Chapter 1: Introduction.
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Quantitative social data is hard to get because the lack of social sensor. More over, the values are extremely varied under slight differences in circumstances. Currently, there are three common ways to get those quantitative data, which are polls, questionnaires, and interviews.

As far as the time goes, the term "social" can go beyond real life interaction. The term "social" has no necessity to interact with someone else in person anymore. Contrary to the amount of tools those are available to use to get social data from Internet activities (e.g. Facebook's like button, Reddit's down vote and up vote buttons, ...), there are only few technologies that could be use to facilitate real-life social data mining. Sociometric Badge in the other hand, is a tool that was made specifically to measure and take quantitative data from real-life social activities. Sociometric Badge, offers a platform to track social activities within a pre-determined space (e.g. conference, office building, ...). At its basic, Sociometric Badge takes the energy and pitch of its wearer's voice when social interaction happens and together infrared face-to-face detection it can determine whether a proper social interaction happen. All in all, Sociometric Badge is just like a Fitbit but for social achievement.

The first iteration of Sociometric Badge has abilities to measuring simple body gesture, extracting speech features (energy and pitch), radio transceiver to send and receive data over other Sociometric Badges, local positioning system from a relative base station, it knows when face-to-face interaction is happening, and Bluetooth for proximity and connection to mobile phone application. Although the Sociometric Badge can work with just face-to-face detection and speech features extraction, the focus of real-life social interaction as it is in social networking cannot be achieved without an ability to interact to other Sociometric Badge. Hence, it has build-in Bluetooth to display data to a mobile phone application and to upload data manually to a server. The current Sociometric Badge is now handled by a company named Humanyze which is from the same people who brought this badge in the first place. Compared to the first iteration, the recent Sociometric Badge has a dedicated server application and the badge is now able to stream data in real-time to the server. On that account, its wearer can receive feedback immediately. In essence, every new iterations of Sociometric Badge would emphasize on processing and taking data in real time.

The main problem of real-life social sensor is that there is no alternative thing to buy aside from the Sociometric Badge. Since Sociometric Badge went inside a commercial company there is little to no update on what are the current state of the arts. Furthermore, it is not as commercially available to buy, seeing there is no obvious way to buy Sociometric Badge aside from sending an email to the company. In the need of an alternative, there is recently a similar project from the same group that made

Sociometric Badge. It is open source and it is called "Rhythm Open Badge". The project of Rhythm Open Badge let people to create their own sociometric badge using their instructions. However, this raised another concern that the people that needs to get quantitative measurement usually are not adept in electronics nor programming. That, and with the fact that Rhythm Open Badge is made with tools those are not well known and the lack of documentations, are what motivate this project to create an alternative of Sociometric Badge for people who has no background in electronics and programming.

This project will focus on the project's progress and what went wrong and its solutions. Next chapter will discuss on things those motivate this project. Then moves into hardware and software development, testing, problems and solutions, and finally the conclusion of this project and recommendations.