**SYNOPSIS**

**Report on**

**Project Catalyst**

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**ABSTRACT**

The "**Project Catalyst**" is a web-based platform designed to facilitate collaboration between students and faculty members within an educational institution. This synopsis outlines the core features of this project.

This platform simplifies the process of sharing and approving project ideas. Students can browse a list of available projects, each with a title, description, and faculty member's name. They can then propose projects they're interested in, submitting detailed plans and motivations. Faculty members, on the other hand, have the authority to add project ideas, approve or reject student proposals, and mark projects as unavailable once approved.

The "**Project Catalyst**" is built using **HTML-5**, **CSS, PHP,** and **Bootstrap** for a user-friendly and responsive interface. It addresses the need for transparency and efficiency in project management within educational institutions, streamlining the project selection process.

In summary, the "Project Link Hub" SRS provides a concise overview of a web platform that aims to enhance collaboration and innovation by connecting students and faculty members through a centralized hub for project ideation and management.

**TABLE OF CONTENTS**

Page Number

1. Introduction 4
2. Literature Review 5
3. Project / Research Objective 6
4. Requirements
   * + - Hardware Requirement 7
       - Software Requirement 8
5. Proposed Time Duration 10
6. References/Bibliography 11-12

**INTRODUCTION**

The "Project Catalyst" is an innovative web-based platform poised to revolutionize project collaboration within educational institutions. This dynamic system serves as a digital nexus, connecting students and faculty members, streamlining project ideation, approval, and management. With an intuitive user interface built on HTML, CSS, PHP, and Bootstrap, the platform empowers students to explore, propose, and participate in projects aligned with their academic interests. Simultaneously, it equips faculty members with tools to oversee projects, add new ideas, and ensure project exclusivity. The "Project Catalyst" promises to enhance transparency, efficiency, and collaboration in the world of educational project development.

**Literature Review**

In the realm of education, digital platforms have emerged as vital tools to foster collaboration. These platforms facilitate project ideation and management, connecting students and faculty. Research underscores the positive impact of such platforms on project outcomes and engagement.

Efficiency and transparency are recurring themes in project management literature. The "Project Catalyst" addresses these concerns by centralizing project ideation, submission, and approval processes, aligning them with institutional goals.

Enhancing student-faculty collaboration is pivotal in education. Collaborative projects improve interactions and learning outcomes. The "Project Catalyst" capitalizes on this by promoting meaningful collaboration through its digital platform.

The integration of technology in education is on the rise. Leveraging HTML, CSS, PHP, and Bootstrap, the "Project Catalyst" exemplifies the use of technology to create user-friendly educational tools.

In summary, the "Project Catalyst" aligns with current educational technology trends and literature, providing an efficient, transparent, and collaborative project management system for educational institutions. This review underscores its relevance and potential impact.

**Project Objective**

The primary research objective of the "Project Catalyst" project is to design, develop, and implement a web-based platform that streamlines project collaboration within educational institutions. The specific research goals include:

1. **Enhancing Collaboration:** To create a digital space that fosters collaboration and engagement among students and faculty members, allowing them to share project ideas and work together effectively.
2. **Efficient Project Management:** To develop an efficient system for project ideation, proposal submission, approval, and management, reducing administrative burdens and improving the project selection process.
3. **Transparency:** To promote transparency in the project approval process, ensuring that students have clear insights into the status of their proposals and faculty members can make informed decisions.
4. **User-Friendly Interface:** To design a user-friendly interface using HTML, CSS, PHP, and Bootstrap, making it accessible and intuitive for both students and faculty members.
5. **Academic Impact:** To assess the impact of the "Project Catalyst" on student-faculty collaboration, project outcomes, and overall academic success within the educational institution.
6. **Scalability and Sustainability:** To create a platform that is scalable to accommodate a growing user base and sustainable in terms of long-term usability and maintenance.

These research objectives will guide the development and evaluation of the "Project Catalyst," ensuring that it effectively addresses the needs of educational institutions and contributes to a more collaborative and efficient project management ecosystem.

**Hardware Requirements:**

1. **Server Hosting:**
   * A reliable web server to host the "Project Catalyst" platform.
   * Sufficient server resources (CPU, RAM, and storage) to handle concurrent user traffic and database operations efficiently.
2. **Database Server:**
   * A database server, preferably MySQL or a compatible relational database management system, for storing project data, user information, and system logs.
3. **Network Infrastructure:**
   * High-speed internet connection to ensure the platform's accessibility and responsiveness.
   * Secure network protocols (e.g., HTTPS) for data encryption and protection during data transmission.
4. **Backup and Redundancy:**
   * Regular data backups to prevent data loss in case of server failures.
   * Redundancy measures to minimize downtime, such as failover configurations or load balancing.
5. **Scalability:**
   * Scalable infrastructure that allows for easy expansion of server resources as the user base grows.

**Software Requirements**

1. **Operating System:**
   * A server-grade operating system like Linux (e.g., Ubuntu, CentOS) or Windows Server, chosen based on the server hosting provider's compatibility and system administrators' expertise.
2. **Web Server:**
   * A web server software such as Apache, Nginx, or Microsoft Internet Information Services (IIS) to serve web pages and handle HTTP requests.
3. **Database Management System (DBMS):**
   * MySQL or an equivalent DBMS for creating and managing the relational database where project data and user information will be stored.
4. **Programming Languages:**
   * PHP for server-side scripting to build the web application's functionality.
   * HTML, CSS, and JavaScript for front-end web development.
5. **Development Frameworks:**
   * Bootstrap framework for creating responsive and user-friendly web interfaces.
   * Any additional PHP frameworks or libraries for application development, if required.
6. **Security Measures:**
   * Security software and configurations to protect against common web vulnerabilities, including firewalls, intrusion detection systems, and regular security updates.
7. **Version Control:**
   * A version control system (e.g., Git) for tracking changes in the source code, enabling collaboration among developers, and facilitating code management.
8. **Development and Testing Tools:**
   * Integrated development environments (IDEs), code editors, and debugging tools for software development and testing.
9. **Monitoring and Analytics:**
   * Tools for monitoring server performance, error tracking, and user analytics to identify and resolve issues and improve the platform's efficiency.
10. **Documentation and Collaboration Tools:**
    * Documentation software (e.g., Confluence or Wiki) for maintaining project documentation.
    * Collaboration tools like project management software (e.g., Jira) for team coordination, task tracking, and project planning.

These hardware and software requirements serve as the foundation for setting up the "Project Catalyst" platform. They ensure the reliability, security, scalability, and performance of the system, creating a robust environment for facilitating project collaboration within educational institutions.

**Proposed TimeDuration**

**Week 1-2: Planning and Design**

* Define project scope and objectives.
* Quickly create a basic system design.
* Select essential technologies and frameworks.

**Week 3-6: Development and Testing**

* Set up a minimal development environment.
* Code core functionalities.
* Perform rapid testing and debugging.

**Week 7-8: User Testing and Refinement**

* Start user testing with a small group.
* Gather feedback and make immediate adjustments.
* Continue refining features.

**Week 9-10: Documentation and Deployment**

* Create basic documentation.
* Deploy a core version with critical features.
* Configure essential security measures.

**Week 11-12: Ongoing Maintenance**

* Monitor platform performance and user feedback.
* Prioritize bug fixes and critical improvements.
* Continuously assess effectiveness.

This highly accelerated schedule focuses on delivering a functional core platform quickly, with plans for ongoing improvement based on user feedback and needs.

**REFERENCES/ Bibliography**

**Bibliography:**

Online Platforms during the development of the "Project Catalyst," various online platforms were analyzed for inspiration and reference. These include:

• **Moodle:** An open-source learning management system widely used for creating and delivering online courses.

• **GitHub:** A popular platform for hosting and collaborating on software development projects using version control.

• **Canvas:** A learning management system designed to support teaching and learning in various educational settings.

• **Google Classroom:** A digital learning platform developed by Google for schools and educational institutions to manage assignments and communication.

• **Blackboard:** A leading learning management system used by educational institutions worldwide for course management and online learning.

YouTube Channels

The following YouTube channels were referenced for educational content related to programming and computer science:

• **Jenny's Lectures CS IT:** A YouTube channel offering lectures and tutorials on computer science and information technology topics.

• **Gaurav Sen:** A popular Indian programming teacher known for his informative videos on software engineering concepts and interview preparation.

• **Apna College:** A YouTube channel providing tutorials on programming languages and web development in Hindi.

• **CodeWithHarry:** A Hindi-language YouTube channel offering tutorials on programming languages like Python, Java, and C++.

**Reference Books:**

The development of the "Project Catalyst" drew insights from various reference books related to web development, collaboration, and project management. These include:

• "Web Development with HTML, CSS, and JavaScript" by Jon Duckett

• "PHP and MySQL Web Development" by Luke Welling and Laura Thomson

• "Agile Project Management with Scrum" by Ken Schwaber and Mike Beedle

• "Collaborative Learning Techniques: A Handbook for College Faculty" by Elizabeth F. Barkley

• "Effective Project Management: Traditional, Agile, Extreme" by Robert K. Wysocki

• "Version Control with Git" by Jon Loeliger and Matthew McCullough