

**DEPARTMENT OF COMPUTER SCIENCE AND ENGINEERING  
JATIYA KABI KAZI NAZRUL ISLAM UNIVERSITY, TRISHAL**

**Date:** 19 – 09 - 2024

1. **Name of the student:** Md. Khairul Islam  
**Roll:** 22102017  
**Session:** 2021 – 2022
2. **Name of the student:** Mst. Rokeya Akter  
**Roll:** 22102018  
**Session:** 2021 – 2022
3. **Programme:** B.Sc. (Engg.)  
**Proposal for:** CSE-200 : Software Development Project with Java/C++
4. **Name of the Proposed Supervisor:** Dr. A. H. M. Kamal  
**Designation:** Professor
5. **Date of First Enrolment in the Program:** 12 – 08 – 2024
6. **Tentative Title:** “Official Mobile Application for Programming Club”
7. **Background and present state of the problem:**

The CSE department currently lacks a centralized platform that allows students to enhance their programming skills, connect with alumni, and participate in a competitive coding environment. While some students may individually seek out online resources or coding platforms, there is no cohesive system that brings together learning, collaboration, and networking opportunities within the department.

Presently, students often rely on external platforms like Codeforces, LeetCode, or social media to connect with alumni or seek career guidance. However, these platforms do not provide a structured environment tailored specifically for the CSE department's needs. Additionally, the competitive programming culture within the department could benefit from a more organized and accessible platform where students can practice, compete, and track their progress.

Alumni, on the other hand, may want to engage with current students but lack a direct way to offer mentorship or share their experiences. As a result, opportunities for career guidance and networking are missed. This lack of a unified system to bridge

the gap between students and alumni is a significant challenge that needs to be addressed.

The proposed solution aims to address these issues by building a platform that brings together students, alumni, and learning resources, fostering a strong community focused on improving programming skills and career development.

## **8. Objectives with specific aims and possible outcome:**

### **Objective:**

- i. Create a central platform for CSE students to enhance programming skills through tutorials, practice problems, and coding challenges.
- ii. Foster a competitive environment by organizing contests, hackathons, and leaderboards to motivate continuous improvement.
- iii. Enable students to connect with the alumni network for career advice, mentorship, and opportunities like internships or job referrals.
- iv. Provide access to resources for academic and professional growth, including programming courses, research materials, and project collaborations.
- v. Facilitate community building by hosting discussion forums, workshops, and webinars with alumni and industry professionals.
- vi. Encourage collaborative learning by allowing students to form study groups, share resources, and solve problems together.
- vii. Track individual progress through personalized dashboards, achievements, and skill development reports.

### **Expected Outcomes:**

- i. Improved programming skills among CSE students through consistent practice and challenges.
- ii. A competitive environment that motivates students to achieve higher performance in coding and problem-solving.
- iii. Stronger connections between current students and alumni, fostering mentorship and career guidance.
- iv. Enhanced access to valuable learning resources, research opportunities, and project collaborations.
- v. Increased student engagement through participation in coding contests, workshops, and webinars.
- vi. Clear tracking of individual progress, helping students identify strengths and areas for improvement.

**9. Outline of Methodology/ Experimental Design:**

- i. Set up the development environment using Java for backend.
- ii. Design and implement a secure login system for students and alumni with role-based access.
- iii. Create the contest module where students can participate in weekly and monthly programming challenges.
- iv. Develop a leaderboard system to display real-time rankings and contest results.
- v. Build the alumni profile repository, showcasing career paths and success stories to inspire students.
- vi. Implement a discussion forum for collaborative problem-solving and knowledge sharing.
- vii. Integrate a performance tracking system to allow students to monitor their progress over time.
- viii. Test the application for functionality, security, and usability across multiple devices and platforms.

**10. References:**

- i. **Bloch, Joshua.** *Effective Java*. 3rd ed., Addison-Wesley Professional, 2018.
- ii. **Hardy, Brian, and Bill Phillips.** *Android Programming: The Big Nerd Ranch Guide*. 4th ed., Big Nerd Ranch, 2019.
- iii. **Murray, John Horton.** *Android Programming for Beginners: Build in Java, Android Studio, and IntelliJ IDEA*. 3rd ed., Packt Publishing, 2021.
- iv. **Schildt, Herbert.** *Java: The Complete Reference*. 12th ed., McGraw-Hill Education, 2021.

**11. Department's (Higher Study committee) or (Academic committee meeting) reference: (filled up by HSC/Dept. Head)**

**Meeting No.:**

**Resolution No.:**

**Date:**

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Signature of applicant

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Signature of supervisor

