

System design document

Blension

Version : 1.0

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1.Introduction

1.1 Purpose

This document provides a comprehensive architectural overview of Blension, designed to facilitate random, anonymous text and video chats between users worldwide.

1.2 Scope

The system will connect users randomly one-on-one video chat session. User can text during video chat. User can leave chat session anytime they want and start new connection.

1.3 Definitions, Acronyms, and Abbreviations

Blension : Random private chat service

UI : user interface

1.4 Overview

The following section provides detail on the system architecture, data design, interface design and security consideration.

2. System overview

Blension is web-based platform that allows user to engage anonymously via text or video without need the need to register or log in

3. System Architecture

3.1 Architectural design

The system is based on client-server architecture where the server handle websocket users connection and pairing algorithm.

3.2 Decomposition Description

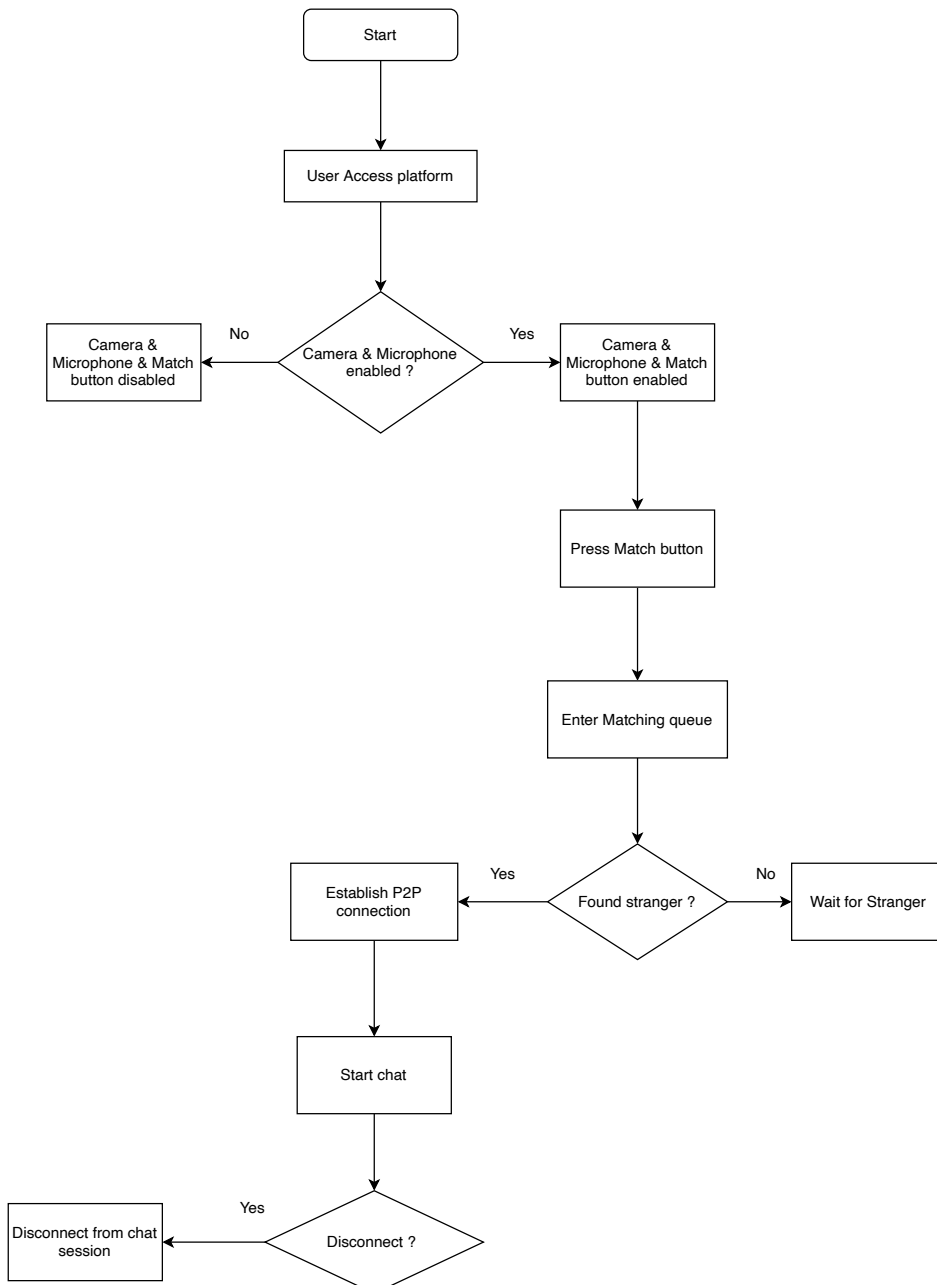
Client : Handle user interface and P2P connection

Server : Matching algorithm, handle websocket

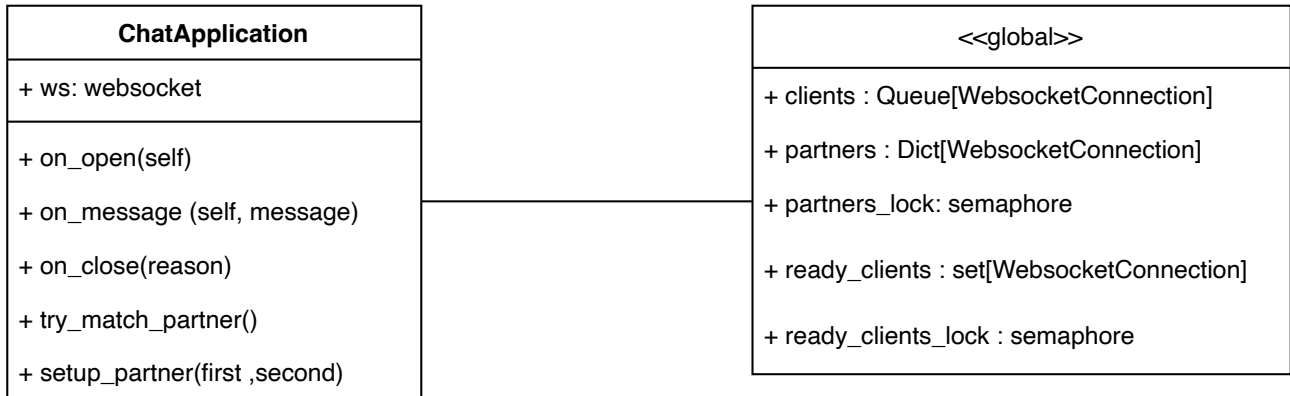
3.3 Hardware/Software Mapping

The client runs in a web browser; the server is hosted on cloud infrastructure capable of scaling to handle variable load.

3.4 Flowchart



3.5 UML diagram



4. Interface Design

4.1 User interface

UI features two video areas for video chat: one displays the user's video feed, and the other displays the opponent user's video feed. Below these video areas is a chat box for text messaging. Directly beneath the chat box are the message input area, a send button for dispatching messages, and a connect button to initiate connections with new users.

4.2 Software interface

WebRTC for video chat functionality

4.3 UI Mock



5. System Feature

5.1 Random Matching

User are match randomly, with no input into the selection of the chat partner.

5.2 Video and Text chat

User connect video chat in default. User can text chat anytime so u can choose video or text.

5.3 Component feature

Button

The 'Match' button becomes active only when the user enables their camera and microphone. Upon pressing the 'Match' button, it changes to a 'Cancel' button. If a connection is established, the button then changes to a 'Disconnect' button, allowing the user to end the session.

Message

Messages sent by the user are marked as 'You' and highlighted in red. Messages from the opponent are labeled 'Stranger' and appear in blue. System messages are displayed in grey