# **PROPOSAL FOR PROJECT**

**MADE BY:**

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# **TITLE: QUERENCIA**

**PROBLEM-DESCRIPTION:**

The project aims at creating a 'multipurpose' software which has enjoyable and intellectual games while being offline and which enables one user to connect to a LAN based network and play a game with another user (who is online) as well as engage in real time interaction with the user. This is possible only if the host is online, otherwise the user can play any of the two games on the software with the machine.

We aim to give the software a very user friendly GUI and which gives the user two options on running the software:

1. Stay offline and play WORD-SEARCH or MANCALA with the machine.
2. Go online after logging-in with a username and password if the user is already registered in the host server, or register to the host servers.

**PART 1: ONLINE REAL TIME INTERACTION**

Any number of users can connect with the host and engage in chatting or playing a game called Mancala with the other user. We also maintain a chat-history of two particular users within the user machines and the host maintains a database which contains the registered users. There is also a part of our code which learns from the chatting-history and the dictionary of the user and gives possible completed words while the user is writing. We also aim to give the texting part a spellcheck and autocorrect option using data structures like bloom-filters and bit-vectors. So the machine learns as much as the user chats. We have also provided the feature of sharing images along with the messages. If possible we aim to enable the user to share data also. The host server is a separate identity from the user-world so the person who is hosting the server can also log in as a user. Any message the user sends is currently encrypted using a randomly generated permutation of the alphabet known only to the user and the 'partner'. We intend to use RSA or cryptographic hashing algorithms for password encryption.

**PART 2: WORD-SEARCH**

Word Search is a game that has a grid and various words hidden inside it. The main frame of the game displays a list of words, main-grid (playing-area) and a timer. The letters in the word appear in order somewhere in the grid, and can be placed horizontally, vertically or diagonally. The main point of the game is to find all the words hidden inside the grid in the limited period of time.

The game will be played Offline and it has two parts:

* Play the in-built levels
* Create your own levels

This game uses an algorithm to generate a random grid having random combinations of letters of words from a given word list. It also has a user-friendly interface. It even attempts to guess which way is the user trying to go by judging the mouse movements.

**PART 3: MANCALA**

Mancala is one of the oldest known games to still be widely played today. Mancala is a generic name for a family of two-player turn-based strategy board games played with small stones, beans, or seeds and rows of holes or pits in the earth, a board or other playing surface. The objective is usually to capture all or some set of the opponent's pieces.

The game has three modes:

* Offline with AI
* Offline 2-Player
* Online 2-Player

This game uses Minimax algorithm, alpha-beta pruning and hash-table. The game intends to have a user-friendly and customizable environment.

For further details, refer to this link:

<https://www.youtube.com/watch?v=-A-djjimCcM>