Smart Bucket

Project Based Learning

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Version : 0.1

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# 

# ToDo

InProgress

Done

Incomplete

* Learn git and commit those arduino firmware
* Follow the project folder structure of <https://github.com/AravinthPanch/araBeat>
* Add details of components such as model, packaging, characteristics, datasheet
* Draw schematic diagram in KiCad and choose right components
* Improve the technical writing and grammar, and simplify the sentences
* Improve the proposal structure by looking at the sample technical project proposals in the internet
  + <https://github.com/AravinthPanch/gesture-recognition-for-human-robot-interaction>
* Draw flowchart for the system design
* Prepare Gantt chart of milestones of 2020
  + [https://i.ytimg.com/vi/JHCZaRcYHpU/maxresdefault.jp`g](https://i.ytimg.com/vi/JHCZaRcYHpU/maxresdefault.jpg)
  + Send the chart to Ara via email
* Talk to Kishoth about sending money to USA / Alex Williams via Abi
* Clean up Clockify, add projects, tag
* Always measure the time for the retrospective analysis
* WhatsApp / Call Denis Vitaliev
  + ‭+49 176 41124218‬

# Problem statement

1. Automatically fill water when it is empty and should stop filling water when it is full.
2. Switching information should be displayed on the L.C.D Screen.

# Deliverables

* Project Proposal
* Project Proposal Presentation
* Project report
* Project Software
* Project Hardware

# Procedures and methods

## Systems

Smart Bucket is a device Automatically fills water when it is empty and stops filling water when it is full. Water switching. Switching water level should be

* In the water container I'll add **drill props** to sense the water level.
  + Water level sensors will be added to the water container.
* When the container is empty, the data will go through the arduino and let the water pump to pump the water
  + Arduino will constantly read the sensor signal and when water reaches the bottom of the container, arduino will actuate the water pump.

Also, manually I'll fix a syringe in the water container to get the water outside. When the container is empty, the data will go through the arduino and let the water pump to pump the water. Then the water will fill in the tank. When the container is full, the **data will go through the arduino** and stop the function of the water pump.

## L.C.D Screen

In the water container I'll add drill props to sense the water level. The data will go through the arduino and display in the L.C.D Screen.

# **Anticipated Outcomes**

* Automatic Refilling water system.
* Display the level of water in the L.C.D screen.

# Tentative Work Schedule

InProgress

Done

Incomplete

|  |  |  |
| --- | --- | --- |
| To Do | Days | Date |
| Select components and study about them | 01 | 01.05.2020 |
| Design the schematic diagram | 01 | 02.05.2020 |
| Coding for Microcontroller and get the components for the project | 07 | 03.05.2020 - 09.05.2020 |
| Test on Breadboard | 02 | 10.05.2020 - 11.05.2020 |
| Fix on ProtoBoard | 02 | 12.05.2020 - 13.05.2020 |
| P.C.B designing | 07 | 14.05.2020 - 20.05.2020 |

# Resources required

## Software

* Arduino
* KiCadGoogle drawing

## Hardware

* **4 Liter Water Container**
* **Big Water Bucket**
* **Arduino Nano**
* **L.C.D Screen**
* **Water Pump**
* Jumper wires
* **¼ “ tube**
* LM 317 Module
* Prototype PCB BreadBoard
* **6 VDC Relay**
* **BC 547**
* **1n400**
* **10 kohm x 5**
* **Strinch**
* Header Pin
* **Soldering kit**

# Budget

|  |  |  |
| --- | --- | --- |
| Component Name | Total number | Total Price |
| Arduino Nano | 01 | US$ 10 |
| **L.C.D Screen** | 01 | US$ 05 |
| Water Pump | 01 | US$ 07 |
| **Strinch** | 01 | US$ 02 |
| **¼ “ tube** | 01 | US$ 02 |
| LM317 - Voltage Regulator - 12V to 5V - TO-220-3 | 01 | US$ 01 |
| **Prototype PCB BreadBoard** | 02 | US$ 01 |
| 6 VDC Relay\* | 01 | US$ 04 |
| Transistor - BC 547\* | 10 | US$ 01 |
| 1n400 \* | 05 | US$ 01 |
| 10 kohm | 05 | US$ 01 |
| **Header Pin** | 40 | US$ 04 |
| **Jumper wires** | 120 | US$ 07 |
| **Drill pro** | 50 | US$ 04 |
| **Total** |  | US$ 50 |