses, ensuring organized evaluation and tracking.
- 4. Assign Assignment:** The assignments are distributed to students enrolled in the corresponding courses.

5. Test Creation: This module facilitates the creation, evaluation, and submission of assessments, incorporating AI-driven proctoring and performance analytics.

- 1. Test Creation:** Educators can design assessments by specifying parameters such as test type, duration, question format (e.g., multiple-choice, descriptive), and passing criteria.
- 2. Test Assignment:** Tests can be assigned to specific students or linked to exam registrations.
- 3. AI Proctoring:** AI-powered proctoring ensures test integrity by monitoring student activity in real time, detecting any suspicious behavior to prevent cheating.
- 4. Results and Submission:** Upon submission, tests are evaluated, with automated grading for objective questions and manual review for descriptive answers.



GYANSOPAN Module

6. Test Management: The Test Management module starts the process by allowing teachers to create tests. This includes defining the test type, duration, question format, and passing criteria. Once a test is created, it can be assigned to specific students or linked to a particular exam.

1. Exam Registration: After the test is created, the Registration module comes into play. In this module, institutes or teachers can register exams by defining exam details such as the test type, grade, duration, and prerequisites. Students can then enroll in these registered exams through various methods, either independently or through bulk registration.

1. Student Registration for Exams: Once the exam is registered, students need to be enrolled. This process is facilitated through the Registration module, where students can register themselves, or teachers/institutes can register them individually or in bulk.

7. Public Question Bank: The Question Bank provides a large collection of public questions that institutions and teachers can use directly to create assignments and mock tests.

Key Features:

1. Ready-to-use questions for assignments and tests.



GYANSOPAN Module



8. Personal Question Collection:

1. **Manual Question Creation:** Teachers can manually create and add their own questions to the system for future use, allowing personalized assessments tailored to their curriculum.

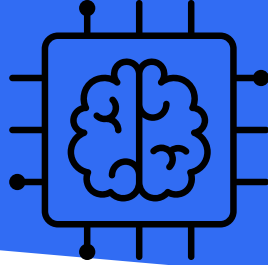
Key Features:

1. Custom questions based on specific teaching needs.
2. Reusable for future assignments.
3. **AI Generated Questions:** AI technology helps teachers generate questions from textbooks and their own content, saving time and effort in creating assessments.

Key Features:

1. AI generates questions from provided content.
2. Multiple question formats (e.g., multiple choice, true/false).

These features streamline content creation, enhance assessments, and offer flexibility for teachers and institutions.



GYANSOPAN Module

9. AI Teacher Interaction: The AI Teacher module enhances student learning by offering AI-powered doubt resolution, interactive conversations, and video-based learning. It provides multilingual responses and keeps a record of student queries for future reference.

- AI-Powered Doubt Resolution
- Students subscribed to specific modules can instantly interact with the AI Teacher to resolve academic doubts.
- The AI Teacher offers contextual, subject-specific explanations to help students better understand concepts.
- Interactive AI Teacher: Students can engage in real-time conversations with the AI Teacher, replicating the experience of interacting with a human instructor.

Key features include:

Multilingual Support: AI responds in the student's preferred language.

Question Understanding: AI processes and answers complex academic questions with detailed, step-by-step explanations.

Question History Management

The system logs all student queries and AI responses.

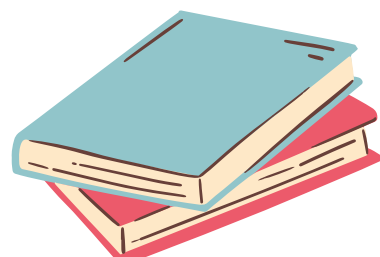
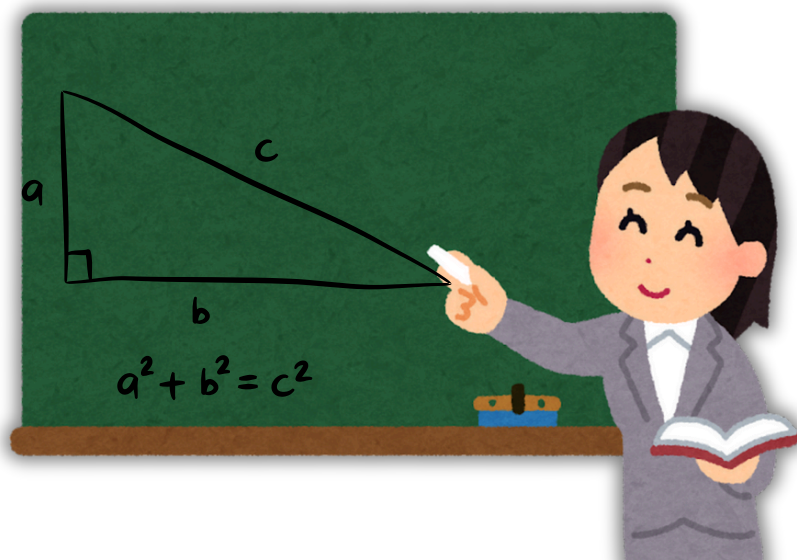
Students can revisit past questions and answers for review and reference.





GYANSOPAN Features: For Teachers

- **AI Avatar Generator:** Teachers can create personalized AI avatars, allowing them to represent themselves as virtual instructors in an engaging and innovative way.
- **AI Question Generator:** Effortlessly generate questions based on textbooks and custom content, simplifying the creation of assessments and assignments.
- **Unlimited Course Creation:** Teachers can create an unlimited number of courses, offering flexibility to design a wide range of learning experiences.
- **Unlimited Test Creation:** Generate an unlimited number of mock tests and live tests for continuous assessment and feedback for students.
- **Proctored Test Feature:** Teachers can create proctored tests to monitor students' activities during exams, ensuring integrity and preventing malpractice.



GYANSOPAN Features: For Students

- **Access to Unlimited Assignments and Tests:** Students have unlimited access to assignments and tests, allowing them to practice and improve at their own pace.
- **AI-Powered Performance Insights:** Personalized insights into progress, strengths, and areas for improvement using AI-driven performance analysis.
- **AI Tutor for Doubt Solving:** Students can interact with an AI-powered tutor for real-time assistance in resolving doubts and questions.
- **Public Question Bank:** Access to a shared public question bank for various exams, such as NTS, MTS, and scholarships, supporting effective test preparation.



For Institutions:

- **Centralized Dashboard:** Institutes have access to a centralized dashboard for tracking student performance, teacher activities, and course progress, providing a holistic view of the academic ecosystem.
- **Bulk Enrollment Management:** Institutes can efficiently manage bulk enrollments for courses and tests, making it easier to scale educational offerings to large groups of students.
- **Institutional Analytics:** Advanced analytics and reports allow institutions to monitor overall student performance trends, teacher effectiveness, and course success, enabling data-driven decisions.
- **Proctored Exam Oversight:** Institutes can use the proctored exam feature to ensure exam integrity for large student bodies, minimizing the chances of malpractice and maintaining fairness.



Platform Features

- **Cloud Hosting:** Hosted on the cloud, ensuring global access and seamless operation from any location, with high scalability and security.
- **Online Workshops and Demonstrations:** The platform allows the hosting of interactive online workshops and demonstrations for live engagement between teachers and students.
- **Multilingual Feature:** The platform offers support for multiple languages (e.g., Marathi, Hindi, English, Odia, etc.), ensuring accessibility for users across different linguistic backgrounds.
- **User Friendly Interface:** Users can easily operate the entire system through its simple, interactive interface.



Implementation of GYANSOPAN

GYANSOPAN has been successfully implemented at Bhaskaracharya Pratishthan Pune, a distinguished Educational and Research Institute specializing in Mathematics. This platform facilitated the conduct of the BMTSC (Bhaskaracharya Mathematics Talent Search Competition) competitive examination for the academic years 2022-2023 and 2023-2024. Bhaskaracharya Pratishthan, recognized by the National Board of Higher Mathematics NBHM (Government of India), is entrusted with the responsibility of administering the Regional Mathematics Olympiad examination in the Maharashtra and Goa states region. For further information, please visit <https://www.bprim.org/>.



About Us

Chainworks Digital Private Limited is a start-up company, registered in Mumbai ROC Maharashtra. The company is founded by the alumni of IIT Bombay and Pune University. The company is financially supported by the SOCIETY FOR INNOVATION & ENTREPRENEURSHIP (SINE), a section of IIT Bombay. The company is actively working with the State Government of Maharashtra for Organ Donations and Transplants software MAHAAYUDAAN's design, development, implementation and its maintenance.

With over 15 years of collective expertise in product research, development, and implementation, Chainworks is committed to guiding clients from ideation to execution, helping them thrive in a rapidly evolving digital economy. The company's mission is to empower enterprises and governments to embrace the transformative potential of blockchain technology by focusing on innovative, secure, and scalable solutions that ensure transparency, efficiency, and trust.

Chainworks' core values include innovation, integrity, customer-centricity, collaboration, excellence, and sustainability. The company emphasizes secure and scalable solutions, transparency, agility, a knowledge-driven approach, and accountability in all its projects. By leveraging cutting-edge technology and a commitment to excellence, Chainworks aims to revolutionize the way businesses operate in the digital age. For further information, please visit <https://www.chainworks.io>.

