Bluetooth Timer Messenger

NSU EXCELR8

Group Members:

Touhid Rahman [ID: 1311058642] **Contact details:** touhid360@gmail.com **Contributions:** Worked on Timer, Wi-Fi, Bluetooth, UI	**Nazmul Kaonine** [ID: 1230855642] **Contact details:** muhit.k@gmail.com **Contributions**: Worked on UI
Shafee Chowdhury [ID: 1321365642] **Contact details:** shafee.chowdhury@northsouth.edu **Contributions:** Worked on Bluetooth and Wi-Fi	**Anika Khanam** [ID: 1230388042] **Contact details:** anika.khanam@northsouth.edu **Contributions:** Worked on UI, Wi-Fi
Farhan Mohd. Fokrul Alam [ID: 1320055642] **Contact details:** farhan.alam@northsouth.edu **Contributions:** Worked on Bluetooth, User Interface and Flow of the project	**Nabilah Hossain** [ID: 1230550042] **Contact details:** hossainnabilah123@gmail.com **Contributions:** Worked on UI

Supervised by,

DR. NOVA AHMED
Associate Professor
North South University

1. Project Overview

Our project is an application that can communicate with other devices by sending messages via Bluetooth. The application can also activate Wi-Fi.

The main task of the application is to send and receive messages between two devices and that too with a built in timer in it. Using the timer, a user can set the desired time in the application and when the time is reached, the message sending function is triggered and the message is sent.

2. Use Case

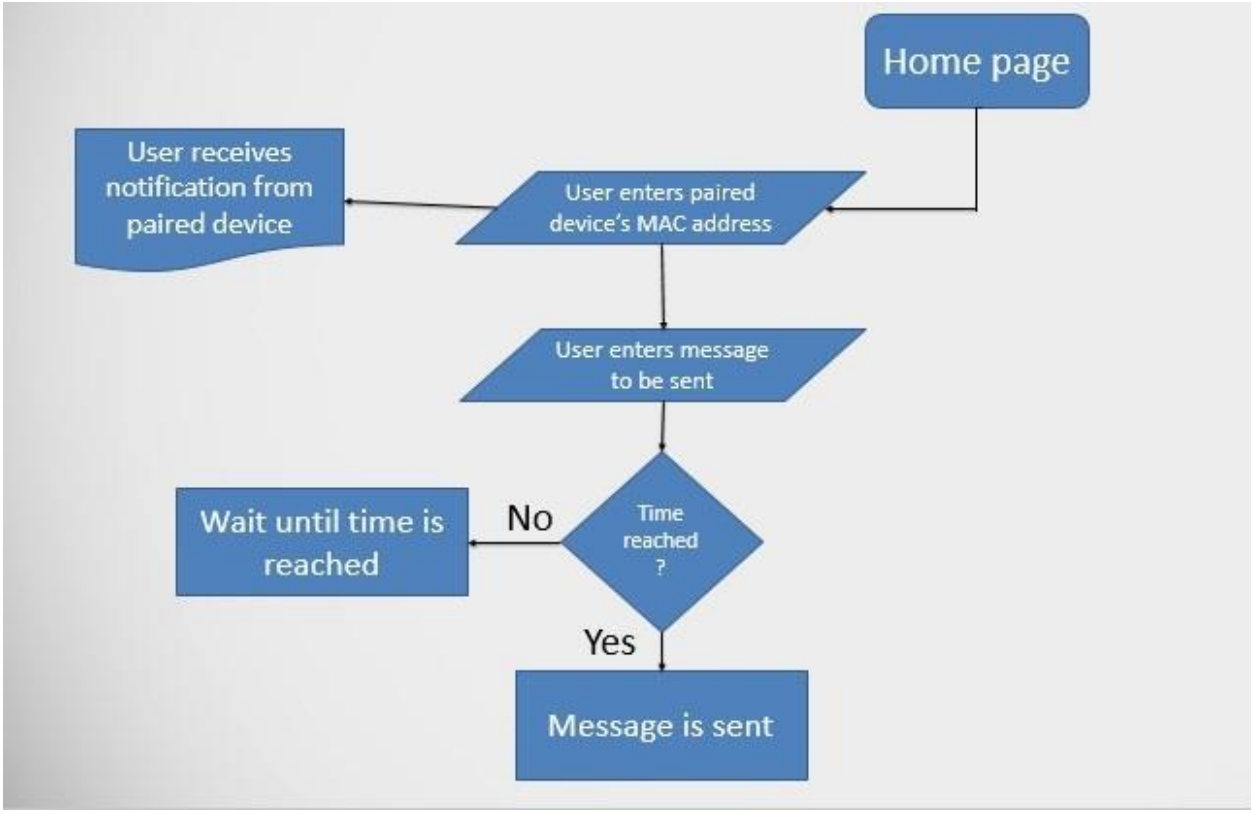
The feature that allows messages to be sent over Bluetooth does not require any SIM card or Internet connection. It can work within the standard Bluetooth range. This can help if a person need to communicate with another person and there is no availability of Wi-Fi or cellular connection. The timer can also be very useful if a person wants to send a message to another person at a specific time, given it be a remainder or due to some other reason. This can be helpful when setting up schedules for a particular work.

After opening the application press the Change Visibility button to access the Bluetooth activation menu. There the user can manually turn the Bluetooth on and connect the devices together. After connection is established, press the Get the MAC address of paired device button to obtain the MAC address of the paired device. Once obtained, there is a field to put the desired message that the user wants to send. Below that is the field where the user inputs the desired time to send the message. Underneath is the field where the time is displayed for the aid if the user.

Once the time is reached, on the receiver phone, it will prompt to accept from the paired device. Once accepted, the message will be displayed underneath the time field.

3. Summary of Design

Below is a flowchart that shows how our app works



4. API used

For our project, we have used primarily Wi-Fi, Bluetooth and Timer APIs. We have used callback functions to implement the features provided by the Wi-Fi and Bluetooth APIs.

For the UI we have used basic buttons, text fields to enter text and basic box to receive and display messages.

From Wi-Fi, we have used the Wi-Fi initialization and de-initialization functions because these are the only two functions we used in the app.

From Bluetooth, we have taken a number of functions. Firstly, accessing the setting menu for the visibility and connection of Bluetooth. Then we used the function for the bonded devices and obtain the MAC address of that device. Functions for one device acting as a client and another device acting as a server is also used. After that the file transfer API is used along with the receiving of the file information.

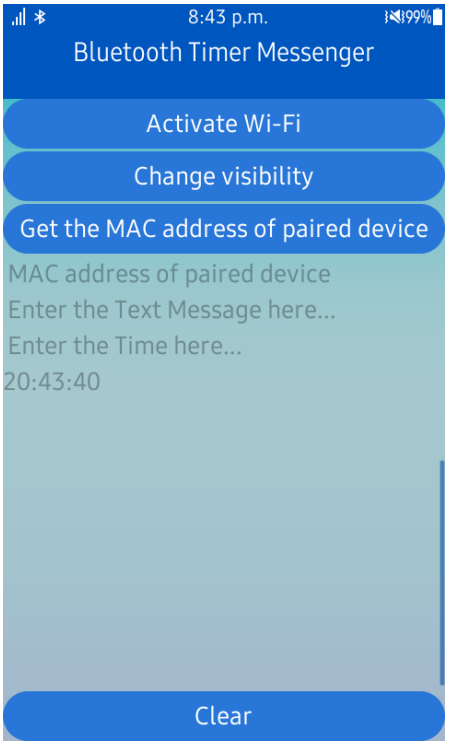
For the timer, the encore timer function is used to connect to the other APIs and fire then at a specific time. A time box is also used where the current time is displayed and third field is refreshed every 1 second to display the time.

Bluetooth reference link: https://developer.tizen.org/dev-guide/2.4.0/org.tizen.native.mobile.apireference/group__CAPI_NETWORK_BLUETOOTH_MODULE.html

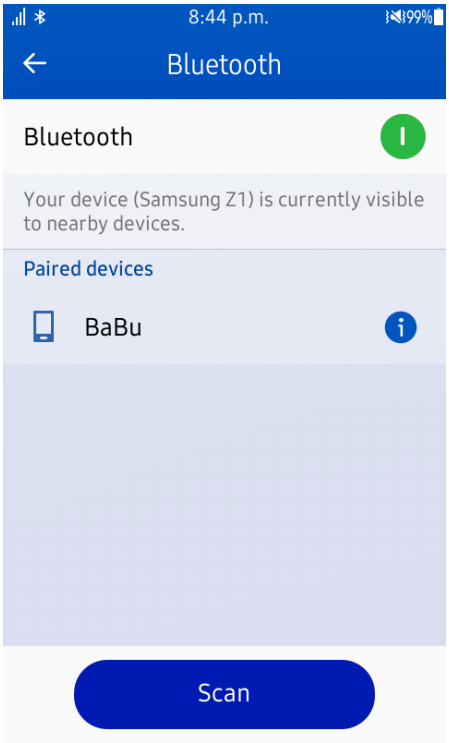
Wi-Fi reference link: https://developer.tizen.org/dev-guide/2.4.0/org.tizen.native.mobile.apireference/group__CAPI_NETWORK_WIFI_MANAGER_MODULE.html

Timer reference link: https://developer.tizen.org/dev-guide/2.4/org.tizen.native.mobile.apireference/group__Ecore_Timer_Group.html

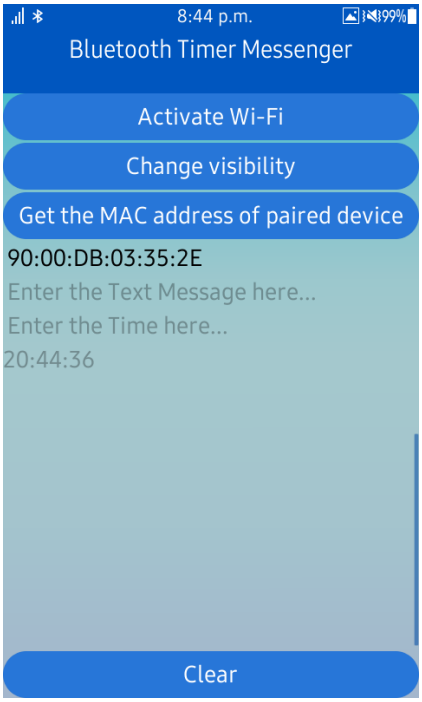
5. Screenshots of interface



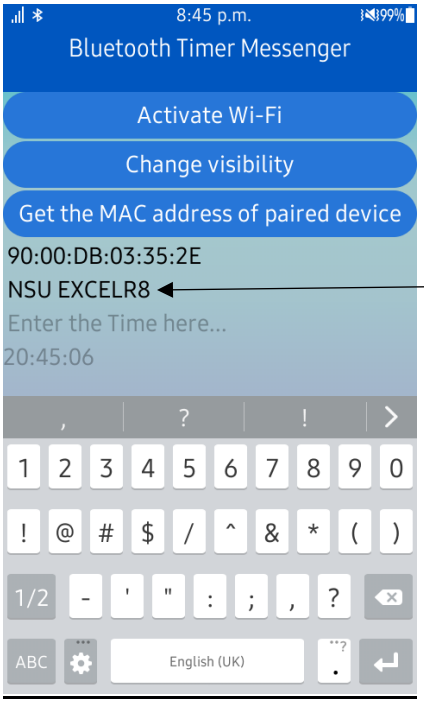
1. Press Change visibility to access the Bluetooth menu.



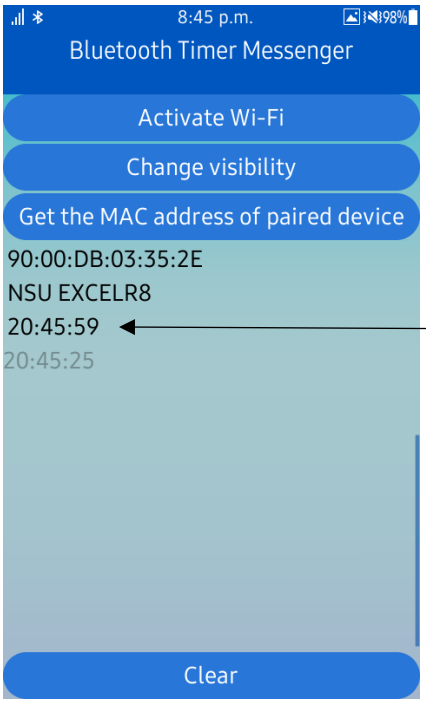
2. Here, pair with the other device running the same application



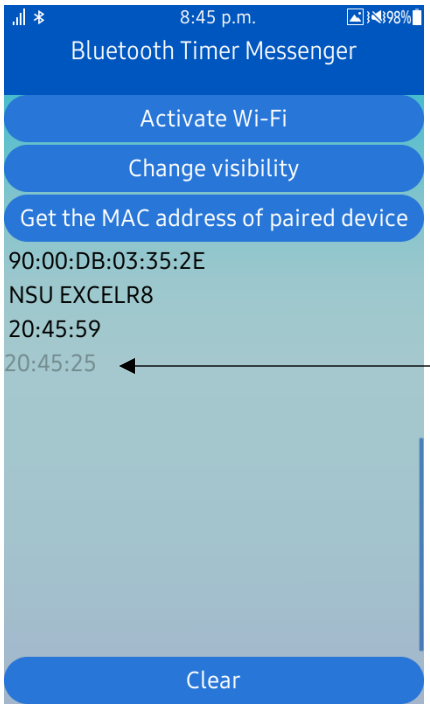
3. Press Get the MAC address of paired device to receive the MAC address of the paired device



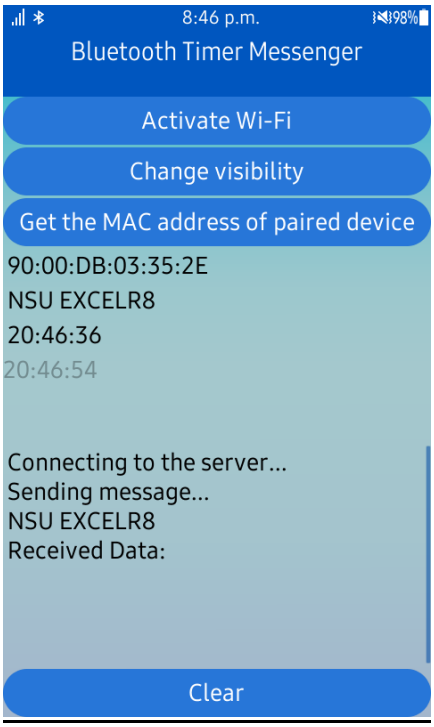
4. Type the desired message to be sent.



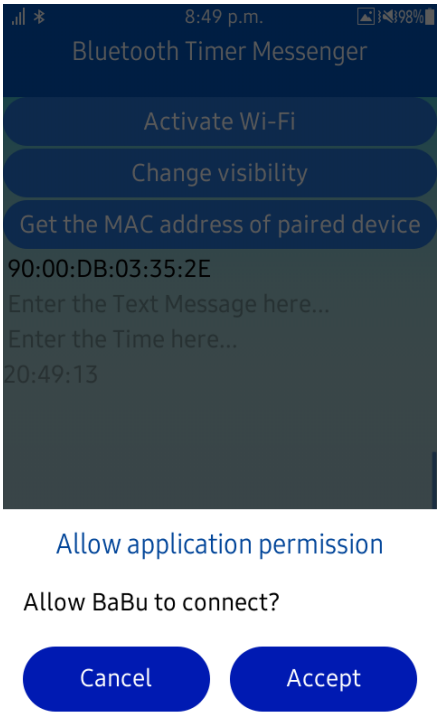
5. Give the desired time to transmit the message with respect to the current time.

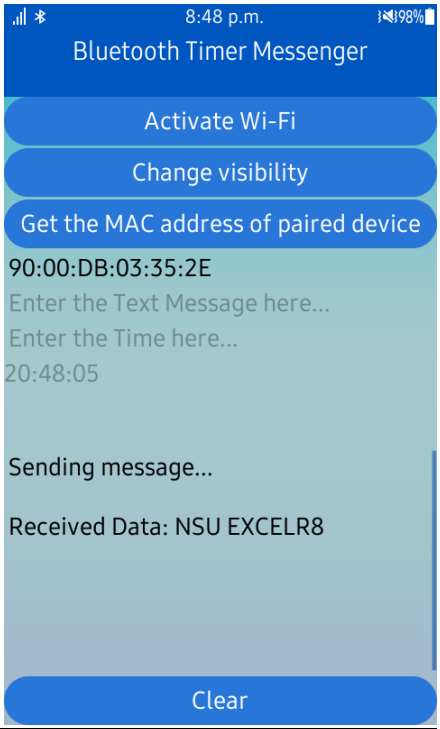


6. This field displays the current time.



7. In the receiver phone, the message will be displayed in the box.





6. Source code link

Link to GitHub: https://github.com/touhid360/Bluetooth-Timer-Messenger