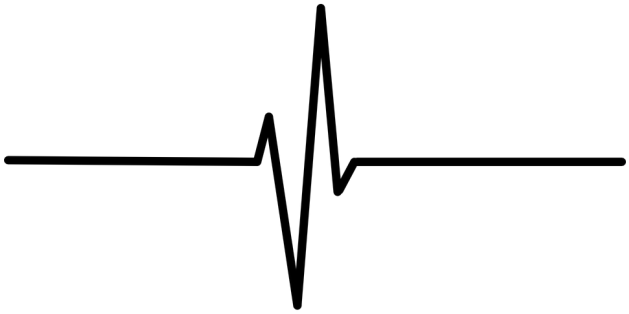

Final Project

T.P.S Report Pt. 3

COVER SHEET

Tad Miller
Danny Nsouli
Systems Programming

Implementation - Heartbeat Monitor

C Code

In this part of the project we are implementing an environmental sensor to work alongside our heart beat monitor data. In this case we are working with a light sensor to track RGB data depending on the environment it's in. For the host program we have implemented new commands besides "show", "resume", and "pause" from the previous parts. "Rate" prints out the current heart rate value. "Env" is able to get the value of the light sensor's readings from the Arduino, which is then printed out. "Hist" prints out a version of the histogram for the heart rate during the current time period. "Hist X" prints out a version of the histogram for the heart rate as well, however, X represents a variable for the time block that the user wants the histogram to be based off of. "Reset" will just delete all the data from the backing file and finally "exit" will just exit the host program.

Arduino Code

The arduino code handles the way the light sensor works. The arduino code is basically supposed to receive signals in the form of bytes that the host program sends in order to send the host program the data it desires depending on the user's commands. When "env" is called in the host program the arduino sends readings from the light sensor to the program in order for them to be printed out from the console. For the "rate" function the arduino sends the current heart rate value to the host program to print through a method. "Hist" and "Hist X" print a version of the histogram, however, one for the current time frame and the other is for a given time frame. The arduino is signalled to send the heart rate data in whatever time frame to the host program in order to construct the histogram on the other side in the console.