CN LAB MINI PROJECT SYNOPSIS

Names:
Anurag Nayak, 210905016, anurag.nayak@learner.manipal.edu
Adruti Onam, 210905190, adruti.onam@learner.manipal.edu
Moksha Kothari, 210905017, moksha.kothari@learner.manipal.edu

Project Title: LAN Application Multiplayer Game.

Problem Statement: Develop a LAN-based gaming application that allows two players, acting as clients, to connect to a central server and compete against each other in a choice of three games: Connect 4, Tic Tac Toe, and Hangman. The project requires the implementation of the game logic, client-server communication, and user interface for an engaging and seamless multiplayer gaming experience.

Abstract: The "LAN Applications Game with Multiplayer Game Selection" project aims to create an interactive LAN-based gaming experience where two players can compete against each other in a selection of three classic games: Connect 4, Tic Tac Toe, and Hangman. This project showcases the implementation of a client-server architecture to facilitate real-time gameplay between players. Each player connects as a client, and a central server handles game coordination, communication, and synchronisation. Through this project, players will have the opportunity to enjoy multiplayer gaming while practicing their strategic thinking, decision-making, and problem-solving skills.

Outcome: The Project enables to create a LAN-based multiplayer gaming application that empowers users to enjoy classic games like Tic Tac Toe, Connect 4, and Hangman, fostering a deep comprehension of client-server LAN communication, while enhancing skills in game logic implementation, real-time networking, user interface design, meticulous testing, and detailed documentation.

References Of Base Papers: The concepts of client-server architecture, socket programming, and game theory are well-documented in computer science literature. Some foundational references include:

- JF Kurose, “Computer Networking A Top-DownApproach", Ross
- Richard Stevens, "UNIX Network Programming", Addison-Wesley
- John Nash, "Non-Cooperative Games", Annals of Mathematics

Details of Division of Proposed Work Among Team Members:

Anurag:

- Responsible for setting up the server and client initialization.
- Handle the connection and disconnection of clients.
- Handle the game and win conditions for Hangman.
- Implement the chat functionality

Moksha:

- Implement the Tic Tac Toe game logic.
- Handle the game state and conditions for Tic Tac Toe.
- Figured out connections of client and server.
- Test the entire system for bugs and glitches.

Adruti:

- Implement the Connect 4 game logic.
- Handle the game and win conditions for Connect 4.
- Handle user inputs and ensure the system is robust against invalid inputs.
- Document the code and write user instructions.

Design Outline: