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Hooli Chat Messenger

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Abstract: With the development of digital technologies in recent decades, there has been drastic change in the mode of communication and usages of digital accessories in our today lives. It is sure that invention of mobile phone/smart phone has enhanced our life standard and made life easier. The main aim of this research paper is to analyze, design, build and test Bluetooth chat software. The software has been developed as an Interactive and collaborative learning aid. That tool could benefit students in general specially students with disability. Using the developed system, disable students can connect with their peer students, who are within Bluetooth range, without having access to Wi-Fi or Internet. Moreover, the application is very easy to use. Bluetooth messaging is also great for making new friends in a library or chatting up someone in crowded places, because one can hook up with anyone who has a Bluetooth-enabled phone. There were previous attempts to create a similar product with little success. Short Messaging Service (SMS) offers the same services as Bluetooth Chat for a fee; but the developed Bluetooth Chat Messenger is free.

I. Introduction

Today's cell phones are more than just phones, they are high-tech gadgets that also serve as a mini-computers. On the same side, they act as good medium for communication. If user wants to chat with their friends without any internet connection, then Hooli Chat serves for the purpose. Over the past few years we have been using data cable and Bluetooth to share our content to and fro from other devices but now we'll use it to communicate with each other. Hooli Chat helps users to connect to other students or their friends who are within their Bluetooth range. The application does not require any Internet connection, the application works just with Bluetooth connectivity, users can send free message to their friends sitting over classroom, school playgrounds and festivals, when nearby, without a cellular connection or Wi-Fi.

II. Background

A mobile app is a software application developed specifically for use on small, wireless computing devices, such as smartphones and tablets, rather than desktop or laptop computers. Mobile applications are available at different application stores over the internet which are specific platform based. Some of the popular application stores are Google Play Store, Apple App Store, Windows Store and Blackberry App World. Mobile apps are designed with consideration for the demands and constraints of the devices and also to take advantage of any specialized capabilities they have. Mobile applications make use of phone's hardware and perform specific tasks.

III. Implementation

Hooli Chat is implemented in four modules named as Login, ChatFns, Client, and Host. User's details are stored in an online database. As user installs this on his smartphone then he has to first register on the application. On the homepage of the user, Hooli Chat will ask for the permission from the android operating system. After that a background Service is called which returns the list of objects. Objects are then parsed to get the applications that run in Foreground. After the application is started, the user interprets a page asking for him to be a Client or Host. Clients can connect to Hosts. When a user selects that he want to be a Host, the Host module is loaded and implemented. Same goes with Client.

IV. Tools, services and methods

This section explains the hardware and software requirements for developing the Hooli Chat application and its interface, tested features of the app, what the app will do, the constraints under which it must operate and how the app react to external input.

A. Hardware Platform

This app has been developed using 4 GB of RAM, i3 2.4 GHz 500 GB Hard disk space but the Minimum requirement of such kind of application development for a machine is: (i) 1.8 GHz or faster processor, (ii) 2 GB of RAM (2.5 GB if running on a virtual machine), and (iii) 10 GB (NTFS) of available hard disk space 5400 RPM hard drive

B. Software Platform

This app is developed on a platform of Microsoft windows 10 Operating System. Microsoft Windows is a series of graphical interface operating systems designed, developed, marketed, and sold by Microsoft onwards from

November 20, 1985. The most recent versions of Windows are windows 8.1 and 10. The Other Supported Operating systems are: (i) Windows 7 SP1 (x86 and x64) and (ii) Windows 8 (x86 and x64).

C. Development tools and Storage

Python 2.7, Visual Python, Anaconda have been used to develop this On The Go app for designing and developing this app. Python is a widely used high-level programming language for general-purpose programming, created by Guido van Rossum and first released in 1991. An interpreted language, Python has a design philosophy that emphasizes code readability (notably using whitespace indentation to delimit code blocks rather than curly brackets or keywords), and a syntax that allows programmers to express concepts in fewer lines of code than might be used in languages such as C++ or Java. The language provides constructs intended to enable writing clear programs on both a small and large scale. VPython is the Python programming language plus a 3D graphics module called Visual. VPython allows users to create objects such as spheres and cones in 3D space and displays these objects in a window. This makes it easy to create simple visualizations, allowing programmers to focus more on the computational aspect of their programs. The simplicity of VPython has made it a tool for the illustration of simple physics, especially in the educational environment.

D. Functionalities (Use Case Diagram)

Users of the app can sign up and login to access the details. Once logged in user can become a Host or a Client in order to chat with people.

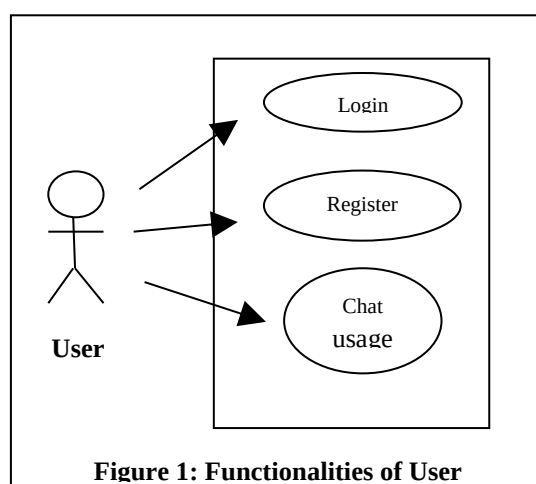
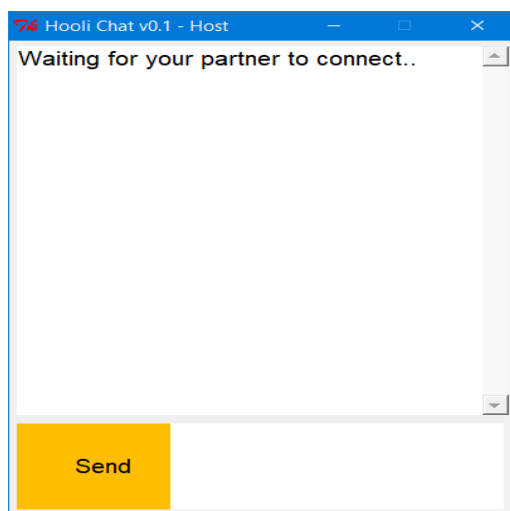


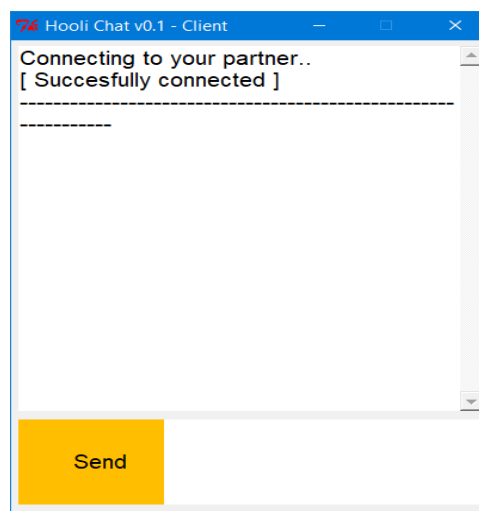
Figure 1: Functionalities of User

V. Result Analysis

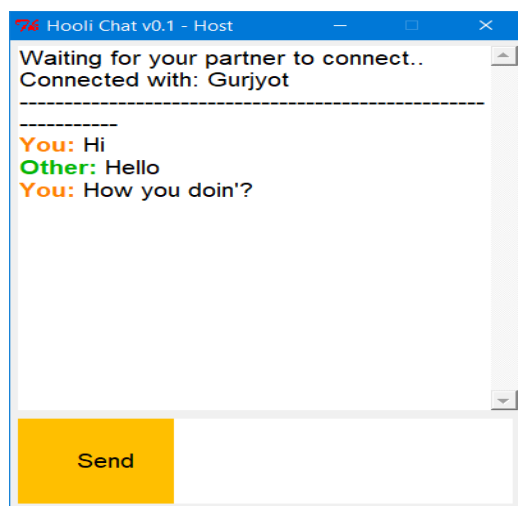
Hooli Chat users are now able to chat with other Hooli Chat users via Bluetooth connectivity. They can chat endlessly without having an internet connection for free. Hooli Chat has been developed as an Interactive and collaborative learning aid. This has made communication with each other more easy and has benefited students in general specially students with disability. Using this disable students can connect with their peer students, who are within Bluetooth range.



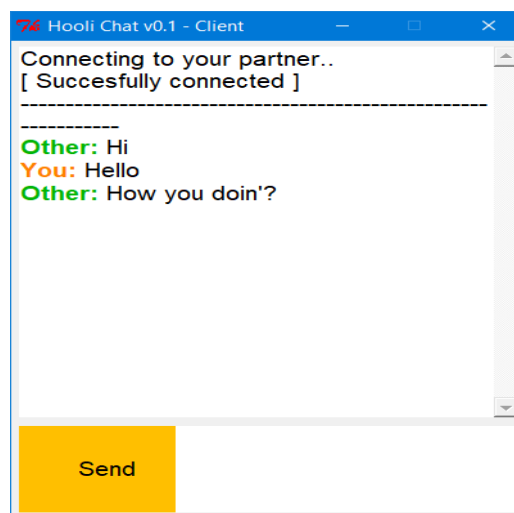
Host Screen



Client Screen



Chat Screen (Host)



Chat Screen (Client)

VI. Security and Issues

The securities issues related to this app are that when the host is running undesired or anonymous users can also join the chat and send unwanted messages. The general issues related to Hooli Chat app are that, the host should start it's program first and then client would able to connect to it and not vice versa. The other issue is that only one client is able to connect to a host.

VII. Conclusions and future scope

Hooli Chat is useful for those who want to communicate with their friends and relatives who are in their bluetooth device range. Hooli Chat serves the all purposes as described above. This application is extendable from the future' perspective by adding the following features:

- P2P encryption will be done to ensure the users privacy.
- Introducing emojis in the chat so that users can enjoy emotions in the chat screen.
- In case of emergency user can send a distress signal to all the bluetooth devices in his/her range.

VIII. Acknowledgement

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