Heart Function

Challenge Problem and Resources

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Gaming Research Integration for Learning Laboratory® (GRILL®)
Summer 2014

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1. CHALLENGE PROBLEM: HEART FUNCTION

ECG, or an electrocardiogram, is a physiological measure of the electrical activity of the heart. An ECG can tell you a lot about the heart's function. Using programming software such as MATLAB, FreeMat, or other computer scripting to load in the ECG data, you can create a visual graph of the ECG as a function of time, and calculate the average heart rate. Make sure that you conduct research to understand what an ECG is, what sampling frequency is, and how you can identify different heart beats in an ECG. You will be provided with a recording of an ECG in data points and the sampling frequency of the ECG. As a final product, you should have a plot of the ECG in real time and the average heart rate. Analyze the calculated heart rate and determine if this value is expected.

1.1. THE TOOLS

Use programming software such as MATLAB, FreeMat, or other computer scripting.

1.2. THE CHALLENGE

Create a program that can determine the average heart rate of a person based on the raw ECG data provided.