Green University of Bangladesh

Department of Computer Science and Engineering

Program: CSE (Regular) I Spring 2023

Lab Project Proposal

Course Title: Computational Thinking and Problem Solving

Course Code: CSE 100

Section: 231 D1

Student Details

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Assigned Date: 23/05/23

Submission Date: 30/05/23

Instructor: Saurav Chandra Das

Project Proposal Evaluation	
Marks:	Signature:
Comment:	Date:

Title: Development of GUB Admission Scholarship Calculator

1. Introduction:

This lab project aims to outline the plan for designing and implementing an Admission Scholarship of the Green University of Bangladesh Calculator using the C programming Language. The calculator will help admission aspirant students estimate their potential scholarships based on predefined criteria such as academic results, standardized test scores, and extracurricular activities.

2. Problem Domain and Motivation:

Generally, aspiring undergraduate students apply for admission to a university, they often seek to identify opportunities that align with their specific needs. One such consideration is the availability of admission scholarships. To streamline this process, the implementation of an admission scholarship calculator would be highly beneficial. Without such a tool, students may encounter challenges in obtaining timely information about the total cost of their undergraduate education in a specific subject area, as they would need to contact the admissions office, provide their academic results and extracurricular activities, and wait for a response. In some cases, due to the admissions office's busy schedule, it may not be possible to reach them within the desired timeframe.

During my admission, I also encountered this problem. To provide a more user-friendly interface, it is needed to have GUB Admission Scholarship Calculator on the website of the Green University of Bangladesh. So, I have chosen to work on this problem by developing GUB Admission Scholarship Calculator.

3. Objective:

The objective of this project is as follows:

- Design and develop an Admission Scholarship Calculator program using the C programming language
- Implement a user-friendly interface that allows students to input their academic and extracurricular data
- Calculate and display estimated scholarship amounts based on predefined criteria
- Incorporate error handling and validation techniques to handle incorrect or invalid inputs
- Prepare detailed documentation including user guidelines and write a comprehensive project report highlighting challenges, lessons learned, and potential areas for future enhancements.

4. Methodology:

To achieve the mentioned objectives, the following methodology will be followed during the development of the GUB Admission Scholarship Calculator project:

a. **Design:**

- Identify the necessary criteria for scholarship calculation, such as GPA, test scores, and extracurricular activities
- Plan the user interface to collect the required input data from students
- Determine the formula or algorithm to calculate the estimated scholarship amount based on the given inputs

b. **Implementation:**

- Set up the C programming environment, including a compiler or an Integrated Development Environment

- Develop the user interface, allowing students to input their academic and extracurricular data
- Implement the calculation logic based on the predefined criteria to estimate the scholarship amount
- Incorporate error handling and validation techniques to ensure accurate and reliable calculations

c. Testing and Debugging:

- Conduct comprehensive testing to validate the accuracy of the calculator's scholarship estimation
- Perform various test cases with different inputs, including boundary cases and corner cases
- Debug any issues or errors encountered during testing
- Optimize the code for performance, memory usage, and efficiency

d. Documentation:

- Prepare detailed documentation explaining the code structure, algorithms, and implementation details
- Document user interactions to effectively use the Admission Scholarship Calculator
- Create a comprehensive report summarizing the project, challenges faced and lessons learned

5. Resources:

The following resources will be required to successfully complete the project:

- A computer with the C programming environment (compiler or IDE) installed
- Access to relevant C programming resources, tutorials, and documentation
- Sample test cases to validate the calculator's functionality

- Admission scholarship criteria collected from the Green University of Bangladesh for testing purposes

6. Timeline:

The tentative timeline for the completion of this project is as follows:

- **Week 1:** Project Planning, research, and familiarization with the C programming language
- **Week 2:** Designing the user interface and determining the scholarship calculation criteria
- **Week 3 - Week 4:** Implementing the Admission Scholarship Calculator, including input validation and calculation logic
- **Week 5:** Testing, debugging and optimizing the code
- **Week 6:** Documentation, final testing and project submission

7. Conclusion:

Developing an Admission Scholarship Calculator using the C programming language provides students with an opportunity to apply their programming skills in a real-world scenario. This lab project will enhance their understanding of programming concepts, algorithm design, problem-solving abilities, and user interface development. Implementing this project will be solved the mentioned problem of aspiring admission candidates and save precious time for both the aspirants and the authority.