

QB : The Quarantine Buddy

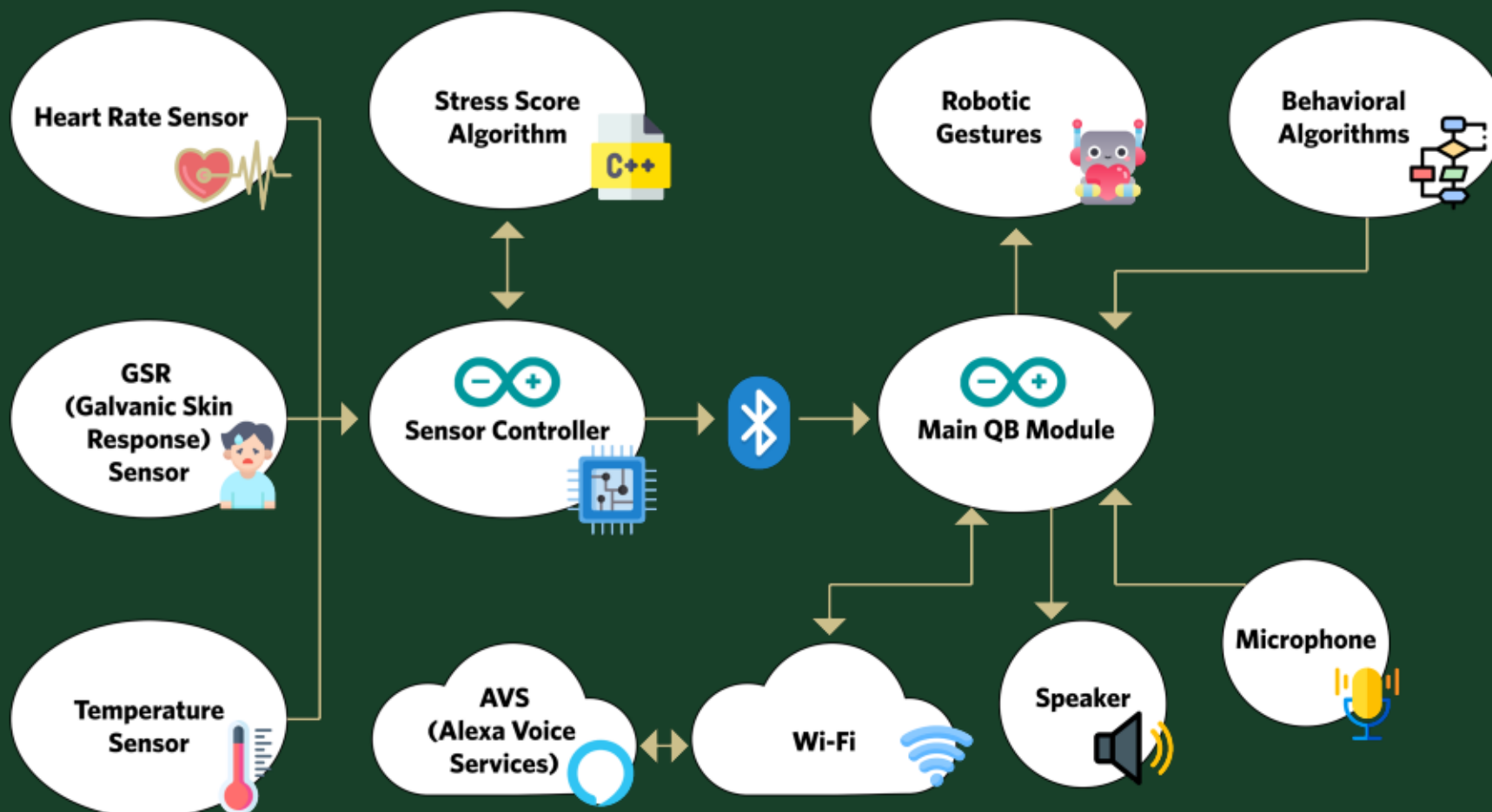
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Problem Statement

QB was created to address the lack of social or emotional support caused by quarantine and social distancing for those prone to suffer from stress or similar mental health issues.



System block diagram

Background

As a result of increased social distancing due to the ongoing COVID-19 pandemic, many find themselves increasingly isolated from friends, family, and other means of support which they might otherwise have leaned upon as a source of emotional relief. With so many people today living in increasingly stressful conditions, the opportunity for worsening mental health increases as well. Knowing that these in turn have a negative impact on physical health conditions like high blood pressure, obesity, and heart disease to name a few, the need to mitigate stress for those stuck at home far more than usual is becoming increasingly evident. We propose a solution; Project QB. QB, short for Quarantine Buddy is a robotic companion designed especially for those missing out on their normal support net because of social distancing and self-isolation during the pandemic.

Summary

The core of QB is its AVS functionality to facilitate the **user voice interface**. QB will interact with the user when they are stressed to suggest and assist in several ways for the user to reduce and manage stress levels. To create a sense of personality for QB, a set of **robotic gestures** with his arms and head have been added to coincide with certain interactions. QB's sensor array is made up of sensors for temperature, heart rate, and a galvanic skin response to take user **biometric readings**. These take their respective measurements at regular intervals which are then handled and processed by an Arduino LilyPad to generate a user Stress Score. If the Stress Score exceeds a given threshold, a Moment of Stress (MoS) is signaled. The information generated by the sensor Arduino is then **wirelessly transmitted via Bluetooth** to the main body of QB.

Impact on the Community

- Stress can contribute to a variety of negative mental and physical conditions. Less stress means an overall healthier state of being.

