Bilkent University
Department of Computer Engineering

CS 491
Senior Design Project

Project Specification Report

Project Name:

GrouPub

- A Location-based Chat Engine-

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Project Website: http://groupub.github.io/

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ABSTRACT

"GrouPub" is a location based quiz engine for users who want to play a quiz game and socialize. It is a mobile application especially for teenagers that want to compete and socialize. GrouPub provides a large variety of people to talk with, but in a game form. Details about the GrouPub application will be given in the following parts of the report starting with an introduction, constraints and requirements that documents what GrouPub will need to be functional and achieve its goal.

****Keywords: Word blocker, Heat level, Rating, Event, Host, Group (See in Appendix A).

1. INTRODUCTION

People spend the majority of their time in school or in workplace. Since this is the case there is a little time left to socialize with others, finding new people to chat or spending some quality time with the friends or colleagues. Our application, GrouPub, will help people in these manners. GrouPub enables its user to find new friends, spend a good time with friends in various places and makes people more social through organizing various quiz nights with diverging quiz themes in different places such as cafes and bars.

GrouPub is a unique application since there is no application that covers the concept of chatting with others in a specified area and creating fun quiz environments in different locations with multiple users to compete with. The user sees the events, quiz nights, in his/her smartphone and can join to those events with a single button click. The user also can create groups or can join existing groups and can meet with different people easily. Since the quiz nights held in different places, the user also able to discover new places.

The user can communicate with any people that enable group discussion for individuals in a common location. Mobile user can turn-on and run the client application, basically. The client application gets the physical location by QR code provided by place such as pubs, restaurants etc. When the mobile user wants to communicate with other users, client application gets the location information and relevant parameters from mobile device to server to register the communication that is within a valid common area. After the communication is successfully registered, a confirmation request is sent from server back to the mobile device [1].

It is easy to apply this application to any cafes or bars since it only requires the owner to prepare the QR codes needed to verify the people who participates in the quiz night in that café or bar. There is a chance to involve commerce in GrouPub since with this application the café and bars get more customers in the quiz nights which means there can be an agreement with these places and can schedule quiz nights in these places accordingly.

GrouPub is a social application provides user private or group conversation within a valid common area by mobile phone users in a virtual chat room and quiz game interface. The rest of the report is organized as follows: Section 1 clarifies the application with its constraints and professional and ethical issues within an application. Section 2 describes the functional and non-functional requirements in software development and finally Section 3 concludes the specifications of application.

1.2. DESCRIPTION

This part has been designed for clarifications of the project. The project's name is GrouPub and it aims to bring a fresh perspective to social media. The target users of GrouPub are teenagers and adults. When users open the application and login, the application lists the available events. Users can select an event and sign up for that event by creating a group or joining a group that is already formed by another user.

Features:

- QR Code + GPS confirmation to make sure users that signed up for an event are at the specified location before the event starts.
- Users can chat privately with other users once both sides accept each other's friend request.
- Users can chat publicly once they are at a specific quiz event.

An intuitive sketch of GrouPub can be found below:

Figure 1: GrouPub Group Formation Page

1.3. CONSTRAINTS

1.3.1. Implementation Constraints

- The implementation language will be HTML in client side and Java in server side.
- The system will use Toad Oracle DB for data storage.
- The application will be cross platform.
- Unity will be used to made 3D graphics needed in the system.
- GitHub will be used as the subversion control system during the development of GrouPub.

1.3.2. Economic Constraints

We will have a website for GrouPub, therefore, we need to pay for its domain name. Another expense is going to be for the private repository from GitHub for subversion control and report sharing. Most probably the last version of GrouPub will be available on market via Google Play, so we have to pay for its account.

At the beginning GrouPub will be totally free to use. There will be neither in-app purchases nor advertisements. It is also free to download. However, we can consider to add annual membership fee like 1 TL after two years of free usage, in order to maintain the application.

1.3.3. Ethical Constraints

While in a quiz event, users have the ability to chat with other users that are at the same quiz event, which means communicating with strangers sometimes. To avoid unpleasant conversations, words or sometimes harassments; a word blocker will censor every word that is considered insulting or inappropriate. The word blocker will also block abbreviations of insulting words. The database of the word blocker will be kept by us and it will be updated regularly.

1.3.4. Sustainability Constraints

In order for GrouPub to be efficient and useful we will need enough amount of users as the first step. Thus, we will advertise GrouPub in clubs, bars, and pubs using flyers or posters, since, those are the most suitable places where people can use GrouPub.

As a second step we will gather feedbacks from Google Play and AppStore in order to release updates accordingly.

1.3.5. Social Constraints

The main purpose of GrouPub is to encourage people who do not have the courage to meet new people or go out and socialize by creating an environment where even strangers can form groups, share a few drinks and socialize while trying to win a quiz event.

1.3.6. Technical Constraints

GrouPub will be available only for Android devices whose version is higher than 2.3.3. After the Beta version is released İOS compatibility of GrouPub will be handled.

1.3.7. Language Constraints

As a beginning, we want to create an application in locations that we can observe the proliferation. Therefore, we will implement the interface of the application in Turkish.

1.3.8. Legal Constraints

We will take all precautions regarding to professional and ethical issues as discussed in the next section. Therefore, we are not responsible for any action caused by the users of GrouPub.

1.4. PROFESSIONAL AND ETHICAL ISSUES

While using GrouPub, you have the opportunity of speaking to anyone that is participating in the same quiz event as you, which means starting a conversation with a complete stranger most of the time. To avoid unpleasant conversations, words or sometimes harassments; a word blocker will censor every word that is considered insulting or inappropriate. The word blocker will also block abbreviations of insulting words. The database of the word blocker will be kept by us and it will be updated regularly.

Another ethical issue of GrouPub is the heat level of a user. The heat level of a user shows how often he/she uses words that are censored by the word blocker. Each use of a word that is censored by the word blocker will increase the heat level of that user. When the heat level reaches a certain threshold, all conversations of that user will be dropped and that user will not able to communicate with anyone for a certain amount of time. This is done to avoid violence and keep the environment of GrouPub pleasant.

When you are having a conversation with someone else, during or after the conversation you can rate the person that you are having a conversation with. Staring people indicates their success and also the person you are having a conversation with is polite and friendly. A single star on the other hand will indicate that the person you are talking to is rude and he/she is making you feel uncomfortable. The rating of each user will be public, therefore you have the opportunity to select a user to start a conversation according to his/her rating. This is done to provide a somewhat safer and trustworthy environment.

2. REQUIREMENTS

2.1. Functional Requirements

- Users will be rated by other users based on their politeness and friendliness.
- A user can ignore another user to block all messages sent by that user.
- There will be a single type of user, which is the regular user.
- The system will detect and censor abusive, insulting and inappropriate words using the word blocker. The database of the word blocker will be updated regularly.
- Ratings of user will be publicly displayed.
- Users will need to fill a date of birth confirmation form before starting to use GrouPub.

2.2. Non-Functional Requirements

- GrouPub is a cross platform mobile application.
- The application needs Internet connection to work.
- Location control will be done by QR code and GPS.
- A smooth, simple and fast user interface will be designed.

3. CONCLUSION

This Project Specification Report is written in order to give brief information about location based quiz program called GrouPub. Our report consists of two main parts; constraints and requirements. For requirement specification and constraint parts, we examined the possible problems and requirements for our application. In our project design, we will care to include all functional and nonfunctional requirements. Requirement specification will help us to move on to system model part. After deciding the requirements, we will move on to the next stage which is designing it properly. Briefly, we tried to create a comprehensive specification report, which will guide us in our design and implementation process. In order to avoid problems in the future, we need to design our system carefully.

REFERENCES

[1] Huang, Sheng Chao. Li, Ho Yin. "*Location-Based Networking*". May 23, 2011.

APPENDIX A

Word Blocker: A class (will be written by us) that scans a conversation and censors each word that is registered in its database. The database of the word blocker will be created and maintained by us. The purpose of this class is to censor out insulting and inappropriate words and to help calculate the heat level of a user.

Heat Level: Heat level of a user indicates how often that user uses words that are registered in the word blocker's database. Every time a restricted word is used, the heat level will increase by some amount. After reaching a certain threshold, that user will not be able to chat with anyone for a limited amount of time. Note that the heat level of a user will start to cool down if that user does not use a restricted word.

Rating: User A can rate user B based on how polite user B was to user A. The average rating of each user will be publicly displayed, giving a rough description of how polite each user is.

Event: An event represents a quiz event that is taking place in a specific location (pub, café etc.). It includes information about the quiz event including the start time and the location.

Group: A group (that is formed by a user) represents a group of maximum five users that belongs to a specific event.

Host: Host is the location where an event will take place. A host can be a pub, a café or anywhere public with tables and chairs where people can sit together and solve quiz questions.

APPENDIX B

Important Deadlines:

- Project Specifications

Monday, Oct. 5, 2015

- Analysis Report

Monday, Nov. 2, 2015

- High-Level Design Report

Thursday, Dec. 24, 2015

- Low-Level Design Report

Monday, Feb. 15, 2016

- Final Report

Thursday, Apr. 21, 2016

- Presentations & Demonstrations:

Apr. 25 - 29, 2016 *To be announced*