1. **PROJECT PROPOSAL:** Inquiro

1.1 Background to the Problem

In colleges and universities, students often struggle with doubts while studying. Sometimes, they may be too hesitant to approach teachers or the teacher may not be available. Many people look online but fail to find clear or reliable answers that fit their context or curriculum. Social media chats and groups can become disorganized, full with irrelevant content and lack in quality control.

The absence of a structured, student-friendly platform where peers and teachers can address academic concerns is the main cause of this issue. Unlike general platforms like Quora or Stack Overflow that focus on broader audiences (coding or general questions) students need a dedicated application matching their academic environment.

This is an important issue because unresolved doubts can build gaps in learning, increase stress, reduce motivation and affect academic performance.

1.2 Solution to the Problem

Project Objective

Our project- Inquiro, aims to create a web-based platform for peer-to-peer learning and doubt solving. The goal is to connect students with their peers and mentors in a more organized and supportive environment.

Proposed Solution

Inquiro will allow students to:
- Post academic questions using text, images or both.
- Get responses from other students and peer tutors.
- Respond using text, images, videos or YouTube and article links.
- Upvote or downvote system so that the best responses appear to the top.
- Earn points, rank and appear on leaderboards to motivate them.
- Join subject-wise or class-wise forums to keep discussions organized and focused.
- Join schedule consulting sessions with peer tutors or mentors for more in-depth help.
- Post and browse announcements regarding academic competitions or events.
- Participate in a community that is controlled and has admin control, rules and user management tools (such as the ability to ban rule breakers).

This solution is appropriate because it addresses the communication and learning gaps faced by students. It promotes collaborative learning, uses gamification to encourage participation and maintains quality and safety through moderation.

The solution is technically feasible and can be done with current web development capabilities. Such a platform can be developed efficiently using modern frameworks (e.g. React, Node.js).

Key Functionalities

- Question and answer interface supporting text, images and video.
- Gamification system (points, ranking, leaderboard).
- Forum structure for subject-wise discussion.
- Rule-based moderation system for content safety.
- Real-time consulting session booking system.
- Event noticeboard for student collaboration and engagement.

Target Users & Benefits

Target Users:
- University students
- College students
- Peer tutors and educators

Benefits:
- Get academic doubts resolved quickly and reliably.
- Connect with peers and seniors for learning support.
- Stay motivated through ranking and achievements.
- Join subject-specific groups for organized help.
- Access extra support through consulting.
- Discover academic events and competitions easily.

Scientific Contribution

Inquiro promotes collaborative learning and knowledge-sharing culture. It supports active learning, which is more effective than passive methods. The platform documents learning patterns, engagement metrics and can serve as a dataset for educational research in peer learning systems.

Literature Review

Several studies have explored the role of peer learning and Q&A forums in education:
- Stack Overflow has shown how technical Q&A can help in skill-building, but it is programming-centric and not student-focused.
- Quora is general-purpose and lacks of academic structure.
- Piazza is used in some universities for academic Q&A, but it's mostly controlled by the professor.
- Reddit-style forums have shown the power of community answers but these are often unmoderated and unfocused.

Inquiro learns from these models but extends their ideas with:
- Academic structure Q&A and environment.
- Strong focus on peer learning (students helping students).
- Built-in gamification for continuous engagement.
- Moderation tools to maintain quality and safe interaction.

- Additional features like consulting sessions and event boards that current solutions lack.

Existing Software

Some platforms that partially solve parts of this problem:
- Stack Overflow: Great for developers, lacks support for general student academic queries.
- Quora: Broad and general, no academic filtering or control.
- Piazza: Class-based Q&A, but limited access and interaction beyond enrolled courses.
- Facebook/WhatsApp groups: Too informal, unorganized and hard to moderate.

How Inquiro Improves on Them:
- Focused only on students and educators.
- Well-structured by class and subject.
- Built-in gamification features.
- Offers direct help from peer tutors through consulting.
- It has a safe and moderated environment.
- Includes event promotion features, helping students stay informed.

2. SOFTWARE DEVELOPMENT LIFE CYCLE

2.1 Process Model

Selected Model: Scrum
Inquiro is a web-based peer to peer learning and doubt-solving platform which requires continuous improvement, frequent feedback and adaptability according to user needs. Since this project is user-focused, with features like Q&A posting, forums, gamification and session scheduling, it's crucial that we remain flexible and able to adjust features quickly based on feedback from students and educators.

Among the other methods, we chose Scrum because:
- Scrum focuses on regular feedback and iterative development. Inquiro has multiple user-facing features that need to be built step-by-step, tested frequently and improved in response to user feedback.
- Scrum's well-defined roles (scrum master, product owner, scrum team, customer, and management) facilitate teamwork. This framework maintains task organization and promotes teamwork.
- The product can be divided into manageable features (e.g., Q&A system, gamification, forum setup), each delivered in short development cycles called sprints. This will let us test and demonstrate working parts of the system frequently.
- It encourages continuous communication, which is suitable for our student team. As regular meetings and reviews will help us track progress and solve backlog quickly.

Justification for Selecting Scrum Over Other Methodologies

Limitations of Extreme Programming (XP):

- Strongly focused on developer practices like pair programming and test-driven development, which may be too intense or impractical for a small student team.
- Enforces strict coding practices that can slow down early development stages.
- May not align with Inquiro's broader scope (consultation system, moderation tools).

Limitations of the Dynamic Systems Development Method (DSDM)
- Introduces a formal and structured process with predefined roles and documentation, adding unnecessary complexity to an agile, community-facing project.
- Designed primarily for business-critical, corporate environments with fixed time and budget constraints.
- Slower implementation process, making it less suitable for quick deployments and iterative feedback cycles.

Limitations of the Feature-Driven Development (FDD)
- Requires stable and predefined feature sets, which may not suit a project where features evolve based on real-world feedback.
- Model driven approach reduces flexibility, making it harder to adapt to user or policy changes.
- Developer-centric, with limited focus on end-user engagement, which is crucial in a learning platform involving students and educators.
- More suited to large-scale, well-defined enterprise projects.

2.2 Project Role Identification and Responsibilities

Role	Assigned To	Responsibilities
Scrum Master	Arafat Hossain	Ensures the team follows Scrum rules, practices and values throughout the project. Communicate regularly with the team, customer and management to keep everything on track. Helps remove any obstacles the team faces.
Product Owner	Al Imran Alif	Responsible for managing and prioritizing the Product Backlog. Makes final decisions about what features and tasks to focus on. Acts as a bridge between the development team and stakeholders to reflect the project vision.
Scrum Team	Rami Hossain	Responsible for doing the actual development work. Self-organizes to complete tasks in each Sprint. Participates in effort estimation, Sprint planning, reviews and identifying any blockers or improvements needed.
Customer	Omur Abu Yousuf	Provides input on which features are most needed. Helps define and clarify Product Backlog items based on their expectations and needs from the system.
Management	Rajarshi Mondal	Makes key decisions related to the project's direction. Helps define project goals, sets expectations and ensures standards and agreements are followed throughout development.