**Requirement Gathering 1st Prototype**

**Group:** Proyecto de Programacia

* **Data Collection**

*(1) As a [User/Administrator], I want to collect [Basic Baby Information] so that [these could be used as valuable research resources in the future.]*

*(2) As a [User/Administrator], I want to collect [Glucose Concentration Data with Timestamp] so that [it could be used for real-time monitoring of baby’s health status.]*

*(3) As a [User/Administrator], I want to collect [Skin Glucose Concentration Data with Timestamp] so that [it could also be used for real-time monitoring as well as a reference of the concentration.]*

*(4) As a [User/Administrator], I want to collect [Calibration Factor Information] so that [the calibration curve could be adjusted and predict a more accurate result.]*

*(5) As a [User/Administrator], I want to collect [Lag Time] so that [plots could be correctly plotted and presented accurately.]*

Note:

(1) Basic Baby Information: Name, Age, Gender (…)

(2) Glucose Concentration Data: continuous signal value, requires calibration later

(3) Skin Glucose Concentration Data: discrete signal value, requires calibration later

(4) Timestamp: date, hour, minute, second

(5) Event: Free text comment which illustrate the action performed at certain time point

(6) Calibration Factor Information: factors that could affect the calibration curve, for example temperature...

(7) Lag Time: the time between the measurement done and the value received by the App

* **Data Processing**

*(1) As a [User/Administrator], I want to [calibrate the signal data] so that [signals in the current/voltage form could be transformed into concentration, which makes it easily to be understood and could be used for clinical analysis directly.]*

*(2) As a [User/Administrator], I want to [match the timestamp and the concentration/event] so that [correct monitoring result could lead to the accurate clinical solution.]*

*(3) As a [User/Administrator], I want to [smooth the concentration data] so that [the graph could be plotted more clearly and the hidden trend within the time series could be found more easily.]*

*(4) As a [User/Administrator], I want to [perform post processing] so that […]*

Note:

(1) post-signal processing: whether we need this, or it has been done before the data transmission

* **Data Plotting**

*(1) As a [User/Administrator], I want to plot [Glucose Concentration with respect to Time] so that [the long-term trend of the glucose concentration could be presented, and any unusual variation could be detected with the matching time information.]*

*(2) As a [User/Administrator], I want to plot [Skin Glucose Concentration with respect to Time] so that [the long-term trend of the skin glucose concentration could be presented, and any unusual variation could be detected with the matching time information.]*

*(3) As a [User/Administrator], I want to plot [Event with respect to Time] so that [it shares the same time axis with the concentration plots and all of them could be used together and the trend in the plot might be explained more reasonably.]*

*(4) As a [User/Administrator], I want to plot [Glucose Concentration with respect to Skin Glucose Concentration] so that [the correlation between these 2 concentrations could be evaluated for more accurate clinical diagnosis.]*

*(5) As a [User/Administrator], I want to plot [Bland-Altman Plot for Glucose Concentration and Skin Glucose Concentration] so that [the agreement between these paired measurements could be determined and used in clinical diagnosis.]*

* **Permission Control**

*(1) As a [User/Administrator], I could [log in using a unique ID and a matched password] so that [only users given permission could use this app.]*

*(2) As a [User/Administrator], I could [change my password] so that [I could have more safety protection for my account.]*

*(3) As a [Administrator], I could [change other User’s password (User only)] so that [I could manage the organization and help User in case they forget the password.]*

*(4) As a [User/Administrator], I could [add Event Information with Timestamp and User ID] so that [it could be analyzed with concentration data and might be able to explain some unusual trends in the plot.]*

*(5) As a [User/Administrator], I could [correct the input data made by my ID within a certain time interval(5min) ] so that [any errors could be corrected while the database is under protected.]*

*(6) As a [User/Administrator], I could [check the detailed description of event or concentration at certain time point] by [typing in a specific time or clicking on the time graph] so that [I could understand more details with higher accuracy.]*

*(7) As a [Administrator], I could [correct any input data made by any User ID with no time limit] so that [the data stored in the database is well organized and remains accurate.]*

*(8) As a [Administrator], I could [change the Calibration Setting] so that [a more accurate prediction could be get from the modified calibration curve.]*

*(9) As a [Administrator], I could [add/delete other User’s account] so that [I could manage the organization.]*