

Group Project

ALOHA

March 23, 2017

Abstract

Keywords:

1 Introduction

ALOHA is software, in which users sign up or get connect with their Facebook account and interact with their friends from iOS and web services. If user is signing in, then it asks him/her to enter email address and password. If user is signing up then it asks him/her to enter email address, password (create password and retype password) and mobile number (optional) respectively to register. If user chooses to get connected via Facebook then it takes him/her to Facebook login acceptance page. Once user is logged in, it takes him/her to Message Overview Screen, in which user can see his/her profile logo on the left right corner (MyProfile Screen) and right next to it, user can see a search box (Search). Moreover, below the search box, user can see his/her previous chat history. In MyProfile Screen, user is able to upload his/her profile picture, name, email, notifications option (either on to be notified instantly on his/her screen or off to avoid notifications) and sounds notification respectively. Once user is ready to start chat, either finding from search or from previous chat history, takes him/her to Message Details Screen, on which user can see the name of the person who is talking to, on the top and starts conversations. The left side of the screen shows the conversation of his/her and the right side of the screen is the conversation of the person, whom he/she is talking to and the bottom of the screen is the area in which user is typing the conversation.

1.1 The purpose of the project

The purpose of the project is to build a user-friendly distributed chat system, which allows two different clients (web and iOS) to communicate securely with one another in real time. It follows Client-Server Architecture based on socket programming, which provides fast, lag free applications capable of handling multiple requests at a time.

1.2 Background of the project:

Background of the project: Short Message Service (SMS) started in early 1990s. 3rd December 1992, the first SMS was sent over the Vodafone GSM network in the UK saying

Merry Christmas. However, it was and it is expensive service to send messages, but time and technology is playing crucial role to give more facilities. Nearly in two decades from first SMS, instant messages applications such as WhatsApp and Kik arrived and by January 2015, WhatsApp hosted 30 billion messages per day [1]. Which clearly has been observed and shows that instant messages are in higher demand compare to SMS. Instant messages apps allow users to send each other text messages with Internet connections, whereas SMS enables similar functionality without Internet.

1.3 Problem definition:

- Opening secure connection between two clients that bypasses the server
- Connecting two different clients i.e. iOS and web client
- Connecting to server (ALEX: please add one sentence that you are facing the problem right now from last 8weeks)

1.4 Project objective:

- Platform: ALOHA operates on iOS and web browser
- GUI: The Graphical User Interface (GUI) will be created for user friendliness
- Notifications: iOS client get instant notification on screen? (do they get?)

1.5 Gantt Chart:

Have to attach the chart here.

1.6 The Scope of the Work

NO Scope yet

Amazon Web Services provide to new users virtual private server one year for FREE. It provides a VPS micro-instance at no cost for one year. AWS gives fairly flexible, providing 24 hours a day for year to run the micro-instances.

After creating account and micro-instance on AWS, used the Elastic Compute (EC2) service. To access the Elastic Compute service, can be clicked on EC2 in the upper-left corner of the AWS portal page

2 Review

3 Requirement and design

4 Implementation

4.1 Software architecture

WebSocket: The WebSocket is a feature of HTML5 for establishing a socket connections between a web browser and a server, once the connection has been established with the server all WebSocket data are sent directly over a socket rather than usual HTTP response and requests, giving it much faster and persistent communication between a web browser and a server. The limitation of using WebSocket is that it supports HTML5, therefore, older version of browsers does not work.

Once the connection is open, an event handler can be attached to give status of connectivity, incoming messages and errors to keep a record. Data are sent in packets and all packets traveling via Internet, must use the Internet protocol. Ultimately, source IP address and destination address must be included in the packet. Another an important thing to consider in packets are Port number, which plays crucial part in ALOHAs network application.

WebSockets use different protocol for connections therefore, using ws:// instaed of http:// and by calling WebScket (ws://ec2-52-40-170-181.us-west-2.compute.amazonaws.com) opens the socket connection.

(Screenshots of open and closed WebSocket connections)

The two important points that has to be discussed in this project are Clients (Web client and iOS) and Server.

- Clients

Web client In Oreilly website, Web client has been defined precisely: A web client is an application that communicates with a web server using Hypertext Transfer Protocol (HTTP). HTTP is the protocol behind the World Wide Web (www). With every web transition, HTTP is invoked. HTTP is behind every request for a web document or graphic, every click of a hypertext link, and every submission of a form. The Web is about distributing information over the Internet, and HTTP is the protocol used to do so [2]. So from this definition, can be understand that web browser is an example of a web client. **iOS**

- Server As mentioned above, clients are web browser and iOS. The remote machine containing the document that has been request is called web server. The server and clients communicate using HTTP (protocol) language. The figure 2 below has been taken from [2] and shows the relationship between server and client.
add picture here

5 Test Plans

Software testing is really important during software development because it verifies and validates. In other words software testing is an integral part of software development. The purpose of testing various tests (table ref) show that what members have intentions to create it, are supposed to be there. However, focused mainly on the following two objectives;

6 Team work

7 Evaluation

8 Peer assessment

9 References

References