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**Green University of Bangladesh**

**Department of Computer Science and Engineering (CSE)**

**Faculty of Sciences and Engineering**

**Semester: (Spring, Year: 2025), B.Sc. in CSE (Day)**

**LAB PROJECT PROPOSAL**

# **Course Title: Algorithm Lab**

**Course Code: CSE 208**

**Section: 232-D9**

**Student Details**

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| **Name** | | **ID** |
| **1.** | Ashab Uddin | 232002274 |

**Lab Date : 26-02-2025**

**Submission Date : 04-03-2025**

**Course Teacher’s Name : Farjana Akter Jui**

**[For Teachers use only:Don’t Write Anything inside this box]**

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| **Project Proposal Status**  **Marks: ………………………………… Signature: .....................**  **Comments: ..............................................Date: ..............................** |

1. **TITLE OF THE PROJECT PROPOSAL**

Social Network Friend Recommendation System

1. **PROBLEM DOMAIN & MOTIVATIONS**

In social networking platforms like Facebook and LinkedIn, users often struggle to find new friends or professional connections efficiently. A Social Network Friend Recommendation System can help users discover potential connections based on mutual friends, shared interests, and graph-based algorithms.

* Mo1 – Improve social network engagement by suggesting relevant friend connections.
* Mo2 – Implement Graph Traversal Algorithms (BFS/DFS) to find and recommend friends.
* Mo3 – Provide an efficient algorithm for analyzing large-scale user networks.

1. **OBJECTIVES/AIMS**

The aim of this project is to develop an intelligent Friend Recommendation System that suggests new connections based on Graph Algorithms.

Objectives:

* Ob1 – Implement a Graph Data Structure where users are nodes and friendships are edges.
* Ob2 – Use Breadth-First Search (BFS) and Depth-First Search (DFS) for friend recommendations.
* Ob3 – Rank friend suggestions based on the number of mutual connections.

1. **TOOLS& TECHNOLOGIES**

This project will be developed using:

• Tools1 – Java (Core Java, Object-Oriented Programming)

• Tools2 – Graph Implementation: Java Collections (HashMap, HashSet, Array List)

• Tools3 – Graph Algorithms: BFS & DFS (Implemented using Queue and Stack)

1. **CONCLUSION**

The Social Network Friend Recommendation System will enhance user experience by suggesting relevant friend connections based on Graph Algorithms (BFS & DFS). By implementing efficient graph traversal techniques, this project will demonstrate how algorithms can be applied in real-word social networking applications.