Script

Hello and welcome to my video presentation for my Course work project Exam number: 113652

The part of Wellbeing I focused on was mental and physical wellbeing for students when studying

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Basic Requirement 1: **Create a Fully Automated Embedded System that utilizes digital/analogue outputs to support the theme of wellbeing**

For my embedded system I decided to make a study tracker. I used the in built micro bit sensors to collect data on sound levels in DB temperature levels in degrees Celsius as well as using the inbuilt gyro meter to determine if the user was drinking water. The system would automatically collect this data upon receiving power. I allowed for the user to press the a button to start tracking the time it had elapsed and then alerted the user once 30 mins had passed. My outputs consists of sending the data out over the serial port. I also used both the in built led screen and the inbuilt speaker to alert the user when 30 minutes had elapsed

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Basic Requirement 2: **Validate and Store the data gathered from the embedded system**

I sent up the mircobit code to send all data received over serial to a PC, I used the code shown in this image to determine what serial port it had connected to and used this piece of code to initially take in the data and place it into a csv file, this code also checks for null values and prevents them from entering the csv. To validate the data I had assigned each data type a letter at the end of each. I then used a function I created to filter the data and place each one into the correct list based on the letter present in the data point. I then ran through each list 2 more times to remove the letter and make the values intergrats to preform calculations on it ( show data process function)

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**Basic Requirement 3: Create an analysis component that can be used to calculate and predict certain information and inform future decisions related to wellbeing:**

After making each list integer I created a function to calculate the mean of each list. I then used this mean to inform the end user about their study environment for example if it was too loud or to warm if they needed to drink more water.

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**Advanced Requirements**

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**Advanced Requirement 1: Using Python and/or JavaScript, create a computer model based on your own personally created dataset of wellbeing data or one sourced externally. Your personal dataset could be generated manually, programmatically or by the embedded system. It should contain multiple descriptive features of wellbeing and the model should be able**