

**School of Information Technology & Engineering**

**M. Tech (Software Engineering)**

**SWE 4005: Internet of Things - FALL 2019**

(Note: Please don’t limit your answer to the question; you may also extend the nature wherever necessary. **Review Date 06.11.2019)**

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| TEAM NAME : CLUELESS STOP |
| Team Member(s) with Reg # and Name :  NAME1:Hemamalini.R  REG NO1:16MIS0124  MOBILE1:9566889698  EMAIL1:hemamalini.r2016@vitstudent.ac.in  NAME2:SOWMIYA DEVI.K  REG NO2:16MIS0400  MOBILE2:8682957383  EMAIL2:sowmiyadevi.r2016@vitstudent.ac.in  NAME3:PAVITHRA BHAVANI.M  REG NO3:16MIS0498  MOBILE:9791481101  EMAIL3:pavithra.3698@gmail.com |
| Project Title : Body Dehydration Monitor |
| **1. Introduction**  **1.1 Problem Statement**  Dehydration is a condition that can occur when the loss of body fluids, mostly water, exceeds the amount that is taken in. With dehydration, more water is moving out of individual cells and then out of the body than the amount of water that is taken in through drinking. Medically, dehydration usually means a person has lost enough fluid so that the body begins to lose its ability to function normally and then begins to produce symptoms related to the fluid loss. Although infants and children are at highest risk for dehydration, many adults and especially the elderly have significant risk factors. The motive of the project is to monitor the hydration level in human body.  **1.2 Importance**  Research shows that as little as 1 percent dehydration [negatively affects](https://www.ncbi.nlm.nih.gov/pubmed/17921465) our mood, attention, memory and motor coordination. Data in humans is lacking and contradictory, but it appears that [brain tissue fluid decreases](https://www.ncbi.nlm.nih.gov/pubmed/26381562) with dehydration, thus reducing brain volume and temporarily affecting cell function.  As we 'lose' body water [without replacing it](http://onlinelibrary.wiley.com/doi/10.1002/cphy.c130017/pdf), our blood becomes more concentrated.  Dehydration is major cause for various health issues ,this lead to kidney failure, body stone,fainting,loss of energy. To overcome this problem, we need to give solution for dehydration.  **This helps us to make body hydrated,this hydration help** |
| **2. Overview and Planning**  **2.1 Proposed System Overview**  In exisiting system ,two sensor has been invented to overcome dehydration ,make body hydrate when required and they are many app available in market to remind us to drink water.But there is no app and device to monitor our body Hydration.  In our Project,We monitor the body hydration using some interconnected devices and we develop an app to store the data and notify us about the hydration level as well as to store the mointered data.  **2.2 Challenges**  1. Connecting an Hardware Devices to sense our body  2.Interconnecting the Hardware devices  3.Connecting Hardware Device with the Software  4.Making an app to monitor and update data frequently  5.Finding an appropriate sensor as well giving an sinewave as input taken from body    **2.3 Assumptions**  After the project has done we will use this prototype to convert into a product like a wrist watch.develop a startup business.  **2.4 Architecture Specifications:**  Moisture Sensor:  cathode and anode is connected to the +ve and -ve of potentiometer.  Pins in Potentiometer:  A0 pin is connected to a A0 pin of Arduino UNO through breadboard  GND is connected to GND  VV is connected to 3.3v of Arduino UNO    **2.5 Hardware Requirements**  1.Arduino  2.Potentiometer  3.Resistor  4.Bread Board  5.Jumper wires  6.NodeMCU 8266  **2.6 Software Requirements**  1.Arduino IDE  2.Blynk |
| **3. IoT Design Methodologies**  **3.1 Purpose and Behaviour Specification:**  Purpose:To check the body hydration and notifies the user to drink water.  Behaviour: Sense the body moisture and show the value to user and notify user to drink water when needed.  System Management Requirement:The system provide monitoring functions  Data Analysis Requirement: The system perform analysis of data    **3.2 Process Specification:**          **Low High**  Threshold value    Notify  Don’t Notify    **3.3 Domain Model Specification:**  Device:  1.Arduino UNO  2.Potentiometer  3.Bread Board  4.Jumper wires  Physical entity:Human Body  Services: Sensor sense the body moisture and provide an output  **3.4 Service Specifications:**    Schedule  Notify Every 15 Sec  Input  Mode: Auto/Manual  State:High/Low      Service  Check hydration  Output  Notify Hydrate or Dehydrate    **3.5 IOT Level Specification:**  **Local Cloud**      REST/WebSocket Communication  Controller Service      Resource  Database        Device      **3.7 Device and Component Integration:**      **4.System Implementation**  **4.1 Module Development-code**  #include <Blynk.h>  #include <Blynk.h>  #define BLYNK\_PRINT Serial  #include <ESP8266WiFi.h>  #include <BlynkSimpleEsp8266.h>  char auth[] = "Y2VnkSbVLw4NkSb-PYVkj9SyymEBS3P6"; //code sent via email  const int sensorPin = 4;  int sensorState = 0;  int lastState = 0;  void setup()  {  Serial.begin(9600);  Blynk.begin(auth, "dare", "kalai123"); //wifi name and password  pinMode(sensorPin, INPUT);  }  void loop()  {  Blynk.run();  sensorState = digitalRead(sensorPin);  Serial.println(sensorState);  if (sensorState == 1 && lastState == 0) {  Serial.println("needs water, send notification");  Blynk.notify("Drink Water");  lastState = 1;  delay(1000);  //send notification    }  else if (sensorState == 1 && lastState == 1) {  //do nothing, has not been watered yet  Serial.println("has not been watered yet");  delay(1000);  }  else {  //st  Serial.println("does not need water");  lastState = 0;  delay(1000);  }    delay(100);  }  4.2 Output/result:      4.3 Discussion:  5.Conclusion and Future Developments:  In this project we will calculate the body hydration using a moisture sensor. We implemented in a way to check body hydration .We have fixed a threshold value. If our value go less than the threshold value it means our body is hydrated. If body contains less water, it notifies us by send email as well as message. Our further development is to design a prototype which predicts various factor of body like heart rate, body temperature and humidity all these factors together predict a body hydration. The hydration also depend on climate. We need to predict that as well. |
| Any other related information, you want to add. |
| For Evaluation only  Status : ACCEPTED / REJECTED |

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|  | | | **M.Tech (Software Engineering)**  **SWE 4005 : Internet of Things - FALL 2019**  **Course Project- Review- II**  **Evaluation Sheet**  **(Review Date 19.09.2019)** | | | |
| **Title: Body Hydration Monitor** | | |  | | | |
| **Team Name Clueless Stop** | | |  | | | |
| **Project Team** | | | | | | |
| **S.No** | **Register Number** | **Student Name** | | | **Signature** | **Guided By** |
| **1** | **16MIS0124** | **HEMAMAALINI R** | | |  |  |
| **2** | **16MIS0400** | **SOWMYA DEVI K** | | |  |
| **3** | **16MIS0498** | **PAVITHRA BHAVANI M** | | |  |
| **Team Member(s) Contribution and Performance Assessment** | | | | | | |
| **Components** | | | | **Student 1** | **Student 2** | **Student 3** |
| Design  (10) | | | |  |  |  |
| Implementation (20) | | | |  |  |  |
| Total (30) | | | |  |  |  |
| **Expectation for Next Reviews** | | | | | **Comments** | |
| **Name & Signature of the Evaluator** | | | | | | |